Authorization for Credit Card Transactions

Department of Homeland Security

Form G-1450

How To Fill Out Form G-1450

1. Type or print legibly in black ink.
2. Complete the "**Applicant's/Petitioner's/Requester's Information**," "**Credit Card Billing Information**," and "**Credit Card Information**" sections and sign the authorization. **NOTE:** The credit card must be issued by a U.S. bank.
3. Place your Form G-1450 ON TOP of your application, petition, or request package.

NOTE: Failure to provide the requested information may result in DHS and your financial institution not accepting the payment. DHS cannot process credit card payments without an authorized signature.

NOTE: Please see the USCIS Form G-1450 website for additional information.

We recommend that you print or save a copy of your completed Form G-1450 to review in the future and for your records.

By completing this transaction, you agree that you have paid for a government service and that the filing fee, biometric services fee and all related financial transactions are final and not refundable, regardless of any action DHS takes on an application, petition, or request. You must submit all fees in the exact amounts. DHS will charge your credit card up to the amount you authorize below.

Please refer to the form(s) you are filing for additional information, or you may call the USCIS Customer Contact number at **1-800-375-5283**. For TTY (deaf or hard of hearing) call: **1-800-767-1833**.

Applicant's/Petitioner's/Requester's Information (Full Legal Name)		
Given Name (First Name) Jackson	Middle Name (if any) N/A	Family Name (Last Name) MARQUES DOS SANTOS
Credit Card Billing Information (Credit Card Holder's Name as it Appears on the Card)		
Given Name (First Name)	Middle Name (if any)	Family Name (Last Name)
Credit Card Holder's Billing Address:		
Street Number and Name	Apt. Ste. Flr. ☐ ☐ ☐	Number
City or Town	State	ZIP Code
Credit Card Holder's Signature and Contact Information:		
Credit Card Holder's Signature		
Credit Card Holder's Daytime Telephone Number	Credit Card Holder's Email Address	

Credit Card Information		
Credit Card Number	**Credit Card Type:** ☐ Visa ☐ MasterCard ☐ American Express ☐ Discover	Authorized Payment Amount $ 715.00
Credit Card Expiration Date (mm/yyyy) CVV Code		

Authorization for Credit Card Transactions

Department of Homeland Security

Form G-1450

How To Fill Out Form G-1450

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2. Complete the "**Applicant's/Petitioner's/Requester's Information**," "**Credit Card Billing Information**," and "**Credit Card Information**" sections and sign the authorization. **NOTE:** The credit card must be issued by a U.S. bank.
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Applicant's/Petitioner's/Requester's Information (Full Legal Name)		
Given Name (First Name) Jackson	Middle Name (if any) N/A	Family Name (Last Name) MARQUES DOS SANTOS
Credit Card Billing Information (Credit Card Holder's Name as it Appears on the Card)		
Given Name (First Name)	Middle Name (if any)	Family Name (Last Name)
Credit Card Holder's Billing Address:		
Street Number and Name	Apt. Ste. Flr. ☐ ☐ ☐	Number
City or Town	State	ZIP Code
Credit Card Holder's Signature and Contact Information:		
Credit Card Holder's Signature		
Credit Card Holder's Daytime Telephone Number	Credit Card Holder's Email Address	

Credit Card Information		
Credit Card Number	**Credit Card Type:** ☐ Visa ☐ MasterCard ☐ American Express ☐ Discover	Authorized Payment Amount $ 300.00
Credit Card Expiration Date (mm/yyyy) CVV Code		

e-Notification of Application/Petition Acceptance

Department of Homeland Security
U.S. Citizenship and Immigration Services

USCIS
Form G-1145

What Is the Purpose of This Form?

Use this form to request an electronic notification (e-Notification) when U.S. Citizenship and Immigration Services accepts your immigration application. This service is available for applications filed at a USCIS Lockbox facility.

General Information

Complete the information below and clip this form to the first page of your application package. You will receive one e-mail and/or text message for each form you are filing.

We will send the e-Notification within 24 hours after we accept your application. Domestic customers will receive an e-mail and/or text message; overseas customers will only receive an e-mail. Undeliverable e-Notifications cannot be resent.

The e-mail or text message will display your receipt number and tell you how to get updated case status information. It will not include any personal information. The e-Notification does not grant any type of status or benefit; rather it is provided as a convenience to customers.

USCIS will also mail you a receipt notice (I-797C), which you will receive within 10 days after your application has been accepted; use this notice as proof of your pending application or petition.

USCIS Privacy Act Statement

AUTHORITIES: The information requested on this form is collected pursuant to section 103(a) of the Immigration and Nationality Act, as amended INA section 101, et seq.

PURPOSE: The primary purpose for providing the information on this form is to request an electronic notification when USCIS accepts immigration form. The information you provide will be used to send you a text and/or email message.

DISCLOSURE: The information you provide is voluntary. However, failure to provide the requested information may prevent USCIS from providing you a text and/or email message receipting your immigration form.

ROUTINE USES: The information provided on this form will be used by and disclosed to DHS personnel and contractors in accordance with approved routine uses, as described in the associated published system of records notices [**DHS/USCIS-007 - Benefits Information System and DHS/USCIS-001 - Alien File (A-File) and Central Index System (CIS)**, which can be found at **www.dhs.gov/privacy**]. The information may also be made available, as appropriate for law enforcement purposes or in the interest of national security.

Complete this form and clip it on top of the first page of your immigration form(s).

Applicant/Petitioner Full Last Name	Applicant/Petitioner Full First Name	Applicant/Petitioner Full Middle Name
MARQUES DOS SANTOS	**Jackson**	**N/A**

Email Address	Mobile Phone Number (Text Message)
cardilicitrus@gmail.com	

Notice of Entry of Appearance as Attorney or Accredited Representative

Department of Homeland Security

DHS
Form G-28
OMB No. 1615-0105
Expires 05/31/2021

Part 1. Information About Attorney or Accredited Representative

1. USCIS Online Account Number (if any)

► 0 0 7 4 9 2 6 2 5 4 3 8

Name of Attorney or Accredited Representative

2.a. Family Name (Last Name): HAVERROTH SILVA

2.b. Given Name (First Name): Otavio

2.c. Middle Name: N/A

Address of Attorney or Accredited Representative

3.a. Street Number and Name: PO Box 90487

3.b. ☐ Apt. ☐ Ste. ☐ Flr. N/A

3.c. City or Town: San Diego

3.d. State: CA **3.e.** ZIP Code: 92169

3.f. Province: N/A

3.g. Postal Code: N/A

3.h. Country: USA

Contact Information of Attorney or Accredited Representative

4. Daytime Telephone Number: 5102419336

5. Mobile Telephone Number (if any): 5102419336

6. Email Address (if any): otavio@legalhs.com

7. Fax Number (if any): N/A

Part 2. Eligibility Information for Attorney or Accredited Representative

Select **all applicable** items.

1.a. ☒ I am an attorney eligible to practice law in, and a member in good standing of, the bar of the highest courts of the following states, possessions, territories, commonwealths, or the District of Columbia. If you need extra space to complete this section, use the space provided in **Part 6. Additional Information**.

Licensing Authority: California

1.b. Bar Number (if applicable): 343486

1.c. I (select **only one** box) ☒ am not ☐ am subject to any order suspending, enjoining, restraining, disbarring, or otherwise restricting me in the practice of law. If you are subject to any orders, use the space provided in **Part 6. Additional Information** to provide an explanation.

1.d. Name of Law Firm or Organization (if applicable): HS Law Corp

2.a. ☐ I am an accredited representative of the following qualified nonprofit religious, charitable, social service, or similar organization established in the United States and recognized by the Department of Justice in accordance with 8 CFR part 1292.

2.b. Name of Recognized Organization: N/A

2.c. Date of Accreditation (mm/dd/yyyy): N/A

3. ☐ I am associated with N/A, the attorney or accredited representative of record who previously filed Form G-28 in this case, and my appearance as an attorney or accredited representative for a limited purpose is at his or her request.

4.a. ☐ I am a law student or law graduate working under the direct supervision of the attorney or accredited representative of record on this form in accordance with the requirements in 8 CFR 292.1(a)(2).

4.b. Name of Law Student or Law Graduate: N/A

Part 3. Notice of Appearance as Attorney or Accredited Representative

If you need extra space to complete this section, use the space provided in **Part 6. Additional Information**.

This appearance relates to immigration matters before (select **only one** box):

1.a. ☒ U.S. Citizenship and Immigration Services (USCIS)

1.b. List the form numbers or specific matter in which appearance is entered.

I-140, ETA 9089

2.a. ☐ U.S. Immigration and Customs Enforcement (ICE)

2.b. List the specific matter in which appearance is entered.

N/A

3.a. ☐ U.S. Customs and Border Protection (CBP)

3.b. List the specific matter in which appearance is entered.

N/A

4. Receipt Number (if any)

► N/A

5. I enter my appearance as an attorney or accredited representative at the request of the (select **only one** box):

☐ Applicant ☒ Petitioner ☐ Requestor

☐ Beneficiary/Derivative ☐ Respondent (ICE, CBP)

Information About Client (Applicant, Petitioner, Requestor, Beneficiary or Derivative, Respondent, or Authorized Signatory for an Entity)

6.a. Family Name (Last Name): MARQUES DOS SANTOS

6.b. Given Name (First Name): Jackson

6.c. Middle Name: N/A

7.a. Name of Entity (if applicable)

N/A

7.b. Title of Authorized Signatory for Entity (if applicable)

N/A

8. Client's USCIS Online Account Number (if any)

► N/A

9. Client's Alien Registration Number (A-Number) (if any)

► A- N/A

Client's Contact Information

10. Daytime Telephone Number

+55 (75) 98114-3910

11. Mobile Telephone Number (if any)

+55 (75) 98114-3910

12. Email Address (if any)

cardilicitrus@gmail.com

Mailing Address of Client

NOTE: Provide the client's mailing address. **Do not** provide the business mailing address of the attorney or accredited representative **unless** it serves as the safe mailing address on the application or petition being filed with this Form G-28.

13.a. Street Number and Name: PO Box 90487

13.b. ☐ Apt. ☐ Ste. ☐ Flr. N/A

13.c. City or Town: San Diego

13.d. State: CA **13.e.** ZIP Code: 92169

13.f. Province: N/A

13.g. Postal Code: N/A

13.h. Country

USA

Part 4. Client's Consent to Representation and Signature

Consent to Representation and Release of Information

I have requested the representation of and consented to being represented by the attorney or accredited representative named in **Part 1.** of this form. According to the Privacy Act of 1974 and U.S. Department of Homeland Security (DHS) policy, I also consent to the disclosure to the named attorney or accredited representative of any records pertaining to me that appear in any system of records of USCIS, ICE, or CBP.

Part 4. Client's Consent to Representation and Signature (continued)

Options Regarding Receipt of USCIS Notices and Documents

USCIS will send notices to both a represented party (the client) and his, her, or its attorney or accredited representative either through mail or electronic delivery. USCIS will send all secure identity documents and Travel Documents to the client's U.S. mailing address.

If you want to have notices and/or secure identity documents sent to your attorney or accredited representative of record rather than to you, please select **all applicable** items below. You may change these elections through written notice to USCIS.

1.a. ☒ I request that USCIS send original notices on an application or petition to the business address of my attorney or accredited representative as listed in this form.

1.b. ☒ I request that USCIS send any secure identity document (Permanent Resident Card, Employment Authorization Document, or Travel Document) that I receive to the U.S. business address of my attorney or accredited representative (or to a designated military or diplomatic address in a foreign country (if permitted)).

NOTE: If your notice contains Form I-94, Arrival-Departure Record, USCIS will send the notice to the U.S. business address of your attorney or accredited representative. If you would rather have your Form I-94 sent directly to you, select **Item Number 1.c.**

1.c. ☐ I request that USCIS send my notice containing Form I-94 to me at my U.S. mailing address.

Signature of Client or Authorized Signatory for an Entity

2.a. Signature of Client or Authorized Signatory for an Entity

➡

2.b. Date of Signature (mm/dd/yyyy) 02/24/2026

Part 5. Signature of Attorney or Accredited Representative

I have read and understand the regulations and conditions contained in 8 CFR 103.2 and 292 governing appearances and representation before DHS. I declare under penalty of perjury under the laws of the United States that the information I have provided on this form is true and correct.

1. a. Signature of Attorney or Accredited Representative

1.b. Date of Signature (mm/dd/yyyy) 02/24/2026

2.a. Signature of Law Student or Law Graduate

N/A

2.b. Date of Signature (mm/dd/yyyy) N/A

Part 6. Additional Information

If you need extra space to provide any additional information within this form, use the space below. If you need more space than what is provided, you may make copies of this page to complete and file with this form or attach a separate sheet of paper. Type or print your name at the top of each sheet; indicate the **Page Number**, **Part Number**, and **Item Number** to which your answer refers; and sign and date each sheet.

1.a Family Name (Last Name): MARQUES DOS SANTOS

1.b. Given Name (First Name): Jackson

1.c. Middle Name: N/A

2.a. Page Number	**2.b.** Part Number	**2.c.** Item Number
N/A	N/A	N/A

2.d.

N/A

3.a. Page Number	**3.b.** Part Number	**3.c.** Item Number
N/A	N/A	N/A

3.d.

N/A

4.a. Page Number	**4.b.** Part Number	**4.c.** Item Number
N/A	N/A	N/A

4.d.

N/A

5.a. Page Number	**5.b.** Part Number	**5.c.** Item Number
N/A	N/A	N/A

5.d.

N/A

6.a. Page Number	**6.b.** Part Number	**6.c.** Item Number
N/A	N/A	N/A

6.d.

N/A

Immigrant Petition for Alien Workers

Department of Homeland Security
U.S. Citizenship and Immigration Services

USCIS Form I-140
OMB No. 1615-0015
Expires 02/28/2027

For USCIS Use Only	Fee Stamp	Priority Date	Consulate	Action Block

Classification

- ☐ 203(b)(1)(A) Alien of Extraordinary Ability
- ☐ 203(b)(1)(B) Outstanding Professor or Researcher
- ☐ 203(b)(1)(C) Multinational Executive or Manager
- ☐ 203(b)(2) Member of Professions with Advanced Degree/Exceptional Ability
- ☐ 203(b)(3)(A)(i) Skilled Worker
- ☐ 203(b)(3)(A)(ii) Professional
- ☐ 203(b)(3)(A)(iii) Other Worker

Certification

- ☐ National Interest Waiver (NIW)
- ☐ Schedule A, Group I
- ☐ Schedule A, Group II

Remarks

To be completed by an Attorney or Accredited Representative (if any).	☒ Select this box if Form G-28 or Form G-28I is attached.	Attorney State Bar Number (if applicable)	Attorney or Accredited Representative USCIS Online Account Number (if any)
		343486	007492625438

► **START HERE - Type or print in black ink.**

Part 1. Information About the Person or Organization Filing This Petition

If an individual is filing this petition, answer **Item Numbers 1.a. - 1.c.** If a company or organization is filing this petition, answer **Item Number 2.**

1.a. Family Name (Last Name): MARQUES DOS SANTOS

1.b. Given Name (First Name): Jackson

1.c. Middle Name: N/A

2. Company or Organization Name: N/A

Mailing Address

(USCIS ZIP Code Lookup)

3.a. In Care Of Name: Otavio HAVERROTH SILVA

3.b. Street Number and Name: PO Box 90487

3.c. ☐ Apt. ☐ Ste. ☐ Flr. N/A

3.d. City or Town: San Diego

3.e. State: CA **3.f.** ZIP Code: 92169

3.g. Province: N/A

3.h. Postal Code: N/A

3.i. Country: USA

Other Information

4. IRS Employer Identification Number (EIN) ► N/A

5. Are you a nonprofit organized as tax exempt or a governmental research organization? ☐ Yes ☒ No

6. Do you currently employ a total of 25 or fewer full-time equivalent employees in the United States, including all affiliates or subsidiaries of this company/organization? ☒ Yes ☐ No

7. U.S. Social Security Number (SSN) (if any) ► N/A

8. USCIS Online Account Number (if any) ► N/A

Part 2. Petition Type

This petition is being filed for (select **only one** box):

1.a. ☐ An alien of extraordinary ability.

1.b. ☐ An outstanding professor or researcher.

1.c. ☐ A multinational executive or manager.

1.d. ☐ A member of the professions holding an advanced degree or an alien of exceptional ability (who is **NOT** seeking a National Interest Waiver (NIW)).

1.e. ☐ A professional (at a minimum, possessing a bachelor's degree or a foreign degree equivalent to a U.S. bachelor's degree).

Part 2. Petition Type (continued)

1.f. ☐ A skilled worker (requiring at least two years of specialized training or experience).

1.g. ☐ Any other worker (requiring less than two years of training or experience).

1.h. ☒ An alien applying for an NIW (who **IS** a member of the professions holding an advanced degree or an alien of exceptional ability).

This petition is being filed (select **only one** box):

2.a. ☐ To amend a previously filed petition.

Previous Petition Receipt Number

► N/A

2.b. ☐ For the Schedule A, Group I or II designation.

Part 3. Information About the Person for Whom You Are Filing

1.a. Family Name (Last Name): MARQUES DOS SANTOS

1.b. Given Name (First Name): Jackson

1.c. Middle Name: N/A

Mailing Address

2.a. In Care Of Name: PO Box 90487

2.b. Street Number and Name: N/A

2.c. ☐ Apt. ☐ Ste. ☐ Flr. N/A

2.d. City or Town: San Diego

2.e. State: CA **2.f.** ZIP Code: 92169

2.g. Province: N/A

2.h. Postal Code: N/A

2.i. Country: USA

Other Information

3. Date of Birth (mm/dd/yyyy): 03/31/1986

4. City/Town/Village of Birth: Nova Soure

5. State or Province of Birth: Bahia

6. Country of Birth: Brazil

7. Country of Citizenship or Nationality: Brazil

8. Alien Registration Number (A-Number) (if any)

► A- N/A

9. U.S. SSN (if any) ► N/A

Information About His or Her Last Arrival in the United States

If the person for whom you are filing is in the United States, provide the following information.

10. Date of Last Arrival (mm/dd/yyyy): N/A

11.a. Form I-94 Arrival-Departure Record Number

► N/A

11.b. Expiration Date of Authorized Stay Shown on Form I-94 (mm/dd/yyyy): N/A

11.c. Status on Form I-94 (for example, class of admission, or paroled, if paroled): N/A

12. Passport Number: N/A

13. Travel Document Number: N/A

14. Country of Issuance for Passport or Travel Document: N/A

15. Expiration Date for Passport or Travel Document (mm/dd/yyyy): N/A

Part 4. Processing Information

Provide the following information for the person named in **Part 3.** (select **only one** box):

1.a. ☒ Alien will apply for a visa abroad at a U.S. Embassy or U.S. Consulate at:

1.b. City or Town: Rio de Janeiro

1.c. Country: Brazil

2.a. ☐ Alien is in the United States and will apply for adjustment of status to that of lawful permanent resident.

Part 4. Processing Information (continued)

2.b. Alien's current country of residence or, if now in the United States, last country of permanent residence abroad.

Brazil

If you provided a United States address in **Part 3.**, provide the person's foreign address in **Item Numbers 3.a. - 3.f.**:

3.a. Street Number and Name: Lucio Bento Cardoso 4

3.b. ☐ Apt. ☐ Ste. ☐ Flr. N/A

3.c. City or Town: Alagoinhas

3.d. Province: Bahia

3.e. Postal Code: 48005040

3.f. Country: Brazil

If the person's native alphabet is other than Roman letters, type or print the person's foreign name and address in the native alphabet in **Item Numbers 4.a. - 4.c.**:

4.a. Family Name (Last Name): N/A

4.b. Given Name (First Name): N/A

4.c. Middle Name: N/A

Mailing Address

5.a. In Care Of Name: N/A

5.b. Street Number and Name: N/A

5.c. ☐ Apt. ☐ Ste. ☐ Flr. N/A

5.d. City or Town: N/A

5.e. Province: N/A

5.f. Postal Code: N/A

5.g. Country: N/A

If you answer "Yes" to **Item Numbers 6.a. - 10.**, provide the case number, office location, date of decision, and disposition of the decision in the space provided in **Part 11. Additional Information**.

6.a. Are you filing any other petitions or applications with this Form I-140? ☐ Yes ☒ No

6.b. If you answered "Yes" **to Item Number 6.a.**, select all applicable boxes:

- ☐ Form I-485
- ☐ Form I-131
- ☐ Form I-765
- ☐ Other (Provide an explanation in **Part 11. Additional Information**.)

7. Is the person for whom you are filing in removal proceedings? ☐ Yes ☒ No

8. Has any immigrant visa petition ever been filed by or on behalf of this person? ☐ Yes ☒ No

9. Are you filing this petition without an original labor certification because the original labor certification was previously submitted in support of another Form I-140? ☐ Yes ☒ No

10. If you are filing this petition without an original labor certification, are you requesting that U.S. Citizenship and Immigration Services (USCIS) request a duplicate labor certification from the Department of Labor (DOL)? ☐ Yes ☒ No

Part 5. Additional Information About the Petitioner

Type of petitioner (select **only one** box):

1.a. ☐ Employer

1.b. ☒ Self

1.c. ☐ Other (For example, Lawful Permanent Resident, U.S. citizen or any other person filing on behalf of the alien)

N/A

If a company or an organization is filing this petition, provide the following information:

2. Type of Business: N/A

3. Date Established (mm/dd/yyyy): N/A

4. Current Number of U.S. Employees: N/A

5. Gross Annual Income $ N/A

6. Net Annual Income $ N/A

7. NAICS Code ▶ N/A

8. Labor Certification DOL Case Number: N/A

Part 5. Additional Information About the Petitioner (continued)

9. Labor Certification DOL Filing Date (mm/dd/yyyy)

N/A

10. Labor Certification Expiration Date (mm/dd/yyyy)

N/A

If an individual is filing this petition, provide the following information.

11. Occupation

Administrator

12. Annual Income $ N/A

Part 6. Basic Information About the Proposed Employment

1. Job Title

Sales Managers

2. SOC Code ▶ 11 - 2022

3. Nontechnical Job Description

See page 8

4. Is this a full-time position? ☒ Yes ☐ No

5. If the answer to **Item Number 4.** is "No," how many hours per week for the position?

N/A

6. Is this a permanent position? ☒ Yes ☐ No

7. Is this a new position? ☐ Yes ☒ No

8. Wages (Specify hour, week, month, or year):

$ 85,000.00 per year

Worksite Location

For **Item Numbers 9.a. - 9.e.**, provide the address where the person will work if different from the address provided in **Part 1.**

9.a. Street Number and Name: To be determined

9.b. ☐ Apt. ☐ Ste. ☐ Flr. To be determined

9.c. City or Town: Miami

9.d. State: FL **9.e.** ZIP Code: To be determined

Part 7. Information About the Spouse and All Children of the Person for Whom You Are Filing

For **Part 7.**, provide information on the spouse and all children related to the individual for whom you are filing this petition. Also, note if the individual will apply for a visa abroad or adjustment of status as the dependent of the individual for whom the petition is filed. If you need extra space to provide information about additional family members, use the space provided in **Part 11. Additional Information**.

Person 1

1.a. Family Name (Last Name): CARDILI

1.b. Given Name (First Name): Bruna Janaina

1.c. Middle Name: N/A

2. Date of Birth (mm/dd/yyyy): 07/16/1993

3. Country of Birth: Brazil

4. Relationship: Spouse

5. Is he or she applying for adjustment of status? ☐ Yes ☒ No

6. Is he or she applying for a visa abroad? ☒ Yes ☐ No

Person 2

7.a. Family Name (Last Name): CARDILI MARQUES

7.b. Given Name (First Name): Lucas

7.c. Middle Name: N/A

8. Date of Birth (mm/dd/yyyy): 01/07/2015

9. Country of Birth: Brazil

10. Relationship: Son

11. Is he or she applying for adjustment of status? ☐ Yes ☒ No

12. Is he or she applying for a visa abroad? ☒ Yes ☐ No

Part 7. Information About Spouse and All Children of the Person for Whom You Are Filing (continued)

Person 3

13.a. Family Name (Last Name): CARDILI MARQUES

13.b. Given Name (First Name): Noah

13.c. Middle Name: N/A

14. Date of Birth (mm/dd/yyyy): 11/11/2021

15. Country of Birth: Brazil

16. Relationship: Son

17. Is he or she applying for adjustment of status? ☐ Yes ☒ No

18. Is he or she applying for a visa abroad? ☒ Yes ☐ No

Person 4

19.a. Family Name (Last Name): N/A

19.b. Given Name (First Name): N/A

19.c. Middle Name: N/A

20. Date of Birth (mm/dd/yyyy): N/A

21. Country of Birth: N/A

22. Relationship: N/A

23. Is he or she applying for adjustment of status? ☐ Yes ☐ No

24. Is he or she applying for a visa abroad? ☐ Yes ☐ No

Person 5

25.a. Family Name (Last Name): N/A

25.b. Given Name (First Name): N/A

25.c. Middle Name: N/A

26. Date of Birth (mm/dd/yyyy): N/A

27. Country of Birth: N/A

28. Relationship: N/A

29. Is he or she applying for adjustment of status? ☐ Yes ☐ No

30. Is he or she applying for a visa abroad? ☐ Yes ☐ No

Person 6

31.a. Family Name (Last Name): N/A

31.b. Given Name (First Name): N/A

31.c. Middle Name: N/A

32. Date of Birth (mm/dd/yyyy): N/A

33. Country of Birth: N/A

34. Relationship: N/A

35. Is he or she applying for adjustment of status? ☐ Yes ☐ No

36. Is he or she applying for a visa abroad? ☐ Yes ☐ No

Part 8. Contact Information, Certification, and Signature of the Petitioner or Authorized Signatory

Petitioner or Authorized Signatory's Contact Information

1.a. Petitioner's or Authorized Signatory's Family Name (Last Name)

MARQUES DOS SANTOS

1.b. Petitioner's or Authorized Signatory's Given Name (First Name)

Jackson

2. Petitioner's or Authorized Signatory's Title

N/A

3. Petitioner's or Authorized Signatory's Daytime Telephone Number

+55 (75) 98114-3910

4. Petitioner's or Authorized Signatory's Mobile Telephone Number (if any)

+55 (75) 98114-3910

5. Petitioner's or Authorized Signatory's Email Address (if any)

cardilicitrus@gmail.com

Petitioner's or Authorized Signatory's Certification and Signature

If filing this petition on behalf of an organization, I certify that I am authorized to do so by the organization:

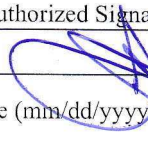
a. I reviewed and provided or authorized all of the responses and information in my petition;

b. I understood all of the responses and information contained in, and submitted with, my petition; and

c. All of the responses and information were complete, true, and correct at the time of filing

Furthermore, I authorize the release of any information from any and all of my records as authorized signatory and the petitioner's records that USCIS may need to determine the petitioner's eligibility for an immigration request and to other entities and persons where necessary for the administration and enforcement of U.S. immigration law.

6.a. Petitioner's or Authorized Signatory's Signature



6.b. Date of Signature (mm/dd/yyyy) 02/24/2026

Part 9. Interpreter's Contact Information, Certification, and Signature

Interpreter's Full Name

1.a. Interpreter's Family Name (Last Name)

N/A

1.b. Interpreter's Given Name (First Name)

N/A

2. Interpreter's Business or Organization Name

N/A

Interpreter's Contact Information

3. Interpreter's Daytime Telephone Number

N/A

4. Interpreter's Mobile Telephone Number (if any)

N/A

5. Interpreter's Email Address (if any)

N/A

Interpreter's Certification and Signature

I certify, under penalty of perjury, that I am fluent in English and N/A, and I have interpreted every question on the petition and Instructions and interpreted the petitioner's or authorized signatory's answers to the questions in that language, and the petitioner or authorized signatory informed me that they understood every instruction, question, and answer on the petition.

6.a. Interpreter's Signature

N/A

6.b. Date of Signature (mm/dd/yyyy) N/A

Part 10. Contact Information, Certification, and Signature of the Person Preparing this Petition, if Other Than the Petitioner or Authorized Signatory

Preparer's Full Name

1. Preparer's Family Name (Last Name)

HAVERROTH SILVA

Preparer's Given Name (First Name)

Otavio

2. Preparer's Business or Organization Name

HS Law Corp

Preparer's Contact Information

3. Preparer's Daytime Telephone Number

5102419336

4. Preparer's Mobile Telephone Number (if any)

5102419336

5. Preparer's Email Address (if any)

otavio@legalhs.com

Preparer's Certification and Signature

I certify, under penalty of perjury, that I prepared this petition for the petitioner or authorized signatory at their request and with express consent and that all of the responses and information contained in and submitted with the petition are complete, true, and correct and reflects only information provided by the petitioner or authorized signatory. The petitioner or authorized signatory reviewed the responses and information and informed me that they understand the responses and information in or submitted with the petition.

6. Preparer's Signature



Date of Signature (mm/dd/yyyy) 12/15/2025

Part 11. Additional Information

If you need extra space to provide any additional information within this petition, use the space below. If you need more space than what is provided, you may make copies of this page to complete and file with this petition or attach a separate sheet of paper. Type or print your name and A-Number (if any) at the top of each sheet; indicate the **Page Number**, **Part Number**, and **Item Number** to which your answer refers; and sign and date each sheet.

1. Family Name (Last Name): MARQUES DOS SANTOS

Given Name (First Name): Jackson

Middle Name: N/A

2. IRS EIN ▶ N/A

3.

Page Number	Part Number	Item Number
4	6	3

Overseeing sales activities by attracting new clients, building and maintaining relationships with customers and suppliers, and coordinating commercial efforts to support business growth and long-term partnerships.

4.

Page Number	Part Number	Item Number
N/A	N/A	N/A

N/A

5.

Page Number	Part Number	Item Number
N/A	N/A	N/A

N/A

6.

Page Number	Part Number	Item Number
N/A	N/A	N/A

N/A

7.

Page Number	Part Number	Item Number
N/A	N/A	N/A

N/A

Employment OMB Approval: 1205-0451
Expiration Date: 02/28/2029

Application for Permanent Employment Certification
Form ETA-9089 – Final Determination: Permanent Employment Certification Approval
U.S. Department of Labor

PERMANENT EMPLOYMENT CERTIFICATION APPROVAL

A. U.S. Government Agency Use Only

Pursuant to the provisions of Sections 212(a)(5)(A) of the Immigration and Nationality Act, as amended, the Department hereby certifies that there are not sufficient workers who are able, willing, and qualified, and who will be available at the time of application for a visa and admission into the United States and place needed to fill the job opportunities for which certification is sought, and the permanent employment of the foreign worker will not adversely affect the wages and working conditions of workers in the United States similarly employed.

Therefore, by virtue of the signature below, the Department hereby acknowledges granting certification for the following *Application for Permanent Employment Certification* (Form ETA-9089):

1. DOL Case Number		2. Case Status
3. Employer Legal Business Name		4. Employer FEIN
5. Foreign Worker's Last (family) Name		
6. Foreign Worker's First (given) Name		
7. Foreign Worker's Middle Name(s)		
8. Job Title		
9. SOC Code	10. SOC Occupational Title	
Labor Certification Validity Information		
11. Filing Date	12. Determination Date	13. Expiration Date
14. Department of Labor Office of Foreign Labor Certification *(electronic signature)*		

Pursuant to 20 CFR 656, the aforementioned permanent labor certification is valid only for the job opportunity, the foreign worker, and the area of intended employment specified on the approved Form ETA-9089, including all appendices and any modifications approved by the Department. The aforementioned filing date on this approved *Application for Permanent Employment Certification*, established under 20 CFR 656.17(c), may be used as a priority date by the Department of Homeland Security and the Department of State, as appropriate. This approved *Application for Permanent Employment Certification* will expire if not filed in support of *Immigrant Petition for Alien Workers* (Form I-140) with the Department of Homeland Security by the aforementioned expiration date.

The foreign worker covered by this approved *Application for Permanent Employment Certification* has declared under Section B below, under penalty of perjury, that the foreign worker has read and reviewed every page of Appendix A for this approved Form ETA-9089, takes full responsibility for the accuracy of all information contained therein, and intends to accept permanent employment in the job opportunity specified on the approved Form ETA-9089, including all appendices, offered by the employer if granted a visa or an adjustment of status based on this permanent labor certification.

The employer covered by this approved *Application for Permanent Employment Certification* has declared under Section D below under penalty of perjury that it has read and reviewed every page of this approved Form ETA-9089, including all appendices, and takes full responsibility for the accuracy of all information contained therein and all documentation supporting this approved *Application for Permanent Employment Certification*, including any representations made by the employer's authorized preparer, agent or attorney, as applicable.

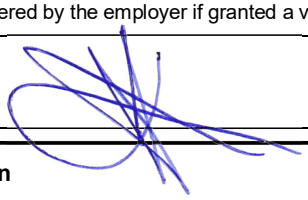
OMB Approval: 1205-0451
Expiration Date:02/28/2029

Application for Permanent Employment Certification
Form ETA-9089 – Final Determination: Permanent Labor Certification Approval
U.S. Department of Labor

B. Foreign Worker Declaration

I declare under penalty of perjury that I have read and reviewed all information contained in Appendix A of this approved Form ETA-9089, and that to the best of my knowledge the information contained therein is true and accurate. *I understand that to knowingly and/or willfully furnish materially false information in the preparation of this form and any supplement thereto or to aid, abet, or counsel another to do so is a federal offense punishable by fines, imprisonment, or both (18 U.S.C. 2, 1001, 1546, 1621).*

I **further declare** that I am the person identified under Section A, Fields 5, 6, and 7 above. I did not participate in any activities involving the interviewing or consideration of U.S. workers and intend to accept permanent employment in the job opportunity specified on this approved Form ETA-9089, including all appendices, offered by the employer if granted a visa or an adjustment of status based on this permanent labor certification.

1. Signature *	2. Date Signed *
	02/24/2026

C. Attorney or Agent Declaration

I declare under penalty of perjury that I am an attorney for the employer, or that I am an employee of, or hired by, the employer listed in Section C of the Form ETA-9089, and that I have been designated by that employer in accordance with 20 CFR 656.10(b) to act on its behalf in connection with this application.

I hereby certify that I have provided to the employer the entire Form ETA-9089, appendices, and all supporting documentation for review and to the best of my knowledge the information contained herein is true and accurate, including the employer's declaration regarding activities that I have undertaken on the employer's behalf in connection with this application. *I understand that to knowingly and/or willfully furnish materially false information in the preparation of this form and any supplement hereto or to aid, abet, or counsel another to do so is a federal offense punishable by fines, imprisonment, or both (18 U.S.C. 2, 1001, 1546, 1621).*

1. Attorney or Agent's Last (family) Name *	2. First (given) Name *	3. Middle Initial §
HAVERROTH SILVA	Otavio	N/A
4. Firm/Business Name §		
HS Law Corp		
5. Signature * 		6. Date Signed * 02/24/2026

D. Employer Declaration

I hereby designate the agent or attorney identified in Section C (if any) of the Form ETA-9089 to represent me for the purpose of labor certification and, by virtue of my signature in Field 5 below, **I take full responsibility** for the accuracy of any representations made by my agent or attorney, and my designated preparer identified in Section C above, on every page of the Form ETA-9089, including all appendices, and documentation supporting this application.

I declare under penalty of perjury that I have read and reviewed this application, including every page of the Form ETA-9089, appendices, and supporting documentation, and that to the best of my knowledge the information contained therein is true and accurate. *I understand that to knowingly and/or willfully furnish materially false information in the preparation of this form and any supplement thereto or to aid, abet, or counsel another to do so is a federal offense punishable by fines, imprisonment, or both (18 U.S.C. 2, 1001, 1546, 1621).*

1. Last (family) Name *	2. First (given) Name *	3. Middle Initial §
4. Title *		
5. Signature *		6. Date Signed *

For Public Burden Statement, see the Instructions for Form ETA-9089.

PERM Case Number: _____ Case Status: _____ Determination Date: _____ Expiration Date: _____

OMB Approval: 1205-0451
Expiration Date:02/28/2029

Application for Permanent Employment Certification
Form ETA-9089 – Appendix A: Foreign Worker Information
U.S. Department of Labor

FOREIGN WORKER INFORMATION

A. *Foreign Worker Contact Information*

1. Foreign Worker's Last (family) Name * MARQUES DOS SANTOS		
2. Foreign Worker's First (given) Name * Jackson		
3. Foreign Worker's Middle Name(s) * N/A		
4. Address 1 *(current)* * Lucio Bento Cardoso, 4		
5. Address 2 *(apartment/suite/floor and number)* **§** N/A		
6. City * Alagoinhas	7. State * N/A	8. Postal Code * 48000057
9. Country * Brazil	10. Province **§** Bahia	
11. Date of Birth *(mm/dd/yyyy)* * 03/31/1986	12. Class of Admission * B1/B2	13. Alien Registration Number (A#) (if applicable) * N/A
14. Country of Birth * Brazil		
15. Country of Citizenship or Nationality * Brazil		

B. *Foreign Worker Education §*

a. *Educational Attainment Information 1*

1. Education: U.S. Diploma/Degree attained relevant to the job opportunity ☐ None ☐ High School/GED ☐ Associate ■ Bachelor's ☐ Master's ☐ Doctorate (PhD) ☐ Other Degree (JD, MD, etc.)	
1a. If "Other Degree" in question 1, specify the diploma/degree attained	
1b. Specify major(s) and/or field(s) of study (may list more than one related major and more than one field) Business Administration	
1c. Name of Institution that issued the degree/diploma Brazilian College of Human Resources	
1d. Name of Country of institution identified in question 1c Brazil	1e. Month/year attained (*mm/yyyy*) 09/2008

b. *Educational Attainment Information 2*

1. Education: U.S. Diploma/Degree attained relevant to the job opportunity ☐ None ☐ High School/GED ☐ Associate ☐ Bachelor's ☐ Master's ☐ Doctorate (PhD) ☐ Other Degree (JD, MD, etc.)	
1a. If "Other Degree" in question 1, specify the diploma/degree attained	
1b. Specify major(s) and/or field(s) of study (may list more than one related major and more than one field)	
1c. Name of Institution that issued the degree/diploma	
1d. Name of Country of Institution identified in question 1c	1e. Month/year attained (*mm/yyyy*)

PERM Case Number: _____ Case Status: _____ Determination Date: _____ Expiration Date: _____

***B. Foreign Worker Education** (continued)*

c. Educational Attainment Information 3

1. Education: U.S. Diploma/Degree attained relevant to the job opportunity ☐ None ☐ High School/GED ☐ Associate ☐ Bachelor's ☐ Master's ☐ Doctorate (PhD) ☐ Other Degree (JD, MD, etc.)	
1a. If "Other Degree" in question 1, specify the diploma/degree attained	
1b. Specify major(s) and/or field(s) of study (may list more than one related major and more than one field)	
1c. Name of Institution that issued the degree/diploma	
1d. Name of Country of Institution identified in question 1c	1e. Month/year attained (*mm/yyyy*)

d. Educational Attainment Information 4

1. Education: U.S. Diploma/Degree attained relevant to the job opportunity ☐ None ☐ High School/GED ☐ Associate's ☐ Bachelor's ☐ Master's ☐ Doctorate (PhD) ☐ Other Degree (JD, MD, etc.)	
1a. If "Other Degree" in question 1, specify the diploma/degree attained	
1b. Specify major(s) and/or field(s) of study (may list more than one related major and more than one field)	
1c. Name of Institution that issued the degree/diploma	
1d. Name of Country of Institution identified in question 1c	1e. Month/year attained (*mm/yyyy*)

e. Educational Attainment Information 5

1. Education: U.S. Diploma/Degree attained relevant to the job opportunity ☐ None ☐ High School/GED ☐ Associate's ☐ Bachelor's ☐ Master's ☐ Doctorate (PhD) ☐ Other Degree (JD, MD, etc.)	
1a. If "Other Degree" in question 1, specify the diploma/degree attained	
1b. Specify major(s) and/or field(s) of study (may list more than one related major and more than one field)	
1c. Name of Institution that issued the degree/diploma	
1d. Name of Country of Institution identified in question 1c	1e. Month/year attained (*mm/yyyy*)

C. Foreign Worker Training Qualifications §

a. Training, Certification(s), and/or License(s) Information 1

1. Name of Institution/School/Training provider Regional Council of Administration of Bahia
1a. Name of training, coursework, experience received Professional license

1b. Training/Certifications/licenses attained (if applicable) Administrator License		
1c. Start date of training (*mm/yyyy*)	1d. End date of training (*mm/yyyy*)	1e. Month/year awarded (*mm/yyyy*) 06/2024

b. Training, Certification(s), and/or License(s) Information 2

1. Name of Institution/School/Training provider		
1a. Name of training, coursework, experience received		
1b. Training/Certifications/Licenses attained (if applicable)		
1c. Start date of training (*mm/yyyy*)	1d. End date of training (*mm/yyyy*)	1e. Month/year awarded (*mm/yyyy*)

c. Training, Certification(s), and/or License(s) Information 3

1. Name of Institution/School/Training provider		
1a. Name of training, coursework, experience received		
1b. Training/certifications/licenses attained (if applicable)		
1c. Start date of training (*mm/yyyy*)	1d. End date of training (*mm/yyyy*)	1e. Month/year awarded (*mm/yyyy*)

D. Foreign Worker Training Qualifications §

a. Skills, Abilities, and Proficiencies 1

1. Name of Employer/Institution/School/Training Provider	
1a. Country	1b. State, Territory, or Province
1c. Description of specific skills, abilities, and/or proficiencies the foreign worker possesses or attained, which help establish whether the foreign worker meets the requirements identified for the job opportunity *(up to 1,500 characters)*	

b. Skills, Abilities, and Proficiencies 2

1. Name of Employer/Institution/School/Training Provider	
1a. Country	1b. State, Territory, or Province
1c. Description of specific skills, abilities, and/or proficiencies the foreign worker possesses or attained, which help establish whether the foreign worker meets the requirements identified for the job opportunity *(up to 1,500 characters)*	

E. Foreign Worker Work Experience §

a. Work Experience 1

1. Employer Name			
Green Gold Export and Imports Ltda			
1a. Address 1			
America do Sul Avenue			
1b. Address 2			
N/A			
1c. City or Town			1d. Postal Code
Alagoinhas			48010618
1e. Country		1f. State, Territory, or Province	
Brazil		Bahia	
1g. Job Title			
Commercial and Administrative Director			
1h. Start Date *(mm/yyyy)*	1i. End Date *(mm/yyyy)*	1j. Present	1k. Hours Worked Per Week
11/2023	Current	■ Yes ☐ No	40

1l. Job Duties: Specify details of the job (work tasks performed, use of tools/equipment, supervision, etc.) (*up to 3,500 characters*)

Led commercial and operational strategies for exporting fresh fruits to Europe, managing cross-functional teams, negotiating international contracts, overseeing the end-to-end export supply chain, and ensuring regulatory compliance, financial control, and sustainable profitability.

For Public Burden Statement, see the Instructions for Form ETA-9089.

OMB Approval: 1205-0451
Expiration Date: 02/28/2029

SUPPLEMENTAL INFORMATION

A. Supplemental Information 1 §

1. Section and Item Number	E	1a. Section Name or Category of Supplemental Information	**Foreign Worker Work Experience**

1b. Supplemental Information. *(up to 1,500 characters)*

Work Experience 2
Employer name: Cardili Citrus
Address of Employer: Ayub Nahes Avenue 14. Santa Adelia - Sao Paulo/Brazil 15954000
Job title: Commercial and Administrative Manager
Start date: 07/2015
End date: 10/2023
Job duties: International Market (Europe):Led fresh fruit export operations in compliance with European regulatory standards, expanded the international client portfolio through direct negotiations with importers, and managed relationships with governmental agencies to secure incentives and support market expansion.
Domestic Market:Managed commercial and administrative operations for domestic sales, planned demand, inventory, and distribution to reduce waste and maintain product freshness, and implemented CRM and ERP systems to monitor sales performance, margins and customer satisfaction.

B. Supplemental Information 2 §

1. Section and Item Number	E	1a. Section Name or Category of Supplemental Information	**Foreign Worker Work Experience**

1b. Supplemental Information. *(up to 1,500 characters)*

Work Experience 3
Employer name: Conex Ar Condicionado
Address of Employer: Guilherme Rehder 27. Sao Paulo - Sao Paulo/Brazil 04358140
Job title: Commercial Director & Partner
Start date: 06/2012
End date: 06/2015
Job duties: Provided strategic leadership to the commercial department, driving client acquisition and retention, developing and executing sales strategies to grow revenue, managing technical and after-sales teams, structuring end-to-end commercial processes, leading bids and major project proposals, analyzing market and competitors to refine pricing and offerings, and building supplier partnerships to optimize costs and delivery.

For Public Burden Statement, see the Instructions for Form ETA-9089.

OMB Approval: 1205-0451
Expiration Date: 02/28/2029

SUPPLEMENTAL INFORMATION

A. Supplemental Information 1 §

1. Section and Item Number	E	1a. Section Name or Category of Supplemental Information	**Foreign Worker Work Experience**

1b. Supplemental Information. *(up to 1,500 characters)*

Work Experience 4
Employer name: Polo Factoring F M Ltda
Address of Employer: Boa Vista 116, 9th Floor. Sao Paulo - Sao Paulo/Brazil 01014000
Job title: Commercial and Financial Assistant
Start date: 11/2009
End date: 02/2012
Job duties: Commercial Activities:Prospected and negotiated factoring agreements with small, mid-sized, and corporate clients, conducted credit and risk assessments to support receivables financing decisions, and structured customized commercial proposals aligned with clients' working capital needs.
Financial Activities:Managed and reconciled financial flows related to factoring operations, monitored settlements and defaults, and prepared management reports for senior leadership, including portfolio profitability analysis and cash flow projections.

B. Supplemental Information 2 §

1. Section and Item Number		1a. Section Name or Category of Supplemental Information	

1b. Supplemental Information. *(up to 1,500 characters)*

For Public Burden Statement, see the Instructions for Form ETA-9089.

YOUSA
Law Firm

EB-2 IMMIGRANT PETITION
WITH REQUEST FOR A NATIONAL INTEREST WAIVER

Petitioner: MARQUES DOS SANTOS, Jackson

HS Law Corp
P.O Box 90487
San Diego - CA - United States

YOUSA
Law Firm

TABLE OF CONTENTS

Petitioner: **MARQUES DOS SANTOS, Jackson**
Type of Petition: **I-140, EB-2 National Interest Waiver**
Classification Sought: **Immigration and Nationality Act 203(b)(2)(B)**

Forms	● Form G-1450 in the amount of $715 towards I-140 form filling fee ● Form G-1450 in the amount of $300 towards Asylum Program Fee ● Form G-1145 ● Form G-28 ● Form I-140 ● ETA-9089
Petition Cover Letter	● Summary of Cover Letter ● Petition Cover Letter ● Exhibit List
Exhibit A RESUME	Petitioner's Resume
Exhibit B ELIGIBILITY CRITERIA	**Advanced Degree Professional:** ● Bachelor's in Business Administration – Diploma and Transcript ● Evaluation of Academics Credential ● Work Records: o Employment Verification Letter from Green Gold Com Imp. e Exp. Ltda o Employment Verification Letter from Cardili Citrus o Employment Verification Letter from Polo Factoring F M Ltda o Records and Contracts from petitioner's company - Conex Ar Condicionado
Exhibit C NATIONAL INTEREST WAIVER	**C.I – First Prong – Substantial Merit and National Importance:** ● Business Plan for JMS Fresh Produce LLC ● Industry Research and Government Initiatives **C.II – Second Prong – Well-Positioned to Advance the Proposed Endeavor:** ● Licenses and Certifications: o Registration within the Federal and Regional Council of Administration (CRA) o Membership within the Brazilian Association of Administration ● Letters of Support: o Sérgio Negrão o Luciano Jacob o Juliano Gerlach o Afonso Castellucci

	• Professional Achievements:
	  ○ Revenue 2024-2025 – Green Gold Com Imp. e Exp. Ltda
	• Proof of High Salary and Financial Feasibility:
	  ○ Accountant Letter
	  ○ Bank Statement Demonstrating Liquidity
	  ○ Commission Payment Declaration from Santa Cruz Citrus Ltda and Tiago Caldas Exportação e Importação Ltda
	  ○ Average Salary Comparisons from Brazilian Industry Data
	  ○ Currency Conversion

Exhibit D **PERSONAL DOCUMENTS**	• Birth Certificate and Corresponding Translation • Passport's Biometrics Page • U.S. Visa Page • Marriage Certificate and Corresponding Translation • Derivative's Birth Certificate and Corresponding Translation • Derivative's Passport's Biometrics Page • Derivative's U.S. Visa Page

YOUSA
Law Firm

Tel: +1 415 425-2508
contato@yousalaw.com

SUMMARY OF COVER LETTER

Petitioner: **Jackson Marques dos Santos ("Mr. Santos")**
Type of Petition: **I-140, EB-2 National Interest Waiver**
Classification Sought: **INA §Act 203(b)(2)(B)**

This petition is submitted on behalf of Mr. Jackson Marques dos Santos, a senior agribusiness executive with specialized expertise in international trade and perishable supply chain management. Mr. Santos holds the foreign equivalent of a U.S. Bachelor's degree in Business Administration and brings 16 years of progressive experience to the field. His expertise includes scaling export operations, implementing international compliance systems, and leading commercial strategy in high-volume agribusiness environments.

He proposes to modernize the fresh-produce supply chain by reducing spoilage and enhancing food safety protocols through the establishment of JMS Fresh Produce LLC, a distribution company based in Miami, Florida. By sourcing from certified Latin American growers and implementing FSMA-aligned compliance, traceability, and cold-chain logistics, the endeavor addresses critical U.S. needs regarding food supply reliability, safety, and the reduction of waste.

Mr. Santos seeks a waiver of the labor certification requirement under *Matter of Dhanasar*, as his qualifications and proposed endeavor satisfy the three-prong test:

1. **Substantial Merit and National Importance:** The endeavor targets nationally significant challenges, including food safety vulnerabilities and high levels of food waste. By utilizing a compliance-driven platform aligned with federal supplier verification requirements, Mr. Santos advances national priorities in preventive food safety, nutrition, and supply chain resilience.

2. **Well-Positioned to Advance the Proposed Endeavor:** With 16 years of leadership in export-focused agribusiness, Mr. Santos is exceptionally qualified to lead this initiative. His record reflects measurable success in managing complex commercial operations and driving revenue growth. Supported by strong academic credentials, professional licensure, and documented financial capacity, he is well-positioned to advance the endeavor independently.

3. **Balancing of Benefits to the United States:** This endeavor will create skilled U.S. jobs and strengthen compliance in imported produce supply chains. As the founder and executive of the vehicle for this effort, JMS Fresh Produce, the labor certification process is impractical for Mr. Santos's entrepreneurial role. Instead of competing for existing positions, he is creating new employment and delivering broad public benefits in food security. A waiver is therefore in the U.S. national interest.

Considering these factors, Mr. Santos meets all qualifications for a National Interest Waiver. We respectfully request a thorough review of the enclosed documentation and request favorable adjudication of this I-140 petition.

Sincerely,



Otavio Haverroth Silva
California Bar # 343486

YOUSA
Law Firm

Tel: +1 415 425-2508
contato@yousalaw.com

March 6, 2026

VIA USPS

USCIS
Attn: I-140 (P.O. Box 660128)
P.O. Box 660128
Dallas, TX 75266-0128

Ref: I-140 Immigrant Visa Self-Petition of Mr. Jackson Marques dos Santos – Request for National Interest Waiver under the EB-2 Classification

Dear Immigration Officer,

Please note that our firm represents Mr. Jackson Marques dos Santos (hereinafter "Mr. Santos") in his I-140 Immigrant Visa Self-Petition under the EB-2 category. We respectfully request his classification as a professional with an advanced degree, and we seek a waiver of the job offer and labor certification requirements pursuant to a National Interest Waiver (NIW), as provided under section 203(b)(2)(B)(ii) of the Immigration and Nationality Act and interpreted by the USCIS in *Matter of Dhanasar*, 26 I&N Dec. 884 (AAO 2016).

Mr. Santos is a seasoned agribusiness executive with 16 years of progressive experience in international trade and supply chain management. He holds the foreign equivalent of a U.S. Bachelor of Business Administration (See Exhibit B). His career trajectory—advancing from commercial assistant to senior executive director—demonstrates a proven record of scaling export-oriented fruit enterprises and implementing rigorous international compliance standards.

Through an U.S. based Company, JMS Fresh Produce LLC, Mr. Santos' proposed endeavor is to improve public health through safer, more reliable access to nutrient-dense produce and support federal food-safety and waste-reduction goals. (See Exhibit C.I)

In accordance with *Matter of Dhanasar*, we will demonstrate that:

- **Substantial Merit & National Importance:** The endeavor improves public health through safer, more reliable access to nutrient-dense produce and supports federal food-safety and waste-reduction goals (Section 2.1).
- **Well-Positioned:** Mr. Santos's academic background, professional licensure, documented success in tripling revenues and managing large-scale export operations, and financial readiness ensure the feasibility of this project (Section 2.2).
- **On Balance:** The entrepreneurial and multi-jurisdictional nature of this endeavor makes the labor certification process impractical, while the projected job creation and economic impact provide benefits that far outweigh the protections of the PERM process (Section 2.3).

The evidence enclosed with this petition will establish, **by a preponderance of the evidence** (see *Matter of Chawathe*), that Mr. Santos' contributions will serve the national interest of the United States and satisfy all elements of the EB-2 NIW standard.

1. THE EB-2 CLASSIFICATION

Mr. Santos qualifies for EB-2 classification as a member of the professions holding an advanced degree based on his foreign baccalaureate degree in business and sixteen years of progressive, post-baccalaureate experience in his specialty, as contemplated by 8 C.F.R. § 204.5(k)(2) and § 204.5(k)(3)(i)(B). Under these provisions, an advanced degree may be shown by a baccalaureate degree (or foreign equivalent) and evidence from current or former employers of at least five years of progressive post-baccalaureate experience in the specialty, which is deemed the equivalent of a U.S. master's degree.

The record shows that Mr. Santos holds a Bachelor of Business Administration from Instituto Hoyler / Faculdade Brasileira de Recursos Humanos (in English "Hoyler Institute/ Brazilian College of Human Resources"), conferred on December 20, 2007, with the diploma issued on September 24, 2008 (See Exhibit B). His complete academic transcript confirms eight semesters of rigorous coursework totaling 3,208 contact hours across core business disciplines such as strategic management, international trade, financial administration, marketing, operations management, and organizational behavior (See Exhibit B).

An Academic Evaluation Letter issued by Carnegie Evaluations LLC, a recognized educational credential evaluation service that follows the AACRAO EDGE database (American Association of Collegiate Registrars and Admissions Officers – The Electronic Database for Global Education) credential recommendations to determine U.S. degree equivalency, **concludes that this degree is the foreign equivalent of a U.S. Bachelor of Business Administration** (See Exhibit B).

These records establish that Mr. Santos is a member of a profession that typically requires at least a bachelor's degree in a specific field, consistent with INA § 101(a)(32) and 8 C.F.R. § 204.5(k)(2).

Building on this educational foundation, the evidence further shows that, since completing his degree in December 2007, Mr. Santos has accumulated 16 years of progressively responsible, post-baccalaureate experience in international trade, agribusiness management, and commercial operations. Employer letters and corporate records document a clear trajectory of advancement in scope, responsibility, and complexity of duties, as contemplated by the regulatory concept of "progressive experience" (See Exhibit B).

Specifically, Mr. Santos's career trajectory demonstrates clear progression:

August 2010 - March 2012: Commercial Assistant, Polo Serviços de Cobrança Ltda. (See Exhibit B)

In this early-career role, Mr. Santos was responsible for prospecting new clients, negotiating factoring contracts, conducting credit and risk analysis, structuring commercial proposals, controlling financial flows, and preparing management reports. This position

required applying his business education to real-world financial services and commercial operations, establishing foundational expertise in credit analysis, contract negotiation, and financial management.

January 2013 - February 2015: Partner and Managing Director, Conex Ar Condicionado Ltda. (See Exhibit B)

Mr. Santos advanced to an ownership and executive management role, serving as partner and managing director of Conex Ar Condicionado Ltda., a small enterprise specializing in the installation and maintenance of central air conditioning, ventilation, and refrigeration systems. As documented in the official JUCESP (São Paulo Commercial Registry) records, he held a capital share of BRL 9,900 and was responsible for the company's strategic direction, operations, and growth. This entrepreneurial experience required significantly greater responsibility, including business planning, financial management, regulatory compliance, client relations, and operational oversight-demonstrating progression from an employee role to executive leadership and ownership.

July 2015 - October 2023: Manager, Cardili Citrus Ltda. (See Exhibit B)

Mr. Santos then transitioned to a managerial role at Cardili Citrus Ltda., a leading agribusiness exporter, where he coordinated the export of fresh fruits to the European Union, expanded the international client portfolio, managed domestic commercial operations, oversaw demand planning and logistics, and implemented CRM and ERP systems. Over more than eight years, he was instrumental in expanding the company's international client base and consolidating its brand in competitive export markets. This role required advanced expertise in international trade regulations, supply chain management, cross-border negotiations, market analysis, and strategic business development-responsibilities that far exceed those of his earlier positions and reflect substantial growth in scope, complexity, and impact.

November 2023 - Present: Commercial and Administrative Director, Green Gold Com. Imp. e Exp. Ltda. (Green Gold Citrus) (See Exhibit B)

Most recently, Mr. Santos was promoted to Commercial and Administrative Director at Green Gold Citrus, a prominent agribusiness exporter. In this senior executive role, he defines commercial and operational strategies, negotiates with international clients in the European market, leads financial planning and budget management, supervises the entire export chain from production to delivery, and develops marketing strategies and government relations initiatives. This position represents the pinnacle of his progressive experience, requiring strategic vision, executive decision-making, international market expertise, and leadership across multiple functional areas including finance, operations, marketing, and regulatory affairs.

Viewed together, these positions demonstrate a consistent and well-documented progression from an entry-level commercial role to business owner and managing director, to export manager, and ultimately to senior executive director in international agribusiness trade. Each stage involves greater autonomy, broader scope of responsibilities, more complex decision-making, and increased impact on the organizations he serves. The totality of this post-

baccalaureate experience—spanning sixteen years in business administration, international trade, and agribusiness management—comfortably exceeds the five-year minimum of progressive, post-degree experience required under 8 C.F.R. § 204.5(k)(3)(i)(B).

Accordingly, the record establishes that Mr. Santos is a member of a qualifying profession and that his combination of a foreign baccalaureate degree equivalent to a U.S. bachelor's in Business Administration and more than five years of progressive, post-baccalaureate experience in his specialty satisfies the regulatory definition of an advanced degree professional under INA § 203(b)(2) and 8 C.F.R. § 204.5(k). This threshold EB-2 eligibility is therefore met before the National Interest Waiver analysis is undertaken.

2. NATIONAL INTEREST WAIVER

Under INA § 203(b)(2)(B)(i), USCIS may, in its discretion, waive the job offer and labor certification requirements when it is in the national interest. The implementing regulation at 8 C.F.R. § 204.5(k)(4)(ii) recognizes that these requirements may be waived in appropriate cases. In *Matter of Dhanasar*, 26 I&N Dec. 884 (AAO 2016), the Administrative Appeals Office set out a three-prong framework to evaluate such requests.

The evidence in this record—including Mr. Santos's detailed business plan for JMS Fresh Produce LLC ("JMS Fresh Produce") and accompanying documentary exhibits—satisfies each prong under the preponderance standard articulated in *Matter of Chawathe*, 25 I&N Dec. 369 (AAO 2010).

A detailed description of the proposed endeavor

As per the attached Business Plan (See Exhibit C.I), Mr. Santos' proposed endeavor is to establish and serve as Founder and Chief Executive of JMS Fresh Produce LLC. Headquartered in Miami, Florida, the enterprise is classified under NAICS 424480 – Fresh Fruit and Vegetable Merchant Wholesalers, a role requiring advanced expertise in business administration, international trade, and supply chain management (See Business Plan, section 1.3).

The proposed endeavor focuses on the nationwide scaling of a compliance-driven importer and distributor of Latin American fresh produce (initially mangoes, limes, grapes, and ginger) to U.S. supermarkets and food service organizations (See Business Plan, sections 1.1–1.2 and 2.1.6) **and aims to contribute to the U.S. public health through safer, more reliable access to nutrient-dense produce and support the federal food-safety and waste-reduction goals**.

Operating from Miami, JMS Fresh Produce will be built on four pillars: direct sourcing from certified growers, regulatory food safety compliance, cold-chain logistics, and professional B2B sales management (See Business Plan, sections 1.2, 2.1.6, and 2.3.2). Mr. Santos will architect and coordinate these interlocking functions as the company's **chief executive** (See Business Plan, sections 1.5 and 3.4).

Organizationally, the company will expand from a team of five in Year 1 to 18 specialized employees by Year 5 (See Business Plan, sections 3.1–3.5). Mr. Santos is

responsible for designing this structure, supervising key personnel, and setting performance indicators to support national distribution (See Business Plan, sections 3.4 and 4.0). Operationally, he will leverage his relationships in Brazil, Mexico, Peru, and Chile to contract with GlobalG.A.P-certified and FDA-registered farms, overseeing supplier onboarding and ensuring shipments meet U.S. seasonal demand without delays (See Business Plan, sections 1.2, 2.1.5, and 2.3.1).

The import function utilizes multimodal refrigerated logistics through the Miami International Airport and the PortMiami (See Business Plan, sections 1.3 and 2.2.4). Under Mr. Santos's direction, the company employs an asset-light model, contracting with specialized freight forwarders, customs brokers, and 3PL refrigerated warehouses to focus capital on inventory and compliance systems (See Business Plan, sections 1.1, 1.3, and 2.3.2). Once cleared, Mr. Santos will oversee warehouse management and inventory systems to track lots by origin and supplier, ensuring efficient fulfillment to supermarket chains and regional wholesalers from hubs in Florida, Texas, New Jersey, and Chicago (See Business Plan, sections 1.1, 1.3, 2.2.4, and 4.2).

A central component of the endeavor is the management of a formal food safety program aligned with the Food Safety Modernization Act (FSMA). Mr. Santos will maintain the company's Perishable Agricultural Commodities Act (PACA) license, ensure Food and Drugs Administration (FDA) registrations, and implement Foreign Supplier Verification Program (FSVP) procedures (See Business Plan, sections 1.3, 2.1.3, and 2.1.7). This includes establishing supplier approval criteria, conducting audits, and maintaining lot-level traceability (See Business Plan, sections 1.2 and 2.3.2). The commercial strategy, led by Mr. Santos, segments the market into national retail, regional distributors, and institutional food service, utilizing pricing structures and procurement calendars that align grower production with U.S. demand (See Business Plan, sections 1.4, 2.2.2, and 4.3).

To sustain this model, Mr. Santos will oversee the deployment of Enterprise Resource Planning (ERP) and inventory platforms for order processing and compliance recordkeeping (See Business Plan, sections 2.3.2 and 5.1). He will establish standard operating procedures and Key Performance Indicators (KPIs)—such as clearance dwell time and shrink percentage—to ensure operational excellence (See Business Plan, sections 3.4 and 6.2). As the organization matures, a specialized management team in finance, HR, and supply chain analytics will report to Mr. Santos to ensure integrated, data-driven operations (See Business Plan, sections 3.3–3.5).

In sum, Mr. Santos's occupation is that of a professional executive leading a Miami-anchored, multi-hub distribution platform for Latin American produce (See Business Plan, sections 1 and 2.2.4).

2.1 1ST PRONG: *The Proposed Endeavor has Substantial Merit and National Importance*

2.1.1 EVIDENCE OF ENDEAVOR'S SUBSTANTIAL MERIT:

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Under the first prong of *Dhanasar*, the petitioner must show that the proposed endeavor has substantial merit. The USCIS Policy Manual and the *Dhanasar* framework recognize that merit may be found in areas such as business, entrepreneurship, science, technology, health, culture, or education. The USCIS Policy Manual confirms that substantial merit does not depend solely on immediate or easily quantifiable economic impact; rather, it may be established by showing that the endeavor is directed to important goals and offers real, non-speculative benefits within its fields.

Mr. Santos's proposed endeavor **to contribute to the U.S. public health through safer, more reliable access to nutrient-dense produce and support the federal food-safety and waste-reduction goals**, through founding and expanding JMS Fresh Produce LLC, has substantial merit in two interrelated domains:

1. **Business and entrepreneurship**, through the creation and planned growth of a professionally managed, compliance-driven fresh-produce distribution enterprise in a critical segment of the U.S. economy; and
2. **Health**, through operational improvements in how perishable, nutrient-dense foods are handled, preserved, and delivered to end users.

(A) Substantial Merit in Business and Entrepreneurship

From a business and entrepreneurial perspective, JMS Fresh Produce is structured as a scalable, growth-oriented enterprise in the fresh produce supply chain, a sector that is central to U.S. food markets.

As detailed in the Business Plan (See Exhibit C.I), the company is launching with an initial investment of approximately $100,000 to cover startup costs in logistics, professional services, and operational setup (See Exhibit C.I, Business Plan, sections 1.3, 6.1). Within the U.S. Fruit & Vegetable Wholesaling industry—a sector valued at approximately $109 billion as of 2025, per IBISWorld[1]—the plan presents a robust financial trajectory associated with expansion from Miami into additional strategic U.S. distribution hubs (See Exhibit C.I, Business Plan, sections 4.3–4.4). That trajectory is supported by a phased geographic expansion strategy tied to volume growth, capacity increases, and progressive market penetration in multiple U.S. regions (See Exhibit C.I, Business Plan, sections 2.2.4, 4.3–4.4).

These projections are grounded in realistic and clearly articulated assumptions. The plan identifies a defined set of target customers, including national retailers, regional wholesalers, and food service operators. It leverages existing and prospective supplier relationships in Latin America, where Mr. Santos already has extensive export management experience (See Exhibit C.II, Letters of Support). It also sequences the opening of new hubs and the hiring of additional staff based on documented throughput and revenue milestones, rather than speculative timing, ensuring that growth in infrastructure and personnel is aligned with actual performance indicators (See Exhibit C.I, Business Plan, sections 3.1–3.5, 6.5).

[1] https://www.ibisworld.com/united-states/industry/fruit-vegetable-wholesaling/978/

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The record further demonstrates that JMS Fresh Produce is not a casual trading intermediary, but an enterprise designed around disciplined, process-driven operations. The Business Plan and supporting evidence describe structured quality control and standard operating procedures for receiving, grading, and handling highly perishable products (See Exhibit C.I, Business Plan, sections 3.2–3.3). They also set forth integrated logistics and inventory management practices aimed at reducing dwell times, avoiding bottlenecks, and maintaining products within optimal temperature and handling conditions throughout the supply chain (See Exhibit C.I, Business Plan, sections 2.2.4, 2.3.2, 4.2).

In addition, JMS Fresh Produce is organized as a compliance-oriented operation. Its documentation and planned practices are aligned with key U.S. food safety and import regimes, including the Food Safety Modernization Act (FSMA), the Foreign Supplier Verification Programs (FSVP), and applicable FDA and USDA requirements (See Exhibit C.I, Business Plan, sections 1.3, 2.1.3, 2.1.7). The business model further incorporates data-driven management, using key performance indicators such as shrink rates, on-time delivery, claim rates, and throughput by hub to drive continuous improvement and predictable service levels (See Exhibit C.I, Business Plan, sections 3.4, 5.2–5.4, 6.2).

By imposing this level of discipline and professionalism on a traditionally fragmented segment of the supply chain, JMS Fresh Produce provides concrete, non-speculative value to U.S. buyers. The company's approach reduces uncertainty and variability in supply, lowers losses associated with inconsistent quality and mishandling, and offers a more reliable, compliant channel for importing perishable products at scale. This type of process innovation, risk reduction, and operational excellence constitute significant business sector merit under 8 C.F.R. § 204.5(k), even when the core offering is an improved service within an existing industry.

The Business Plan further projects the creation of 18 full-time positions for U.S. workers by Year 5, including roles in sales management, account management, operations and logistics coordination, quality control and food safety, finance and compliance, marketing and digital strategy, supply chain analysis, and human resources and training (See Exhibit C.I, Business Plan, sections 3.1, 3.3–3.5, 6.5). This hiring plan directly supports the broader U.S. produce and floral industry, which currently accounts for over 2.2 million total jobs and $120.1 billion in labor income, according to the International Fresh Produce Association[2]. While job creation also bears on the "national importance" prong, these figures already support the conclusion that JMS Fresh Produce is a serious, structured, and impactful venture rather than a marginal or speculative undertaking.

Finally, the evidence shows that these business projections rest on Mr. Santos's established professional record. He brings more than fifteen years of progressively responsible experience in managing logistics-intensive, export-oriented enterprises in Brazil, including oversight of capital expansion, export operations, regulatory compliance, and commercial

[2] https://www.freshproduce.com/resources/advocacy/us-economic-impact-fresh-produce-and-floral-industries/

strategy (See Exhibit B, Work Records; See Exhibit C.II, Letters of Support). Evaluated under the preponderance of the evidence standard, this history demonstrates that the JMS Fresh Produce business plan is grounded not in conjecture, but in documented, field-tested experience in substantially similar enterprises.

(B) Substantial Merit in Health

Independently of its commercial success, the endeavor has substantial merit in health though food security, an area specifically recognized as qualifying domains under the NIW statute and implementing regulations.

JMS Fresh Produce is designed to improve how fresh, nutrient-dense foods are handled, preserved, and delivered through three health-oriented features:

1. **Improved product integrity and usability.** By implementing rigorous temperature-controlled logistics and rapid inventory turnover, the endeavor ensures that nutrient-dense produce reaches consumers with its sensory and nutritional quality intact, directly combating the degradation that often occurs in less sophisticated supply chains (See Exhibit C.I, Business Plan, sections 2.1.5, 2.3.2).
2. **Safer handling and greater transparency in the supply chain.** Contamination of fresh produce can occur at multiple points—from harvest through packing, transshipment, and distribution[3]. JMS Fresh Produce emphasizes traceability, supplier vetting, and documented handling protocols, including lot-level coding and documentation that associates each lot with its origin, supplier, and handling pathway (See Exhibit C.I, Business Plan, sections 1.2, 1.3, 2.1.3, 2.3.2). These features facilitate faster identification, isolation, and recall of problematic lots, and reduce the likelihood that contaminated or degraded products reach end users.
3. **More efficient use of nutritious resources.** By applying data-driven inventory management to reduce "shrinkage" (spoilage), the endeavor ensures that a higher percentage of harvested agricultural resources are utilized for human nutrition rather than being discarded as waste[4] (See Exhibit C.I, Business Plan, sections 4.2, 6.2).

Taken together, the entrepreneurial sophistication of JMS Fresh Produce's business model and its health-oriented design demonstrate that Mr. Santos's proposed endeavor has substantial merit in both business and entrepreneurship, and in the field of health through food security, consistent with the first-prong analysis in Matter of Dhanasar and the standards set forth at 8 C.F.R. § 204.5(k). The conclusion that the endeavor has substantial merit does not depend on speculative or extraordinary future outcomes; it follows from the inherent value of strengthening a critical perishable-food supply chain through improved quality control, safer handling, and more efficient use of nutritious products.

[3] https://pmc.ncbi.nlm.nih.gov/articles/PMC4265071/
[4] https://www.sciencedirect.com/science/article/pii/S2666154325002662

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2.1.2 EVIDENCE OF ENDEAVOR'S NATIONAL IMPORTANCE

In addition to the substantial merit, the first *Dhanasar* prong requires that the proposed endeavor has national importance. USCIS examines national importance by focusing on the nature and potential prospective impact of the endeavor, including whether it has national or global implications within a particular field, significant potential to employ U.S. workers, substantial positive economic effects, or a broad potential to enhance societal welfare.

Here, Mr. Santos proposed endeavor address nationwide, systemic challenges at the intersection of agribusiness and public health: low fruit and vegetable consumption, food-safety vulnerabilities in fresh produce, and high levels of food loss and waste. The endeavor also aligns closely with formal U.S. government priorities in preventive food safety, nutrition, food-loss reduction, and supply-chain resilience.

(A) National or even global implications within a particular field:

Mr. Santos's proposed endeavor reduces spoilage, improves safety and traceability, and increases reliable access to fruits and vegetables, thereby establishing a Miami-based distribution platform for Latin American produce through JMS Fresh Produce LLC to implement FSMA-aligned food safety protocols and multi-hub cold-chain logistics. The specific problems it targets have national scope:

Insufficient fruit and vegetable intake

The U.S. Dietary Guidelines recommend that adults consume 1.5–2 cup-equivalents of fruits and 2–3 cup-equivalents of vegetables daily yet analyses of Behavioral Risk Factor Surveillance System (BRFSS) data by the Centers for Disease Control and Prevention (CDC) show that only about one in ten U.S. adults meets these recommendations for fruits and vegetables. These low intake levels are associated with increased risks of cardiovascular disease, type 2 diabetes, and certain cancers—leading contributors to morbidity and mortality in the United States[5]. Because diet-related chronic disease is a national public-health crisis, any endeavor that systematically improves the availability, reliability, and appeal of safe, high-quality produce has implications well beyond a single locality; it contributes to a nationwide effort to improve health-promoting dietary patterns.

Food-safety risks in fresh produce

CDC estimates that foodborne illnesses cause millions of illnesses, tens of thousands of hospitalizations, and thousands of deaths annually in the United States[6]. Fresh fruits and vegetables are regularly implicated in multistate outbreaks, with contamination possible at farm, packinghouse, transit, or distribution stages. Federal preventive food-safety initiatives, including produce safety standards, foreign-supplier oversight, and enhanced traceability for high-risk foods, specifically target these vulnerabilities. By building JMS Fresh Produce around

[5] https://www.cdc.gov/mmwr/volumes/71/wr/mm7101a1.htm
[6] https://www.cdc.gov/food-safety/php/data-research/foodborne-illness-burden/index.html

supplier vetting, traceability, temperature-controlled logistics, and preventive controls, Mr. Santos's endeavor offers a field-level operational model for reducing nationally significant food-safety risks in imported produce.

Food loss and waste in perishable supply chains

The USDA estimates that 30–40% of the U.S. food supply is wasted, a loss valued at approximately $161 billion annually[7]. JMS Fresh Produce addresses this national crisis by modernizing the "middle-mile" of the supply chain, where the most significant perishable losses occur due to logistical inefficiencies[8]. JMS Fresh Produce's focus on efficient post-harvest handling, cold-chain integrity, and optimized logistics directly targets these loss points, increasing the amount of edible, high-quality produce that reaches U.S. consumers. Because food loss and waste are treated as national and global sustainability and health issues, an operational model that demonstrably reduces such waste has implications for best practices across the field, not just for one company.

Cross-border trade practices and global standards

The international nature of fresh-produce trade means that innovations in cross-border sourcing and distribution that meet high U.S. safety and traceability standards can influence practices beyond U.S. borders. JMS Fresh Produce integrates Latin American sourcing with U.S. expectations for quality, safety, and traceability. By designing processes that simultaneously satisfy U.S. regulatory frameworks and maintain efficiency and product integrity across borders, Mr. Santos's endeavor serves as a model for resilient, health-oriented global produce trade with relevance for foreign producers, logistics providers, and regulators connected to U.S. markets.

Because the underlying health-related challenges—low fruit and vegetable intake, vulnerability to foodborne illness, and high levels of food waste—are uniform nationwide, a system that proves effective in one region can be replicated across multiple hubs and markets. JMS Fresh Produce's model of traceable, quality-controlled, health-oriented produce distribution is designed from inception to be scalable and adaptable to various U.S. hubs and customer segments (retailers, foodservice, institutions). This field-wide replicability supports the conclusion that the endeavor has national and even global implications within agribusiness and food-systems fields, not merely client-oriented commercial effects.

(B) Potential to Employ U.S. Workers

Mr. Santos's endeavor has significant, documented potential to employ U.S. workers, which is deemed an important factor in the national importance analysis. JMS Fresh Produce's business model—importing, handling, and distributing fresh produce to U.S. buyers—requires a permanent, expanding workforce across sales, operations, logistics, compliance, and support

[7] https://www.usda.gov/about-food/food-safety/food-loss-and-waste
[8] https://www.usda.gov/about-usda/news/press-releases/2022/06/01/usda-announces-framework-shoring-food-supply-chain-and-transforming-food-system-be-fairer-more#:~:text=Building%20more%20distributed%2C%20local%20capacity,a%20more%20resilient%20food%20system.

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functions.

The company's personnel plan anticipates growing from 5 U.S. employees in Year 1 to 18 U.S. employees by Year 5 with positions including Sales Manager, Sales Representatives, Client Success/Account Manager, Senior Sales Executives, Operations & Logistics Coordinator, Operations Supervisor, Administrative/Marketing Assistant, Marketing & Digital Specialist, Quality Control & Food Safety Specialist, Finance & Compliance Officer, Supply Chain Analyst, and HR & Training Manager (See Exhibit C.I, Business Plan, section 3.4).

According to the business plan, these hires will increase total staff from 5 employees in Year 1 to 18 by Year 5, with an annual payroll of approximately $1.17 million by Year 5 and a cumulative payroll of roughly $3.57 million in the first five years (See Exhibit C.I, Business Plan, sections 3.1, 3.3–3.5, 6.5).

Collectively, these professionals are essential to achieving the business goal of building a scalable, compliant, and reliable fresh-produce distribution platform. The sales team drives sustained revenue growth and market penetration by acquiring and retaining supermarket, wholesaler, and foodservice accounts. Operational roles ensure that imports, warehousing, and cold-chain logistics run efficiently and predictably, minimizing spoilage and delivery failures. Compliance-oriented positions safeguard adherence to FSMA, USDA, FDA, and customs requirements, protecting both clients and consumers. Finally, support functions underpin professional branding, internal capacity-building, and workforce stability in a sector known for high turnover. In combination, this team enables JMS Fresh Produce to execute its health-oriented, quality-focused business model at scale, rather than as a small, ad hoc trading operation.

These are permanent operating roles, not temporary construction or project-based jobs, and they are concentrated in skilled, higher-value functions such as sales, client management, logistics supervision, quality control and food safety, finance and compliance, marketing, HR, and data-driven supply-chain analysis.

The direct employment created by JMS Fresh Produce is augmented by indirect and induced employment in adjacent U.S. industries. To execute its business model, the company must contract with:

- Domestic trucking and transportation companies;
- Warehousing and cold-storage facilities (and their maintenance/technical support);
- Customs brokers and port-service providers;
- Packaging and equipment suppliers; and
- Professional service firms (legal, accounting, IT, training).

As JMS Fresh Produce scales its volumes and expands hubs to Texas, New Jersey, and the Chicago area, these contracts will support additional U.S. jobs in transportation, cold-chain infrastructure, port logistics, equipment supply, and local services that benefit from the company's expenditures. In this way, every increment of JMS's growth has a multiplier effect beyond the firm's own payroll.

In addition to these direct jobs, JMS Fresh Produce will support indirect and induced employment in related U.S. industries. To quantify this impact, a conservative employment multiplier of 2.0 has been applied to the company's hiring projections. While industry-specific data for the Wholesale Trade sector often suggests higher ripple effects JMS Fresh Produce LLC adopts a more restrained 1:1 ratio. Under this conservative framework, the 18 direct full-time positions created by the company within its first five years are projected to support an additional 18 indirect and induced jobs across the United States, totaling 36 jobs supported by the endeavor's fifth year of operation. (See Exhibit C.I, Business Plan, section 3.4). These indirect and induced positions are distributed across transportation and warehousing, packaging and equipment supply, administrative support, professional services, and local businesses that benefit from employee and vendor spending.

Accordingly, JMS Fresh Produce's documented hiring trajectory, together with its reliance on U.S. infrastructure and services, shows that the proposed endeavor has clear, non-speculative potential to employ and support U.S. workers at multiple levels of the domestic economy, a factor that strongly reinforces its national importance under *Dhanasar*.

(C) Substantial Positive Economic Effects (Including in Depressed Areas)

The endeavor is also positioned to generate broader economic benefits beyond direct employment, including in regions affected by economic distress and food insecurity.

The financial model projects revenues growing from approximately $1.2 million in Year 1 to $15.5 million in Year 5, with a cumulative five-year economic contribution—including direct payroll and related local spending—estimated at roughly $9.6 million (See Exhibit C.I, Business Plan, sections 4.3–4.4, 6.5). These revenues and payroll will circulate through local and regional economies via wages, supplier contracts, facility leases, and tax payments.

Beyond its direct $15.5 million revenue target, the endeavor contributes to a wholesale trade sector that adds $339.4 billion to the U.S. national output.[9]

JMS Fresh Produce will operate through major logistics hubs such as Miami, Texas, New Jersey, and the Chicago area, which serve or are adjacent to communities with elevated poverty and food insecurity rates. For example, recent data show that about 12.8% of U.S. households were food insecure in 2022, with higher rates among low-income and minority communities[10]. Metropolitan areas like Miami, Chicago, and parts of Texas and New Jersey also report census tracts that are both low-income and low-access for healthy foods (often termed "food deserts")[11].

By strengthening produce supply chains in these hubs, JMS Fresh Produce can:

[9] https://www.foodingredientsfirst.com/news/us-fresh-produce-sector-sees-return-to-pre-pandemic-operational-capacities-but-still-comes-up-short.html
[10] https://ers.usda.gov/sites/default/files/_laserfiche/publications/107703/ERR-325.pdf
[11] https://community-wealth.org/content/usda-food-access-research-atlas#:~:text=The%20United%20States%20Department%20of,%2Datlas.aspx%23.UvEQPfldVTw

- **Improve supply reliability and reduce costs.**

Efficient, lower-loss distribution reduces shrinkage and logistics costs, permitting more competitive pricing and more stable supply for downstream retailers and wholesalers. Reducing these post-harvest and distribution losses, which constitute a significant portion of national food waste, can moderate price pressure on perishable foods and increase effective availability.

- **Support local and regional employment and vendor ecosystems.**

The company's projected 18 direct employees by Year 5 will rely on a wider web of U.S. service providers in trucking, cold-storage, port logistics, maintenance, packaging, and professional services. According to BEA, every $1 million in wholesale trade payroll supports 7–9 additional jobs across the economy. (See Exhibit C.I, Business Plan, sections 3.1–3.5, 4.2, 6.5)

- **Channel investment into or near distressed areas.**

Many port-adjacent, warehouse, and industrial districts near Miami, Houston and other Texas ports, northern New Jersey, and the greater Chicago region include economically distressed census tracts with elevated unemployment and lower median incomes. Leasing warehouse capacity, contracting local services, and increasing cargo throughput in these areas contribute to local tax bases and business activity.

USCIS has recognized that an endeavor "may have national importance" when it has "significant potential to employ U.S. workers" or offers "other substantial positive economic effects, particularly in an economically depressed area." The documented revenue trajectory, payroll, and geographically targeted operations of JMS Fresh Produce meet this standard by demonstrating concrete, non-speculative economic contributions distributed across several key U.S. regions, including communities that particularly benefit from new investment and stable food supply.

(D) Enhancement of Societal Welfare

Mr. Santos's endeavor directly advances the welfare of the United States by improving access to safe, high-quality fruits and vegetables through more efficient, reliable supply-chain operations.

The endeavor directly supports the "National Strategy on Hunger, Nutrition, and Health," which identifies the lack of affordable, high-quality produce as a primary driver of the $1.1 trillion in annual U.S. healthcare costs related to diet-related chronic diseases. Low intake of fruits and vegetables is associated with increased risks of cardiovascular disease, type 2 diabetes, and certain cancers—conditions that account for a large share of U.S. morbidity,

mortality, and healthcare spending[12].

At the same time, fresh produce is a frequent vehicle in multistate foodborne outbreaks. CDC estimates that each year roughly 48 million people get sick, 128,000 are hospitalized, and 3,000 die from foodborne diseases in the United States, with fruits and vegetables regularly implicated in major outbreaks[13]. Strengthening preventive controls, supplier verification, and traceability in produce supply chains therefore has direct implications for public health.

Within this context, JMS Fresh Produce enhances societal welfare by:

1. **Supporting healthier dietary patterns.**

By increasing the reliability and geographic reach of fresh-produce distribution—including to regions with high food insecurity and limited healthy options—the endeavor makes fruits and vegetables easier for retailers, restaurants, schools, and institutions to source consistently. Research shows that better availability and access to fruits and vegetables is associated with improved diet quality and higher produce consumption[14].

2. **Reducing foodborne illness risks associated with fresh produce.**

The company's emphasis on FSMA-compliant practices, FSVP implementation, and robust traceability directly supports federal prevention efforts. Enhanced supplier vetting, temperature control, and lot-level recordkeeping help reduce contamination risk and allow faster, more targeted recalls, thereby lowering the incidence and severity of produce-related foodborne illnesses.

3. **Decreasing food loss and waste in a high-impact category.**

As discussed in Section 2.1.2(A), fruits and vegetables have among the highest loss rates in the food supply chain. JMS Fresh Produce's optimized cold-chain and inventory management practices help ensure that a higher share of harvested produce is consumed rather than discarded, enhancing both food security and environmental stewardship.

4. **Supporting vulnerable and underserved populations.**

Because JMS Fresh Produce's hubs interface with distribution channels that serve low-income and minority communities—groups that experience both higher diet-related disease burdens and greater food insecurity—improvements in safety, quality, and continuity

[12] https://www.sciencedirect.com/science/article/pii/S0002916524008037
[13] https://archive.cdc.gov/www_cdc_gov/ncezid/what-we-do/our-topics/foodborne-disease.html#:~:text=CDC%20estimates%20that%20each%20year,are%20many%20different%20foodborne%20infections.&text=According%20to%20CDC%20estimates%2C%20the,%2C%20Campylobacter%2C%20and%20Staphylococcus%20aureus.&text=Raw%20foods%20of%20animal%20origin,or%20from%20a%20foodhandler's%20hands.
[14] https://ers.usda.gov/sites/default/files/_laserfiche/publications/42711/12700_ap036a_1_.pdf

of supply help address entrenched health disparities.

By increasing access to safe, appealing produce; strengthening preventive food-safety systems; and reducing waste of nutrient-dense foods, the proposed endeavor promotes the statutory objective that EB-2 NIW work "substantially benefit the national economy, cultural or educational interests, or welfare of the United States" (INA § 203(b)(2)(A)) in a manner that is concrete, evidence-based, and aligned with federal health and nutrition priorities.

(E) Alignment With U.S. Government-Identified National Priorities and Initiatives

Federal law and policy have identified several national priorities that directly intersect with Mr. Santos's proposed endeavor. While these priorities are articulated in statutes, regulations, and executive-branch strategies, Mr. Santos's operation operationalizes them at the firm and supply-chain level.

1. **Preventive Food Safety and Traceability for Imported Foods (FSMA, FSVP, Food Traceability Rule).**

The Food Safety Modernization Act (FSMA), Pub. L. 111-353, directs FDA to shift food safety from a reactive to a preventive posture, including for imported foods[15]. The FSVP regulation at 21 C.F.R. part 1, subpart L requires importers to verify that foreign suppliers meet U.S. safety standards[16], and the FSMA food-traceability rule requires enhanced recordkeeping for high-risk foods, including many fresh fruits and vegetables[17]. JMS Fresh Produce's business model—centered on supplier vetting, preventive controls, sanitary cold-chain logistics, and robust traceability/recordkeeping—is designed to implement these requirements in daily operations. Mr. Santos's endeavor therefore advances a named federal objective: preventing foodborne illness in globally sourced foods, especially high-risk produce.

2. **Increasing Fruit and Vegetable Intake and Improving Nutrition (Dietary Guidelines).**

The Dietary Guidelines for Americans (issued by USDA and HHS) emphasize increasing fruit and vegetable consumption as a core strategy to reduce diet-related disease and end hunger by 2030[18]. By expanding the quantity, reliability, and safety of imported fruits and vegetables, and by maintaining quality and shelf life through advanced cold-chain practices, JMS Fresh Produce supports these national nutrition goals, making it easier for U.S. households and institutions to access and trust healthy produce.

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[15] https://www.federalregister.gov/documents/2015/09/22/2015-24027/the-food-and-drug-administration-food-safety-modernization-act-final-rules-to-establish-requirements
[16] https://www.fda.gov/food/food-safety-modernization-act-fsma/fsma-final-rule-foreign-supplier-verification-programs-fsvp-importers-food-humans-and-animals
[17] https://www.fda.gov/food/food-safety-modernization-act-fsma/fsma-final-rule-requirements-additional-traceability-records-certain-foods
[18] https://www.dietaryguidelines.gov/sites/default/files/2020-12/DGA_2020-2025_ExecutiveSummary_English.pdf

3. **Reducing Food Loss and Waste and Its Environmental Impacts (2030 National Reduction Goal).**

USDA and EPA have jointly adopted a national goal of cutting food loss and waste by 50% by 2030[19][20]. Because fruits and vegetables are major contributors to post-harvest and distribution losses, improvements in cold-chain management, storage, and logistics have outsized impact. JMS Fresh Produce's focus on reducing spoilage and pre-retail discard—through optimized routing, temperature control, and process discipline—directly supports this federal goal and related strategies to prevent waste upstream in the supply chain.

4. **Strengthening Resilient and Diverse Food and Agriculture Supply Chains (Executive-Branch Supply-Chain Directives).**

Recent executive directives on "America's supply chains" have designated agricultural and food supply chains as critical to national and economic security, calling for diversification, modernization, and increased resilience[21]. Mr. Santos's plan to develop a diversified, multi-country sourcing base in Latin America and a multi-hub U.S. distribution network—underpinned by strong compliance, documentation, and quality systems—is exactly the type of private-sector implementation these directives contemplate. His endeavor improves the reliability and flexibility of fresh-produce flows into the United States, contributing to a more resilient and diversified food system.

Taken together, these federal initiatives define clear national priorities in preventive food safety, increased access to fruits and vegetables, reduced food loss and waste, and resilient agri-food supply chains. Mr. Santos's proposed import and distribution endeavor is structured to operationalize these priorities in a high-risk, nationally significant sector—fresh fruits and vegetables. That congruence between the endeavor's core activities and explicitly articulated federal goals is strong probative evidence that the endeavor itself is of national importance under the first Dhanasar prong.

1st Prong Final Considerations

Hence, considering the evidence as a whole and applying the preponderance of the evidence standard articulated in *Matter of Chawathe*, the record shows that Mr. Santos's proposed endeavor to modernize the fresh-produce supply chain by reducing spoilage and enhancing food safety protocols, through the company JMS Fresh Produce LLC, has substantial merit in business/entrepreneurship and in health/food security, and is of national importance within the fields of agribusiness, supply-chain management, and public health.

The business plan (See Exhibit C.I), corroborated by third-party records and expert

[19] https://www.usda.gov/sites/default/files/documents/NATIONAL-STRATEGY-FOR-REDUCING-FOOD-LOSS-AND-WASTE-AND-RECYCLING-ORGANICS.pdf
[20] https://www.epa.gov/sustainable-management-food/united-states-2030-food-loss-and-waste-reduction-goal
[21] https://www.usda.gov/about-usda/news/press-releases/2025/07/08/farm-security-national-security-trump-administration-takes-bold-action-elevate-american-agriculture#:~:text=Put%20America%20First%20in%20Every,will%20be%20treated%20as%20such.

letters (See Exhibit C.I and C.II), demonstrates a credible, structured enterprise with projected multimillion-dollar revenues, significant U.S. job creation, and broad economic spillovers across multiple hubs serving or adjacent to economically distressed communities. Independently, the endeavor's focus on preventive food safety, increased access to fruits and vegetables, and reduction of food loss and waste directly advances identified federal priorities in nutrition, public health, and supply-chain resilience.

Under the evidentiary framework described in *Chawathe*, each category of evidence—financial projections, operational plans, labor demand, health and safety impacts, and alignment with national strategies—has substantial probative value, and the totality of the record makes it more likely than not that the proposed endeavor will provide broad economic and societal benefits extending well beyond any single employer or locality. Accordingly, the first prong of *Dhanasar* is satisfied, and the record supports a finding that waiving the job offer and labor-certification requirements for Mr. Santos is consistent with the national interest.

2.2 2ND PRONG: *The Self-Petitioner is Well-Positioned to Advance the Proposed Endeavor in the United States*

USCIS evaluates whether a person is well positioned to advance a proposed endeavor by considering the individual's education, skills, knowledge, record of success in similar efforts, the concreteness and feasibility of the plans presented, progress already made, and the support the work has garnered from relevant actors. The evidence in Mr. Santos's case addresses each of these factors in a coherent and mutually reinforcing way.

(A) Education

Mr. Santos's formal education is directly aligned with his proposed endeavor in agribusiness management and international trade of fresh produce. He holds a Bachelor's degree in Business Administration, conferred in 2007 by the Instituto Hoyler / Faculdade Brasileira de Recursos Humanos, a recognized institution of higher education in Brazil (see Exhibit B). His academic transcript demonstrates completion of a comprehensive curriculum covering management, finance, accounting, marketing, organizational strategy, and related disciplines essential to the design, operation, and scaling of export-oriented business ventures (see Exhibit B). This degree provides both the foundational knowledge and the advanced analytical tools necessary to structure and lead complex commercial operations such as JMS Fresh Produce.

In addition to his academic credentials, Mr. Santos holds a professional license to practice as an Administrator, issued by the *Regional Council of Administration (CRA)* under registration number CRA-BA 19.827, with professional qualification certified on March 19, 2025 (see Exhibit C.II).

The CRA is the statutory professional regulatory body in Brazil responsible for overseeing the profession of Administration, analogous to state licensing boards for accountants, engineers, or architects in the United States. Established under Brazilian federal law, the CRA system ensures that only individuals who have completed accredited academic

programs in Administration and who meet ethical and professional standards may legally practice as Administrators and hold certain management positions in Brazilian companies.

Registration with the CRA is not automatic upon graduation; it requires submission of academic credentials, verification of degree authenticity, and ongoing compliance with the professional code of conduct established by the Federal Council of Administration (CFA). Mr. Santos's CRA registration confirms that he is not only academically qualified but also professionally licensed and in good standing to practice administration in Brazil, which underscores his credibility and formal recognition as a business management professional.

Further reinforcing his professional standing, Mr. Santos is a member of the Brazilian Association of Administration (Associação Brasileira de Administração), as evidenced by his membership card (registration number 2226295, approved March 19, 2025) and the association's bylaws (see Exhibit C.II).

The Brazilian Association of Administration is a national professional organization dedicated to advancing the field of administration, promoting ethical standards, facilitating continuing education, and representing the interests of professional Administrators across Brazil. According to its bylaws (see Exhibit C.II), membership is open to individuals who hold a degree in Administration from a recognized institution and who are registered with the CRA, thereby ensuring that members meet both academic and regulatory standards.

Membership in this association is significant because it reflects Mr. Santos's commitment to ongoing professional development, adherence to industry best practices, and active participation in the broader community of administration professionals. It also provides him access to technical resources, networking opportunities, and updated knowledge in management and business strategy, all of which enhance his capacity to lead complex, internationally oriented enterprises.

(B) Skills, Knowledge, and Record of Success in Similar Efforts

Mr. Santos's skills and specialized knowledge are not only theoretical; they have been tested and proven through more than a decade of progressively responsible leadership roles in agribusiness and related sectors.

His professional trajectory demonstrates continuous advancement in scope, complexity, and impact:

- **Conex Ar-Condicionado Ltda. (2013–2015)**:

Mr. Santos founded and managed Conex Ar-Condicionado Ltda., a company specializing in air conditioning systems and services, as documented in the company's registration with the Commercial Board of the State of São Paulo (JUCESP) (see Exhibit C.II). This early entrepreneurial experience provided him with foundational skills in business

formation, financial management, regulatory compliance, and client relations. Although this venture was in a different sector, it established his capacity to build and operate a formal business entity from inception, manage cash flow, and navigate the legal and administrative requirements of running a company in Brazil.

- **Conex Mastertec Ltda. (2013-2015)**:

Mr. Santos also held an ownership and management role in Conex Mastertec Ltda., as reflected in JUCESP records (see Exhibit C.II). This involvement further diversified his operational experience and demonstrated his ability to manage multiple business interests concurrently.

- **Cardili Citrus and Related Agribusiness Operations (2016–2023)**:

Mr. Santos transitioned into the agribusiness sector, where he assumed senior leadership responsibilities at Cardili Citrus, a major citrus producer and exporter. During this period, he was instrumental in transforming the company's operational and financial performance and in positioning it to compete in demanding international markets.

Agronomist and consultant Juliano Gerlach, who holds a degree in Agronomy and has extensive experience in agricultural certification and quality systems, worked closely with Mr. Santos from 2016 to 2020 at Cardili Citrus. In his detailed support letter (see Exhibit C.II), Mr. Gerlach states:

> "I met Mr. Jackson Marques dos Santos in 2016, when he was the manager of the Cardili Citrus packing house, in Santa Adélia/SP, on the Tahiti lime export project to the European Union. Upon recommendation, I was hired as the consultant responsible for the implementation of GLOBALG.A.P. and GRASP certifications. From 2016 to 2020, we worked together on the annual renewal of these certifications, during which time I was able to closely observe Mr. Marques's significant contributions to Cardili Citrus. The GLOBALG.A.P. and GRASP certifications were decisive in enabling the company's access to the European market, generating a positive impact not only for the organization but also for the local community, by expanding export capacity, creating new jobs, and increasing fruit purchases from small and medium-sized local producers."

Mr. Gerlach further emphasizes Mr. Santos's ability to coordinate agronomic, logistical, and administrative teams to meet rigorous audit and traceability requirements, noting that these certifications are among the most demanding in the global fresh produce industry and are prerequisites for doing business with major European retailers. This achievement demonstrates Mr. Santos's sophisticated understanding of international quality, safety, and compliance frameworks—knowledge that is directly transferable to meeting U.S. import and food safety standards.

Economist **Luciano Jacob**, who holds a degree in Economics and serves as director of LCJ Bio Tech, a consulting firm specializing in financial and economic strategy for

agribusinesses, collaborated with Mr. Santos from 2020 to 2023 at Cardili Citrus. In his support letter (see Exhibit C.II), Mr. Jacob writes:

> "I had the opportunity to meet Mr. Marques in 2020 through the recommendation of a mutual partner, Mr. Juliano Gerlach. At the time, I initially worked as a financial consultant, and soon became responsible for the entire financial management of Cardili Citrus, where he held a leadership position, driving the company's growth and structuring demands directed at the international market. For three years (2020 to 2023), I worked in close collaboration with Mr. Marques, directly witnessing his technical skills in planning and management.
>
> […] We managed to preserve the financial health of Cardili Citrus even in the face of sectoral seasonality and exchange rate challenges. During our joint work, one of the most significant results was the reduction of financial costs by approximately 20% and the optimization of working capital, ensuring sufficient liquidity to support the growth of monthly revenue, which rose from approximately R$400,000.00 to R$1,200,000.00."

This documented three-fold revenue increase, achieved in a mid-sized agribusiness operating in a highly competitive and price-sensitive commodity sector, evidences not only Mr. Santos's technical competence in financial management and cost control but also his strategic vision and execution capability in driving sustainable growth.

- **Green Gold Comércio, Importação e Exportação Ltda. (December 2023–present)**:

Mr. Santos currently serves as full-time Commercial and Administrative Director at Green Gold Comércio, Importação e Exportação Ltda. (Green Gold Citrus), an export-focused fruit company. His role and the company's performance are documented in a formal accounting declaration by Mr. Lukas Rocha Vieira de Carvalho, a certified accountant (CRC registration SP-330.814/O-0) and owner of Meta Contabilidade Ltda. Mr. Carvalho certifies that Mr. Santos has worked full-time as Manager at Green Gold Citrus since December 10, 2023, and that under his leadership the company has experienced substantial growth and currently employs 44 direct workers (see Exhibit C.II).

The company's audited revenue statements further corroborate Mr. Santos's impact. Green Gold Comércio, Importação e Exportação Ltda. generated total revenues of R$ 8,028,957.05 in 2024 and R$ 8,969,008.96 through August 2025 (see Exhibit C.II).

These figures reflect a robust, multimillion-real operation that has not only sustained but increased its revenue trajectory under Mr. Santos's management. The scale of these revenues, combined with the employment of dozens of workers and the company's focus on international fruit export, demonstrates that Mr. Santos possesses the operational, financial, and strategic skills necessary to manage large-scale, export-oriented agribusiness enterprises. His ability to maintain and grow such an operation in a sector characterized by thin margins, perishable inventory, and complex logistics is strong evidence of his expertise and effectiveness.

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Furthermore, Mr. Santos's compensation reflects the high value that the market places on his skills and leadership. According to the accountant's declaration, Mr. Santos earned R$ 499,210.21 in 2024 and R$ 275,692.90 through August 2025 from service provision and sales commissions related to his work at Green Gold Citrus and other associated companies (see Exhibit C.II). To contextualize these figures, data from salary surveys for the agribusiness sector indicate that the average monthly salary for senior managers and executives in medium-to-large agricultural and export companies in Brazil ranges from approximately R$ 234,932.00 annually. Mr. Santos's 2024 income of nearly R$ 500,000 is more than double the upper end of this range, placing him well within the top tier of compensation for professionals in his field. This level of remuneration is consistent with his status as a highly effective, results-driven executive whose contributions generate measurable financial returns.

(C) Concreteness and Feasibility of His Plans

Mr. Santos's proposed endeavor is supported by both a detailed business plan and demonstrated financial capacity, showing that his plans are concrete, realistic, and executable.

The business plan for JMS Fresh Produce sets out a clear and coherent strategy for importing Brazilian fresh produce into the United States, with an emphasis on citrus and other fruits sourced from established growers in Brazil (see Exhibit C.I).

The projections in the document are not aspirational in isolation; they are consistent with the scale and revenue volumes that Mr. Santos has already achieved and managed in Brazil. The plan demonstrates a sophisticated understanding of the volume of produce, number of suppliers, logistical flows, pricing structures, and regulatory requirements necessary to reach those financial targets.

Critically, Mr. Santos possesses the financial means to implement this plan. His personal financial statement from XP Investimentos, one of Brazil's largest and most reputable investment platforms, shows that as of the statement date, Mr. Santos holds investment assets totaling R$ 1,506,744.63 (see Exhibit C.II).

This substantial liquid capital, combined with his ongoing high income from Green Gold Citrus and other ventures, demonstrates that he is positioned to contribute personal capital to cover initial costs, working capital needs, and early operational expenses for JMS Fresh Produce. He is not dependent on speculative third-party funding or unproven financing arrangements; he has the financial capacity to assume a substantial portion of the early financial burden himself and to withstand the risks inherent in launching and scaling a U.S. operation. This financial readiness, together with the detailed and realistic business plan, establishes that his proposed endeavor is both concrete and feasible.

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(D) Progress He Has Already Made Toward the Endeavor

Mr. Santos has already advanced many of the foundational elements required to carry out the proposed endeavor.

First, he has built and maintained a network of producers and exporters in Brazil, many of whom have already been integrated into international supply chains under his management. Companies like Cardili Citrus and Green Gold Citrus have benefited from his efforts to organize production, implement compliance standards, and meet the expectations of foreign buyers. These relationships are not hypothetical; they are ongoing commercial ties with established producers who are capable of supplying the volume and quality of fruit needed for a U.S. distribution business.

Second, his leadership positions at Green Gold Citrus and his past transformational role at Cardili Citrus have given him current, real-time experience with export logistics, cold-chain management, customs procedures, and buyer requirements in foreign markets. This existing operational infrastructure—in terms of knowledge, contacts, and processes—is directly transferable to the U.S. context and means that many of the usual start-up learning curve issues have already been addressed in practice.

Third, as discussed above, Mr. Santos's financial capacity and income, together with his XP investment account, show that he is positioned to contribute personal capital and withstand initial costs and risks. The record indicates that he is not starting from zero; he is extending an existing and proven operational and commercial framework to a new geographic market.

(E) Support Garnered from Relevant Actors

The support Mr. Santos has received from independent professionals, business partners, and industry stakeholders further confirms that he is well positioned to advance his endeavor.

1. Green Gold Citrus – Owner and Exporter (Robson Leonardo Mossambani)

Robson Leonardo Mossambani is the owner of Green Gold Comércio, Importação e Exportação Ltda. (Green Gold Citrus), an export-focused Brazilian fruit company. As owner, he directly oversees commercial strategy, operational performance, and international relationships, and is well placed to assess the centrality and effectiveness of Mr. Santos's role.

> "We hereby certify that Mr. Jackson Marques dos Santos has been working at Green Gold Com. Imp. e Exp. Ltda. since November 2023, holding the position of full-time Commercial and Administrative Director. During his time in the role, Mr. Jackson has stood out for the strategic management of commercial operations and effective team leadership, with a focus on the export of fresh fruit to the European market…
>
> His market knowledge and business vision, combined with a practical and collaborative approach, have actively contributed to the implementation of modern

> management processes and to positioning the company as a benchmark for quality and reliability in the sector… His contribution has been decisive for the success and reputation of Green Gold Citrus."

Mr. Mossambani confirms that Mr. Santos is the full-time Commercial and Administrative Director whose strategy, leadership, and management processes have been "decisive" for Green Gold Citrus's success and reputation in international markets. This shows USCIS that a major exporter already depends on Mr. Santos to design and execute the very type of high-stakes, compliance-driven operations he proposes to replicate in the United States.

2. Cardili Citrus – CEO of Major Citrus Exporter (Julio Cardili Neto)

Julio Cardili Neto is the Chief Executive Officer of Cardili Citrus Ltda., a leading citrus producer and exporter. He supervised Mr. Santos over more than eight years and can attest to his responsibility for both export and domestic operations, as well as his role in systems and process improvements.

> "This letter certifies that Mr. Jackson Marques dos Santos worked as a full-time Manager at Cardili Citrus Ltda. from July 2015 to October 2023. During this period, Mr. Jackson demonstrated remarkable commitment, leadership, and competence in managing commercial and administrative operations… He coordinated fresh fruit export operations to the European market, ensuring compliance with international regulations (such as GlobalGAP and sanitary certifications)… and implemented control systems (CRM and ERP) to optimize processes and monitor results.
>
> [He] directly contributed to the expansion of the international client base and the consolidation of the brand in new markets by managing certification processes and ensuring compliance with European market quality standards. Internally, [he] led teams with a focus on productivity and excellence, consistently promoting a culture of responsibility and innovation."

Mr. Cardili confirms that Mr. Santos led export operations, ensured compliance with demanding European standards, expanded the client base, and institutionalized data-driven systems at Cardili Citrus. This long-term, employer-level testimony supports the conclusion that Mr. Santos has already executed, at scale, the same type of work—export management, compliance, and logistics coordination—that he will carry out through JMS Fresh Produce.

3. ABPEL – President of National Producers and Exporters Association (Afonso Castellucci)

Afonso Castellucci is a Mechanical Engineer with specializations in Safety Engineering and Business Administration, with over 40 years of experience in large industries. He owns a logistics company focused on export and serves as President of the Brazilian Association of Lemon Producers and Exporters (ABPEL), acting as an institutional liaison with national and

international organizations. He evaluates not just one company but practices across the lemon export sector.

> "I met Mr. Jackson Marques dos Santos in mid-2019 during his management at Cardili Citrus's packinghouse in Santa Adélia/São Paulo… I noticed the excellent work carried out by the company in processing Tahiti limes. Recognizing this quality, I recommended the company to commercial partners, as my goal, as president of ABPEL, is to promote the strengthening of processes and partnerships that enhance exports and foster the sustainability of the sector.
>
> [Under his leadership] the structuring of the fruit selection, grading, and certification process… became a benchmark for other organizations in the sector, which went on to adopt similar practices in subsequent harvests… Compared to numerous other professionals I have worked with throughout my career, Mr. Marques demonstrates skills well above average… His expertise in operations management, standardization, and international certifications is likely to contribute to the strengthening of production and logistics chains in projects focused on process improvement and the sustainable expansion of agribusiness… I fully support Mr. Marques in his initiative to obtain the EB-2 NIW visa."

From a sector-wide vantage point, Mr. Castellucci identifies Mr. Santos's processes as a "benchmark" adopted by other companies and rates his skills "well above average." He expressly links Mr. Santos's expertise in operations, standardization, and certifications to expected gains in productivity and supply-chain strength in markets such as the United States and offers full support for his EB-2 NIW. This is strong evidence that key national-level stakeholders view Mr. Santos as a high-impact actor whose methods raise standards for the entire field.

4. Jagrão Brazil – CEO of International Exporter (Sérgio Negrão)

Sérgio Negrão is the Chief Executive Officer of Jagrão Brazil, an exporter operating with partners in Europe, the Middle East, and North America. With over twelve years in agribusiness and international fruit trade, he oversees export operations, crop planning, cold chain management, and quality audits, giving him a sophisticated understanding of what is required to maintain reliable, certified supply to demanding markets.

> "I have known Mr. Jackson Marques dos Santos since 2018, when he was working as a packing house manager at Cardili Citrus… Since then, we have maintained an ongoing collaboration, more recently through his role at Green Gold Citrus, where I had the opportunity to closely notice his ability to coordinate complex flows of receiving, sorting, and grading, ensuring quality standardization and meeting deadlines under varying market and weather conditions.
>
> He integrated routines for loss control, equipment calibration, compliance documentation, and team training, ensuring consistency from the field to international shipment… Based on internal estimates from our team, under Mr. Marques's coordination, partner companies recorded monthly revenue growth exceeding 200% over successive harvests. In my assessment, Mr. Marques's skill

> set has sector-wide impact: it improves the resilience of perishable goods supply chains, strengthens quality and food safety, and promotes productivity practices that reduce waste. These practices are transferable to the U.S. market… In light of the above, I recommend Mr. Marques in support of his EB-2 NIW petition."

Mr. Negrão credits Mr. Santos with integrating loss-control routines, compliance documentation, and training in a way that produced consistent, certified supply and contributed to revenue growth "exceeding 200%" over successive harvests. He characterizes Mr. Santos's skill set as having "sector-wide impact" and explicitly states that his practices are transferable to the U.S. market, with expected gains in supply stability and competitiveness. This demonstrates that sophisticated international buyers already depend on Mr. Santos's methods and expect his work to generate tangible benefits in the United States.

Such endorsements go beyond general character references; they provide detailed, experience-based testimony regarding Mr. Santos's abilities and the value that his continued work—now oriented toward the United States—can bring. They also demonstrate that his role is considered critical by multiple, independent players in the agribusiness value chain, from field production to financial structuring.

2nd Prong Final Considerations

Considering his directly relevant education and professional credentials, his advanced skills and demonstrated knowledge in agribusiness management and international trade, his strong record of success in founding businesses and scaling export-oriented fruit enterprises (documented through letters of support, company revenue statements, and accountant certifications), his exceptional compensation level (nearly double the industry average for senior executives), the specificity and realism of his business plan for JMS Fresh Produce, his substantial personal financial capacity (over R$ 1.5 million in liquid investments), the tangible progress he has already made in assembling the necessary supply, operational, and financial foundations, and the robust support he has garnered from independent experts, producers, and business partners, the evidence shows that Mr. Santos is exceptionally well positioned to advance his proposed endeavor in the United States. Under the applicable statutory and regulatory standards, as interpreted in *Matter of Dhanasar*, 26 I&N Dec. 884 (AAO 2016), this satisfies the second prong of the national interest waiver framework.

2.3 3RD PRONG: *On Balance, It Would be Beneficial to the United States to Waive the Requirement of a Job Offer and Labor Certification*

Under the third prong of *Matter of Dhanasar*, USCIS must determine whether, on balance, it would be beneficial to the United States to waive the job offer and corresponding labor certification requirements, even though those requirements ordinarily protect U.S. workers' wages and job opportunities under 20 C.F.R. Part 656 (including 20 C.F.R. § 656.1).

In making this discretionary determination, adjudicators consider, among other factors, whether the nature of the proposed endeavor and the individual's role make labor certification

impractical; whether the United States would benefit from the individual's contributions even if qualified U.S. workers might be available; and whether the person's specialized skills and the public benefits of the endeavor go beyond what can be captured by a single employer's minimum job requirements.

Viewed in light of this standard, the record shows that waiving the job offer and labor certification requirements for Mr. Santos is, on balance, in the national interest. His proposed endeavor is the launch and expansion of JMS Fresh Produce LLC in Miami, Florida, a specialized importer and distributor of Latin American fruits and roots designed as a logistics-driven food security solution rather than a traditional, static job with a single employer, as detailed in the business plan and supporting research (See Exhibit C.I). The evidence demonstrates that:

(A) The labor certification framework is ill suited to Mr. Santos's project-driven, multi-hub, innovation-focused endeavor.

The labor certification process presumes a fixed, employer-defined position with minimum requirements, advertised in a local labor market. Mr. Santos's role, however, is inherently entrepreneurial and integrative. As founder and principal of JMS Fresh Produce, he will be responsible for (See Exhibit C.I, Business Plan):

- Designing and executing a multi-node supply chain that links certified Latin American producers to U.S. supermarkets, distributors, and food service organizations across Miami, Texas, New Jersey, and Chicago;
- Embedding Food Safety Modernization Act (FSMA) aligned controls, Foreign Supplier Verification Program (FSVP) procedures, and lot-level traceability throughout the import chain, building on his prior experience maintaining international certifications in export operations; and
- Coordinating multi-jurisdictional logistics, cold chain management, and regulatory clearances at ports and airports that handle a substantial share of U.S. perishable imports.

These functions are not confined to a single, local "job" but span ownership, strategy, regulatory compliance, and operational leadership across several states and multiple categories of U.S. buyers. Attempting to reduce this entrepreneurial, systems-level role to a single set of minimum job requirements for a conventional PERM application would not realistically reflect how Mr. Santos advances his endeavor.

In evaluating whether it is, on balance, beneficial to the United States to waive the job offer and labor certification requirements, it is also relevant that Mr. Santos's expertise aligns with several U.S. Department of Labor O*NET[22] occupations that are designated as "Bright

[22] https://www.dol.gov/agencies/eta/onet

Outlook" fields projected to grow faster than average. These occupations in logistics[23], supply chain management[24], and administrative services[25] are summarized in the national interest waiver research materials (See Exhibit C.I).

Each of these occupations involves planning, directing, and coordinating complex administrative, transportation, and logistics functions—exactly the type of high-responsibility work Mr. Santos performs in designing and overseeing JMS Fresh Produce's integrated, compliance-driven supply chain. The fact that these roles are identified as "Bright Outlook" positions expected to grow faster than average and generate numerous job openings nationwide confirms that the United States faces expanding labor market needs in logistics and supply chain management rather than any surplus of qualified professionals.

Against this backdrop, permitting Mr. Santos to continue developing JMS Fresh Produce under a national interest waiver will reinforce, not undercut, U.S. workforce priorities by allowing a highly experienced professional to operate in a sector the Department of Labor itself identifies as strategically expanding. Accordingly, the nature of his work makes the labor certification process an impractical and ill-fitting vehicle for capturing his actual contribution to the U.S. economy and food system.

(B) The United States benefits from Mr. Santos's specific combination of experience and compliance expertise, regardless of the theoretical availability of other workers.

The documentation shows that Mr. Santos's background is not that of a generic manager, but of a specialist whose career has been built at the intersection of international produce trade, food safety compliance, and cold chain logistics (See Exhibit B and See Exhibit C.II):

- Over 15 years of experience in international fresh produce trade, logistics optimization, and compliance oversight, including leadership positions at companies where he expanded exports, reduced spoilage, and maintained international certifications;
- Demonstrated ability to manage and grow complex export programs, including tripling monthly revenue, reducing financial costs, and maintaining a network of certified suppliers that meet stringent foreign market requirements;
- Hands-on experience designing logistics systems for Latin American growers, advising on international certifications and FDA registration, implementing lot-level traceability, and preparing suppliers for regulatory inspections and audits.

In the proposed U.S. endeavor, this expertise is directly deployed to address structural vulnerabilities in the U.S. food system. The business plan and supporting research summarize U.S. government data showing that the share of U.S. fresh fruit and vegetable availability

[23] https://www.onetonline.org/link/summary/13-1081.00
[24] https://www.onetonline.org/link/summary/11-3071.04
[25] https://www.onetonline.org/link/summary/11-3012.00

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supplied by imports has increased significantly over the last decade and a half, underscoring both the centrality of foreign supply chains to U.S. food security and the need for sophisticated, compliance-driven logistics platforms to manage them (See Exhibit C.I).

JMS Fresh Produce is organized specifically to (See Exhibit C.I):

- Source high-demand commodities (mangoes, limes, grapes, ginger) from rigorously vetted Latin American producers;
- Maintain continuous temperature-controlled logistics from farm to U.S. distribution hubs, thereby reducing spoilage and waste; and
- Assume the compliance and verification burdens that U.S. supermarkets and distributors face under FSMA and FSVP by embedding supplier audits, documentation, and traceability into its core operations.

Even assuming that other qualified professionals exist within the United States, the record reflects that it is Mr. Santos who has already developed the integrated grower network, compliance architecture, and operational model that JMS Fresh Produce will implement, grounded in his long-standing leadership in export operations and his prior entrepreneurial experience (See Exhibit B and C.II). The national interest lies not merely in filling a generic management vacancy, but in enabling continuity of this specific, proven integration of sourcing, compliance, and logistics that he has uniquely designed and is positioned to execute.

(C) The endeavor is structured to produce broad, forward-looking benefits that extend well beyond a single employer's interests.

The JMS Fresh Produce business plan and supporting evidence indicate that Mr. Santos's activities will generate substantial, multi-dimensional benefits for the United States that surpass the scope typically addressed in a single-employer labor certification:

- **Food security and public health.** The record summarizes U.S. agricultural data showing that imports now account for a majority of fresh fruit availability and a growing share of fresh vegetable availability in the United States, with import shares increasing steadily over the past decade and a half (See Exhibit C.I). By creating an import platform that reduces spoilage through advanced cold chain management and compliance controls, JMS Fresh Produce helps stabilize the year-round availability of nutrient-dense produce in major metropolitan markets, supporting national efforts to increase access to affordable fruits and vegetables and mitigate diet-related disease (See Exhibit C.I).
- **Waste reduction and efficiency.** Food loss and waste in perishable supply chains represent a persistent concern in U.S. agricultural and environmental policy. Mr. Santos's model—leveraging Miami's role as a perishables gateway, minimizing dwell time, and using real-time temperature monitoring—is specifically designed to reduce shrinkage at each stage of the import and distribution chain. Lower spoilage improves

margins for retailers and distributors while advancing environmental and economic efficiency objectives (See Exhibit C.I).

- **Job creation and economic impact.** JMS Fresh Produce's five-year staffing plan projects growth from 5 to 18 U.S. employees across sales, logistics, quality control, compliance, finance, HR, and supply chain analytics, with cumulative payroll in the millions of dollars and associated multiplier effects for trucking, warehousing, packaging, and retail (See Exhibit C.I). These positions are not isolated to a single locality; they are distributed across Miami, Texas, New Jersey, and Chicago, contributing to regional employment and tax bases in multiple states. Mr. Santos's past revenue records, financial documentation, and proof of high earnings further demonstrate both his economic impact and the financial feasibility of sustaining and expanding such U.S. hiring (See Exhibit B and C.II).
- **Supply chain resilience and diversification.** Federal analyses of agricultural trade, as summarized in the record, emphasize the importance of diversified import sources and resilient logistics to manage climatic, sanitary, and geopolitical disruptions (See Exhibit C.II). By building a diversified Latin American grower network and anchoring operations in multiple U.S. hubs, Mr. Santos's endeavor reduces concentrated dependence on any one route or origin (See Exhibit C.I). This diversification supports price stability and resilience in the face of climatic or logistical shocks, directly aligning with U.S. objectives to strengthen critical food supply chains.

These projected benefits of food system resilience, regulatory compliance capacity, waste reduction, and measurable job creation across several states are national in scale and nature. They are not limited to the fortunes of a single U.S. employer but instead touch core aspects of the U.S. agricultural trade and public health landscape, as corroborated by the business plan, industry research, and independent letters of support (See Exhibit C.I and C.II).

(D) The benefits of Mr. Santos's continued and expanded work outweigh the protections offered by the labor certification process in this context.

The labor certification process is structured to ensure that the admission of a foreign worker to fill a specific position will not adversely affect the wages and working conditions of U.S. workers similarly employed. In Mr. Santos's case, however, the evidence shows that:

- His endeavor is entrepreneurial and creates, rather than displaces, U.S. jobs in a sector where demand for skilled logistics, compliance, and quality assurance professionals already exceeds supply, as reflected in the research on expanding logistics and supply chain occupations (See Exhibit C.I);
- His role is not substitutable with a conventional employee who could simply be recruited through domestic advertising; it involves the continuation of a highly specialized, personally developed network of grower relationships, compliance systems, and operational practices that he has already proven in Latin American and international markets (See Exhibit C.II);

- The costs and delays inherent in attempting to frame this systems-level entrepreneurial role as a single, PERM-based position would realistically impede or derail the timely implementation of an endeavor whose benefits—greater food security, reduced waste, improved compliance, and multi-state job creation—accrue to the United States as a whole.

When these factors are weighed together under the preponderance of the evidence standard, the balance tilts strongly toward a conclusion that the national benefits of allowing Mr. Santos to proceed without a job offer and labor certification exceed any marginal benefit that might be derived from subjecting his unique, innovation-driven endeavor to the traditional PERM process.

3rd Prong Final Considerations

In sum, the record shows that Mr. Santos's proposed endeavor is entrepreneurial, multi-institutional, and compliance-intensive in a way that does not fit the conventional labor certification framework; that the United States will benefit from his particular blend of expertise in international produce trade, regulatory compliance, and cold chain logistics irrespective of the theoretical availability of other workers; and that his activities are structured to generate broad, forward-looking gains in food security, waste reduction, supply chain resilience, and U.S. job creation across several states (See Exhibit B, C.I and C.II).

Under these circumstances, and applying the relevant statutory and regulatory standards, it is more likely than not that, on balance, waiving the job offer and labor certification requirements is beneficial to the United States. Accordingly, Mr. Santos satisfies the third prong of *Matter of Dhanasar*, supporting a discretionary grant of a national interest waiver under INA § 203(b)(2)(B)(i).

2 FINAL CONSIDERATIONS

From all topics discussed above and the attached evidence, it is "more likely than not" that:

1. **EB-2 Eligibility:** Mr. Santos satisfies the advanced degree requirements. His bachelor's degree in business administration and fifteen-year career in agribusiness, reflect a degree of expertise significantly above that ordinarily encountered in the field (See Exhibit B).
2. **Substantial Merit and National Importance:** JMS Fresh Produce LLC addresses systemic U.S. challenges in food safety, nutrition, and supply chain efficiency. The endeavor aligns with federal priorities and is projected to generate multi-million-dollar revenues and significant U.S. employment (See Exhibit C.I).
3. **Well-Positioned:** Mr. Santos's record of scaling export enterprises, his substantial personal financial capacity, and the endorsements from industry experts confirm he is exceptionally well-positioned to execute this endeavor (See Exhibit C.II).

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4. **On Balance:** Waiving the job offer and labor certification requirements is beneficial to the United States. The endeavor creates skilled jobs in "Bright Outlook" fields and provides national benefits in food security and waste reduction that cannot be captured by a single-employer labor certification (See Exhibit C.I).

Accordingly, Mr. Jackson Marques dos Santos merits a favorable adjudication of this I-140 petition under the Employment-Based Second Preference category with a request for a waiver of the job offer and labor certification requirements, pursuant to INA §203(b)(2)(B). His leadership and proven impact in international trade align with the legislative intent of the National Interest Waiver, promising a substantial benefit to the national economy and welfare.

We respectfully request USCIS to approve this petition based on the overwhelming evidence of national benefit and professional excellence.

Should you require any further information or documentation, please do not hesitate to contact my office. Thank you in advance for your kind assistance with this matter.

Sincerely,



Otavio Haverroth Silva
California Bar # 343486

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Exhibit A

cardilicitrus@gmail.com
75 98114-3910
Rua Lucio Bento Cardoso, 04
Alagoinhas BA 48000057
03/31/1986

JACKSON MARQUES DOS SANTOS

OBJECTIVE

Professional with solid experience in Administrative, Financial, and Commercial areas, specializing in strategic business management, market development, and team leadership. Seeking a position to leverage skills in planning, negotiation, and business expansion, contributing to the organization's sustainable growth.

WORK EXPERIENCE

11/2023 – Present

Commercial and Administrative Director
Green Gold Com Imp. e Exp. Ltda - Alagoinhas, Bahia

- Leadership of commercial and operational strategies for the export of fresh fruits to the European market, ensuring client growth and profitability.
- Management of multidisciplinary teams (commercial, logistics, administrative), optimizing processes and ensuring compliance with international regulations (GlobalGAP, et.).
- Negotiation with clients, distributors, and partners in Europe, expanding contracts and ensuring competitiveness in the international market.
- Financial and budget planning, cost control, and profitability analysis by product and logistics route.
- Supervision of the entire export supply chain (from farm to port), including certifications, refrigerated logistics, and customs documentation.
- Development of pricing strategies, trade marketing initiatives, and relationships with governmental agencies (e.g., ApexBrasil, MAPA).

07/2015 - 10/2023

Commercial and Administrative Manager
Cardili Citrus - Santa Adélia, São Paulo

Experience in the International Market (Europe):

- Leadership of **fresh fruit export operations**, ensuring compliance with European regulations (GlobalGAP and sanitary certifications).
- Expansion of international client portfolio, including direct contract negotiation with importers.
- Relationship management with governmental agencies (MAPA, ApexBrasil) for securing incentives and opening new markets.

Experience in the Domestic Market:

- Commercial and administrative management of domestic sales, focusing on major supermarket chains and wholesalers.
- Demand, inventory, and distribution planning to prevent waste and ensure product freshness.
- Implementation of control systems (CRM, ERP) to track sales metrics, margins, and customer satisfaction.

06/2012 - 06/2015

Commercial Director & Partner
Conex Ar Condicionado - São Paulo, State of São Paulo

- Strategic leadership of the commercial department, responsible for prospecting, negotiating, and retaining corporate clients (construction companies, architects, industries, and retailers).
- Development and execution of sales plans, expanding the client portfolio and increasing annual revenue.
- Management of technical teams, aligning commercial and after-sales operations to ensure customer satisfaction.
- Structuring of commercial processes, from budgeting to contract closing.
- Identification of opportunities in bids and major projects, preparing competitive technical and commercial proposals.
- Competitor and market analysis, adjusting pricing strategies, service mix, and competitive differentiators.
- Partnerships with suppliers and manufacturers to optimize costs, timelines, and payment terms.

11/2009 - 02/2012

Commercial and Financial Assistant
Polo Factoring F M Ltda- São Paulo, State of São Paulo

Commercial Activities:

- Prospecting and negotiation of factoring contracts with SMEs and corporate clients, achieving acquisition and retention targets.
- Credit and risk analysis of potential clients, evaluating financial health, cash flow, and guarantees to approve receivables advance operations.
- Structuring of customized commercial proposals (rates, terms, limits), aligned with clients' working capital needs.

Financial Activities:

- Control and reconciliation of financial flows for factoring operations (settlement of receivables, defaults, client disbursements).
- Preparation of management reports for the board, including profitability analysis by portfolio and cash flow projections.

EDUCATION

01/2004 - 12/2007

Bachelor's Degree in Business Administration
Brazilian College of Human Resources - São Paulo, State of São Paulo
Status - Completed

SKILLS AND COMPETENCIES

- Commitment to achieving goals and results
- Collaboration in commercial routines
- Strong interpersonal skills for client retention
- Effective communication focused on negotiations

I, Carolina Favero da Silva, telephone number 415 425-2508, mailing address P.O. Box 90487, San Diego, CA 92169, certify that the professional translation of this document from Portuguese to English has been performed by myself, a qualified translator fluent in both languages, and that the following is an accurate and complete translation of the document.


_____ Date: December 29, 2025.

cardilicitrus@gmail.com
75 98114-3910
Rua Lucio Bento Cardoso, 04
Alagoinhas BA 48000057
31/03/1986

JACKSON MARQUES DOS SANTOS

OBJETIVO

Profissional com sólida experiência nas áreas Administrativa, Financeira e Comercial, atuando na gestão estratégica de negócios, desenvolvimento de mercados e liderança de equipes. Busco uma posição onde possa aplicar minhas habilidades em planejamento, negociação e expansão empresarial, contribuindo para o crescimento sustentável da organização.

HISTÓRICO PROFISSIONAL

11/2023 - Atual

Diretor Comercial e Administrativo
Green Gold Com Imp. e Exp. Ltda - Alagoinhas, BA

- Liderança das estratégias comerciais e operacionais para exportação de frutas frescas para o mercado europeu, garantindo expansão de clientes e rentabilidade.
- Gestão de equipes multidisciplinares (comercial, logística, administrativa), otimizando processos e assegurando compliance com regulamentações internacionais (GlobalGAP e etc.).
- Negociação com clientes, distribuidores e parceiros na Europa, ampliando contratos e assegurarando competitividade no mercado internacional.
- Planejamento financeiro e orçamentário, controle de custos e análise de rentabilidade por produto e rota logística.
- Supervisão de toda a cadeia exportadora (from farm to port), incluindo certificações, logística refrigerada e documentação aduaneira.
- Desenvolvimento de estratégias de pricing, trade marketing e relacionamento com órgãos governamentais (como ApexBrasil e MAPA).

07/2015 - 10/2023

Gerente Comercial e Administrativo
Cardili Citrus - Santa Adélia, SP

Atuação no Mercado Internacional (Europa):

- Liderança das operações de **exportação de frutas frescas**, garantindo conformidade com regulamentações europeias (GlobalGAP e certificações sanitárias).
- Expansão da carteira de clientes internacionais, com negociação direta de contratos junto a importadores.
- Relacionamento com órgãos governamentais (MAPA, ApexBrasil) para captação de incentivos e abertura de novos mercados.

Atuação no Mercado Interno:

- Gestão comercial e administrativa das vendas domésticas, com foco em grandes redes de supermercados e atacadistas.
- Planejamento de demanda, estoques e distribuição para evitar desperdícios e garantir frescor do produto.
- Implementação de sistemas de controle (CRM, ERP) para rastrear métricas de vendas, margens e satisfação do cliente.

06/2012 - 06/2015

Diretor Comercial e Sócio
Conex Ar Condicionado - São Paulo, São Paulo

- Liderança estratégica do setor comercial, responsável pela prospecção, negociação e fidelização de clientes corporativos (Construtoras, Arquitetos, indústrias e comércios).
- Desenvolvimento e execução de planos de vendas, ampliando a carteira de clientes e aumentando o faturamento anual.
- Gestão de equipes de técnicos, alinhando operações comerciais e de pós-venda para garantir satisfação do cliente.
- Estruturação de processos comerciais, desde orçamentação até fechamento de contratos.
- Identificação de oportunidades em licitações e grandes projetos, com elaboração de propostas técnicas e comerciais competitivas.
- Análise de concorrência e mercado, ajustando estratégias de precificação, mix de serviços e diferenciais competitivos.
- Parcerias com fornecedores e fabricantes para otimizar custos, prazos e condições de pagamento.

11/2009 - 02/2012

Assistente Comercial e Financeiro
Polo Factoring F M Ltda - São Paulo, São Paulo

Atuação Comercial:

- Prospecção e negociação de contratos de factoring com PMEs e clientes corporativos, alcançando metas de aquisição e retenção.
- Análise de crédito e risco de potenciais clientes, avaliando saúde financeira, fluxo de caixa e garantias para aprovar operações de antecipação de recebíveis.
- Estruturação de propostas comerciais customizadas (taxas, prazos, limites), alinhadas às necessidades de capital de giro dos clientes.

Atuação Financeira:

- Controle e reconciliação de fluxo financeiro das operações de factoring (liquidação de títulos, inadimplência, repasses aos clientes).
- Elaboração de relatórios gerenciais para diretoria, com análise de rentabilidade por carteira e projeções de caixa.

FORMAÇÃO ACADÊMICA

01/2004 - 12/2007

Bacharelado de Administração
Faculdade Brasileira de Recursos Humanos - São Paulo, SP
Status - Concluído

HABILIDADES E COMPETÊNCIAS

- Dedicação para alcance das metas e resultados
- Colaboratividade nas rotinas comerciais
- Bom relacionamento interpessoal para a fidelização de clientes
- Comunicação eficaz voltada a negociações

Exhibit B - Eligibility Criteria: Advanced Degree

FEDERATIVE REPUBLIC OF BRAZIL
ORDER AND PROGRESS

Hoyler Institute

Brazilian College of Human Resources

The Director of the Brazilian College of Human Resources, in the exercise of his duties
and in view of the Business Program graduation
on December 20, 2007, hereby confers the title of

Bachelor in Business to

Jackson Marques dos Santos

Brazilian, born in the State of Bahia, on March 31, 1986,
ID No. 09781407 53 – Bahia,
and grants him this diploma, so that he may enjoy all legal rights and prerogatives.

São Paulo, September 24, 2008

Vera Lúcia dos Santos
General Secretary

Graduate

Prof. Nemias Mota
Director

BUSINESS
Program

Recognized by MEC Ordinance No. 421
of 07/10/1989 - Official Gazette published on 07/12/1989

Conferred by:

Antonio de Pádua Blanco
Diploma Registration Department
UFSCar (Federal University of São Carlos)

MEC (Ministry of Education) - FEDERAL UNIVERSITY OF SÃO CARLOS
Process No. 6027/09 – Law 9,394 – Official Gazette of 12/23/1996

Diploma registered under No. 525705

São Carlos 05 / 27 / 2009

Rozeli Aparecida Francisco Barbosa
Head of the Diploma Registration Department
Delegation Ordinance GR 908/2006 of 07/19/2006

7

I, Carolina Favero da Silva, telephone number 415 425-2508, mailing address P.O. Box 90487, San Diego, CA 92169, certify that the professional translation of this document from Portuguese to English has been performed by myself, a qualified translator fluent in both languages, and that the following is an accurate and complete translation of the document.



_____ Date: July 15, 2025.

8

Instituto Hoyler

Faculdade Brasileira de Recursos Humanos

O Diretor da Faculdade Brasileira de Recursos Humanos, no uso de suas atribuições e tendo em vista a colação de grau do Curso de Administração, em 20 de dezembro de 2007, confere o título de

Bacharel em Administração a

Jackson Marques dos Santos

brasileiro, natural do Estado da Bahia, nascido a 31 de março de 1986,
R.G. n.º 09781407 53 - BA

e outorga-lhe o presente Diploma, a fim de que possa gozar de todos os direitos e prerrogativas legais.

São Paulo, 24 de setembro de 2008

Vera Lúcia dos Santos
Secretária Geral

Diplomado

Prof. Nemias Mota
Diretor

Curso de
ADMINISTRAÇÃO

Reconhecido pela Portaria do MEC n.° 421
de 10-07-1989 - D.O.U. de 12-07-1989

Conferido por:
Antonia de Pádua Blanco
Departamento de Registro de Diplomas
UFSCar

MEC - UNIVERSIDADE FEDERAL DE SÃO CARLOS
Processo No. 6022/09 Lei 9.394 - DOU de 23/12/1996.
Diploma Registrado sob No. 525705
São Carlos 29/05/2009

Roseli Aparecida Francisco Barbosa
Chefe do Departamento de Registro de Diplomas
Delegação Port. GR 449/2006 de 19/07/2006

10

College Hoyler
Uniting knowledge and service

BRAZILIAN COLLEGE OF HUMAN RESOURCES

Recognized by MEC Ordinance No. 421 of 07/10/1989 - Official Gazette 07/12/1989

SCHOOL TRANSCRIPT - BUSINESS PROGRAM

Avenida Santo Amaro, 4039 - Brooklin - São Paulo - SP, ZIP 04555-002 - Phone: 11 5561-1313

Student's Name:	**JACKSON MARQUES DOS SANTOS**		
Date of Birth:	03/31/1986	**State:**	Bahia
Nationality	Brazilian		
ID No.	09781407 53	**State:**	Bahia
		Selection Process	
Classification:	14th place		
Month:	**January**	**Year:**	2004

1st Semester (2004)			**2nd Semester (2004)**		
Subjects	**CL**	**Grade**	**Subjects**	**CL**	**Grade**
Business Communication I	42	7.55	Business Communication II	42	7.55
Accounting I	42	7.78	Accounting II	42	7.78
Mathematics I	42	7.75	Mathematics II	42	7.75
Research Methods and Techniques in Administration I	42	7.00	Research Methods and Techniques in Administration II	42	7.00
Economics I	42	7.64	Economics II	42	7.64
Psychology I	42	8.22	Psychology II	42	8.22
Theory of Administration I	42	7.00	Theory of Administration II	42	7.00
Information Technology I	42	7.78	Information Technology II	42	7.78
TOTAL CREDIT HOURS	**336**		**TOTAL CREDIT HOURS**	**336**	

3rd Semester (2005)			**4th Semester (2005)**		
Subjects	**CL**	**Grade**	**Subjects**	**CL**	**Grade**
Philosophy I	42	8.38	Philosophy II	42	8.50
Law Applied to Administration	42	8.01	Labor Legislation	42	8.51
Statistics I	42	7.80	Statistics II	42	7.00
Sociology Applied to Administration I	42	7.20	Sociology Applied to Administration II	42	8.56
Personal Identification and Referral	42	7.00	Market Trends and Scenarios	42	9,00
Theory of Administration III	42	7.50	Theory of Administration IV	42	9,00
Organization and Management	42	7.91	Personnel Department Practices	42	9.08
Leadership and Organizational Development	42	7.60	Organizational Climate, Training, and Development	42	9.25
Complementary Activities	(20)	Satisf.	Complementary Activities	(20)	Satisf.
TOTAL CREDIT HOURS	**336**		**TOTAL CREDIT HOURS**	**336**	

5th Semester (2006)			**6th Semester (2006)**		
Subjects	**CL**	**Grade**	**Subjects**	**CL**	**Grade**
Marketing I	42	8.26	Marketing II	42	7.56
Financial and Budgetary Administration I	42	8.10	Financial and Budgetary Administration II	42	7.53
Information Systems Management I	42	7.33	Information Systems Management II	42	7.80
Knowledge Management and Strategic Leadership	42	7.36	Competency Management	42	6.35
Organizational Behavior	42	6.60	Performance Indicators, Management, and Performance	42	7.00
Logistics I	42	5.00	Logistics II	42	5.00
Advanced Topics in Administration	42	8.43	Business Management Laboratory	42	7.15
Production and Operations Management I	42	7.62	Production and Operations Management II	42	7.50
Supervised Internship	(100)	Satisf.	Supervised Internship	(100)	Satisf.
Complementary Activities	(20)	Satisf.	Complementary Activities	(20)	Satisf.
TOTAL CREDIT HOURS	**336**		**TOTAL CREDIT HOURS**	**336**	

7th Semester (2006)			8th Semester (2006)		
Subjects	**CL**	**Grade**	**Subjects**	**CL**	**Grade**
Project Planning and Management	42	7.31	Quality and Productivity Systems	42	6.60
Ergonomics and Workplace Safety	42	7.00	Technology Applied to Human Resources	42	7.33
Ethics and Citizenship	42	8.56	Mental Health and Conflict Management	42	9.00
Innovation and Business Competitiveness	42	7.73	Management of Small and Medium Enterprises	42	7.00
Strategic Planning	42	7.40	Strategic Business Management	42	8.16
Business Consulting I	42	8.53	Business Consulting II	42	8.17
Sustainable Business Management	42	7.80	Environmental Management	42	8.00
Service Management I	42	7.87	Service Management II	42	7.37
Undergraduate Thesis	(50)	8.50	Undergraduate Thesis	(50)	8.50
Supervised Internship	(50)	Satisf.	Supervised Internship	(50)	Satisf.
Complementary Activities	(20)	Satisf.	Complementary Activities	(20)	Satisf.
TOTAL CREDIT HOURS	**336**		**TOTAL CREDIT HOURS**	**336**	

CL: Course Load
Satisf.: Satisfactory

Total Credit Hours: 3,208
Graduation Date: 12/20/2007
Diploma Issuance Date: 12/20/2007

São Paulo, December 20, 2007.

-----//Signature//----
Professor Vaurene Ribeiro de Carvalho
Secretary - MEC Registration No. 9618891 - SP
ID No.: 19.303.769-5 - SP
**MEC: Ministry of Education*

-----//Signature//----
Professor Jabes Oliveira Moura, PhD
Director - MEC Registration No. 3.696/95 - SP
CRA/SP No. 82274 | ID No.: 5.223.368-2 - PR
**CRA (Regional Council of Administration)*

I, Carolina Favero da Silva, telephone number 415 425-2508, mailing address P.O. Box 90487, San Diego, CA 92169, certify that the professional translation of this document from Portuguese to English has been performed by myself, a qualified translator fluent in both languages, and that the following is an accurate and complete translation of the document.


_____ Date: July 21, 2025.

FACULDADE BRASILEIRA DE RECURSOS HUMANOS

Reconhecida pela Port. do MEC nº 421 de 10/7/89 – D.O.U. 12/7/89

HISTÓRICO ESCOLAR - CURSO DE ADMINISTRAÇÃO

Av. Santo Amaro, 4039 – Brooklin – São Paulo – SP CEP 04555-002 – Fone: 11 5561 1313

Nome do Aluno:	**JACKSON MARQUES DOS SANTOS**		
Data de Nascimento:	31/03/1986	**Estado:**	Bahia
Nacionalidade:	Brasileira		
RG nº	09781407 53	**Estado:**	Bahia
		Processo Seletivo	
Classificação:	14º colocado		
Mês:	**Janeiro**	**Ano:**	2004

1º semestre (2004)		
Disciplinas	**CH**	**Média**
Comunicação Empresarial I	42	7,55
Contabilidade I	42	7,78
Matemática I	42	7,75
Métodos e Técnicas de Pesquisa na Administração I	42	7,00
Economia I	42	7,64
Psicologia I	42	8,22
Teoria da Administração I	42	7,00
Informática I	42	7,78
TOTAL DE CARGA HORÁRIA	**336**	

2º semestre (2004)		
Disciplinas	**CH**	**Média**
Comunicação Empresarial II	42	7,55
Contabilidade II	42	7,78
Matemática II	42	7,75
Métodos e Técnicas de Pesquisa na Administração II	42	7,00
Economia II	42	7,64
Psicologia II	42	8,22
Teoria da Administração II	42	7,00
Informática II	42	7,78
TOTAL DE CARGA HORÁRIA	**336**	

3º semestre (2005)		
Disciplinas	**CH**	**Média**
Filosofia I	42	8,38
Direito Aplicado à Administração	42	8,01
Estatística I	42	7,80
Sociologia Aplicada à Administração I	42	7,20
Identificação de Pessoas e Encaminhamento	42	7,00
Teorias da Administração III	42	7,50
Organização e Gestão	42	7,91
Liderança e Desenvolvimento Organizacional	42	7,60
Atividades Complementares	(20)	Sufic.
TOTAL DE CARGA HORÁRIA	**336**	

4º semestre (2005)		
Disciplinas	**CH**	**Média**
Filosofia II	42	8,50
Legislação Trabalhista	42	8,51
Estatística II	42	7,00
Sociologia Aplicada à Administração II	42	8,56
Tendências e Cenários de Mercado	42	9,00
Teorias da Administração IV	42	9,00
Práticas de Departamento Pessoal	42	9,08
Clima e Treinamento e Desenvolvimento	42	9,25
Atividades Complementares	(20)	Sufic.
TOTAL DE CARGA HORÁRIA	**336**	

5º semestre (2006)		
Disciplinas	**CH**	**Média**
Marketing I	42	8,26
Administração Financeira e Orçamentária I	42	8,10
Administração de Sistemas de Informação I	42	7,33
Gestão do Conhecimento e Direção Estratégica	42	7,36
Comportamento Organizacional	42	6,60
Logística I	42	5,00
Tópicos Avançados em Administração	42	8,43
Administração de Produção e Operações I	42	7,62
Estágio Supervisionado	(100)	Sufic.
Atividades Complementares	(20)	Sufic.
TOTAL DE CARGA HORÁRIA	**336**	

6º semestre (2006)		
Disciplinas	**CH**	**Média**
Marketing II	42	7,56
Administração Financeira e Orçamentária II	42	7,53
Administração de Sistemas de Informação II	42	7,80
Gestão de Competências	42	6,35
Indicadores de Desempenho, Gestão e Performance	42	7,00
Logística II	42	5,00
Laboratório de Gestão Empresarial	42	7,15
Administração de Produção e Operações II	42	7,50
Estágios Supervisionados	(100)	Sufic.
Atividades Complementares	(20)	Sufic.
TOTAL DE CARGA HORÁRIA	**336**	

7º semestre (2007)			8º semestre (2007)		
Disciplinas	**CH**	**Média**	**Disciplinas**	**CH**	**Média**
Elaboração e Gerenciamento de Projetos	42	7,31	Sistema de Qualidade e Produtividade	42	6,60
Ergonomia e Segurança no Trabalho	42	7,00	Tecnologia Aplicada a Recursos Humanos	42	7,33
Ética e Cidadania	42	8,56	Saúde Mental e Gestão de Conflitos	42	9,00
Inovação e Competitividade Empresarial	42	7,73	Gestão de Pequenas e Médias Empresas	42	7,00
Planejamento Estratégico	42	7,40	Gestão Estratégica de Negócios	42	8,16
Consultoria Empresarial I	42	8,53	Consultoria Empresarial II	42	8,17
Gestão Empresarial Sustentável	42	7,80	Gestão Ambiental	42	8,00
Gestão de Serviços I	42	7,87	Gestão de Serviços II	42	7,37
Trabalho de Conclusão de Curso	(50)	8,50	Trabalho de Conclusão de Curso	(50)	8,50
Estágio Supervisionado	(50)	Sufic.	Estágio Supervisionado	(50)	Sufic.
Atividades Complementares	(20)	Sufic.	Atividades Complementares	(20)	Sufic.
TOTAL DE CARGA HORÁRIA	**336**		**TOTAL DE CARGA HORÁRIA**	**336**	

Carga Horária Total: 3.208
Colação de Grau: 20/12/2007
Expedição do Diploma: 20/12/2007

São Paulo, 20 de dezembro de 2007.

Profª Vaurene Ribeiro de Carvalho
Secretária – Reg. MEC nº 9618891 – SP
RG nº 19.303.769-5 - SP

Prof. Jabes Oliveira Moura PhD
Diretor - Reg. MEC nº 3.696/95 - SP
CRA/SP 82274 RG nº 5.223.368-2 - PR

Carnegie Evaluations LLC
315 East High Street, Bound Brook, New Jersey, 08805
Email: info@carnegieevaluations.com
Website: www.carnegieevaluations.com
Phone: (848)300-0099
Fax: (848) 300-5199

EVALUATION OF ACADEMICS

Carnegie Evaluations LLC, who specializes in the evaluation of foreign educational credentials, has prepared the following academic credential evaluation.

November 13, 2025

Name: **Mr. Jackson MARQUES DOS SANTOS**

Following is a description of Mr. Marques dos Santos's foreign degree:

Institution:	*Instituto Hoyler*
Degree:	*Titulo de Bacharel em Administracao*
Date of Award:	September 2008
Years of Study:	Four
Country:	Brazil

Academic Equivalency in the United States

BACHELOR OF BUSINESS ADMINISTRATION

Carnegie Evaluations LLC offers this evaluation, after reviewing copies of the original diploma certificates and transcripts provided. This evaluation is advisory in nature and is based on the assumption that the submitted documents are accurate. There are no apparent grounds to disbelieve the authenticity and accuracy of the documentation presented on behalf of Mr. Jackson Marques dos Santos. In addition, this evaluation is based upon standard scholarly and professional sources as referenced at the end of this document. Carnegie Evaluations LLC is not responsible for how this evaluation report will be used and is not responsible for damages resulting from such use of this report.

DISCUSSION OF MR. MARQUES DOS SANTOS'S ACADEMICS

This credential evaluation is provided upon review of the degree certificate and transcript awarded to Mr. Jackson Marques dos Santos during the course of his academic career. An analysis of Mr. Marques dos Santos's foreign educational course for the *Titulo de Bacharel em Administracao* (translated as Title of Bachelor in Business) from *Instituto Hoyler* (translated as Hoyler Institute) forms the basis for the following evaluation.

Mr. Marques dos Santos graduated with a Title of Bachelor in Business from Hoyler Institute in September 2008. Hoyler Institute is an accredited institution of higher education in Sao Paulo, Brazil. Admission to this program requires graduation from the US equivalent of high school and competitive entrance examinations. Mr. Marques dos Santos satisfactorily completed the academic course requirements for the Title of Bachelor in Business program. He majored in Business and was awarded a *Titulo de Bacharel em Administracao* from the institute.

This is a four-year undergraduate program of study that is equivalent to a bachelor's degree from an accredited institution of higher education in the United States. The academic criterion maintained by Hoyler Institute is significantly similar to those parameters upheld by any other accredited colleges and universities in the United States.

The Bachelor in Business curriculum includes advanced bachelor's-level coursework and examinations in Business Communication, Accounting, Mathematics, Research Methods and Techniques in Administration, Economics, Theory of Administration, Information Technology, Law Applied to Administration, Labor Legislation, Statistics, Sociology Applied to Administration, Personal Identification and Referral, Market Trends and Scenarios, Organization and Management, Personnel Department Practices, Leadership and Organizational Development, Organizational Climate Training and Development, Marketing, Financial and Budgetary Administration, Information Systems Management, Knowledge Management and Strategic Leadership, Competency Management, Organizational Behavior, Performance Indicators Management and Performance, Logistics, Advanced Topics in Administration, Production and Operations Management, Project Planning and Management, Quality and Productivity Systems, Ergonomics and Workplace Safety, Technology Applied to Human Resources, Innovation and Business Competitiveness, Management of Small and Medium Enterprises, Strategic Planning, Strategic Business Management, Business Consulting, and other related subjects.

Upon reviewing Mr. Marques dos Santos's academic history, it becomes apparent that Mr. Marques dos Santos has satisfied the coursework requirements, which are substantially similar and equivalent to those required for the completion of a four-year Bachelor's degree program at an accredited institution of higher education in the United States.

SUMMARY

On the basis of the academic reputation of Hoyler Institute, the nature and duration of the academic coursework, and the grades attained in the courses, it is the judgment of Carnegie Evaluations LLC that Mr. Marques dos Santos has attained the equivalent of a Bachelor of Business Administration from an accredited institution of higher education in the United States.

Carnegie Evaluations LLC represents this evaluation report to be an accurate and correct evaluation to the best of its knowledge and belief, pursuant to the requirements of the Citizenship and Immigration Services of the United States Department of Homeland Security. Carnegie Evaluations LLC does not represent that the documentation submitted to it by anyone for evaluation meets the evidentiary standards of any state or federal agency or any court. This evaluation report, as are all such reports provided by Carnegie Evaluations LLC, is advisory for the customer who requested it.

The foregoing evaluation of Mr. Marques dos Santos has been reviewed and approved by me, Dr. Zach G. Zacharia, on November 13, 2025.

Sincerely,



Zach G. Zacharia, Ph.D.
Director, Carnegie Evaluations LLC.
Associate Professor of Supply Chain Management
Director, Lehigh Center for Supply Chain Research
Lehigh University

Evaluation Resources:

1. World Higher Education Database. International Association of Universities' Worldwide Database of Higher Education Institutions, Systems and Credentials. www.whed.net.
2. AACRAO EDGE. AACRAO Electronic Database for Global Education. https://www.aacrao.org/edge
3. Central Intelligence Agency (CIA). The World Factbook. https://www.cia.gov/the-world-factbook/
4. ENIC-NARIC. European Network of Information Centres in the European Region, National Academic Recognition Information Centres in the European Union. www.enic-naric.net.

Bio: Professor Zach G. Zacharia

I am the Interim Department Chair, Decision and Technology Analytics (DATA) Department, an Associate Professor of Supply Chain Management, and Director of the Center for Supply Chain Research Lehigh in the College of Business and Economics, Lehigh University, where I teach Graduate and Undergraduate courses in Supply Chain Operations Management and Logistics and Transportation. In addition, I am also a visiting Professor at the Indian Institute of Technology (IIT) in New Delhi, India. I graduated with a B.S. in Mechanical Engineering from the University of Calgary, an MBA from the University of Alberta, and a Ph.D. in Logistics with a minor in Marketing from the University of Tennessee. My current research interests include Collaboration/Coopetition within the Supply Chain, Supplier Satisfaction, and the Physical Internet.

Before joining Academia, I worked at the University of Tennessee, Center for Transportation Research, for six years as an Associate Director. I also worked at the Department of Transportation in Alberta, Canada, for ten years as an Equipment Engineer. I am a principal in BZS Consulting, which primarily focuses on teaching Supply Chain Operations Management and evaluating collaboration and procurement strategies across firms in a supply chain.

I have developed significant international contacts and collaborations with many affiliate schools in several countries in Europe, Asia, and South America. I have evaluated numerous portfolios of international students from countries around the world and have performed in-depth assessments of how these foreign courses are equated to corresponding courses in the United States.

I have 29 refereed publications, including 2 articles in the Journal of Operations Management, 8 articles in the *Journal of Business Logistics,* and articles in *Decision Sciences*, the *Journal of Supply Chain Management, Industrial Marketing Management, International Journal of Production Research, International Journal of Production and Operations Management, International Journal of Logistics Management, Journal of Retailing, Journal of Business and Industrial Marketing, Marketing Management, Supply Chain Management Review, Journal of International Technology and Information Management*, *Journal of Vehicle Design* and *Wall Street Journal*. As a member of a Supply Chain Research Group at the University of Tennessee, I co-authored a book titled "*Supply Chain Management*" (Sage Publications, December 2000). I also contributed a chapter on logistics service providers and new product development in the book titled *Managing Innovation: The New Competitive Edge for Logistics Service Providers*, Stephan M. Wagner ed.**,** Kuehne Foundation Book Series (2007).

Among the awards that I have received is the DATA Department Service Award (2023), Staub Faculty Excellence Award (2013) for the College of Business, Lehigh University, Best Paper Finalist (2010) from the Journal of Operations Management, Best Paper Award (2007) from NARTS and Best Dissertation Proposal Award (2000) from University of Arkansas. As a member of a Supply Chain Research Group at the University of Tennessee, I coauthored a book titled Supply Chain Management (Sage Publications, December 2000).

A. Biographical Information

Zach G. Zacharia, Ph.D.
Interim Department Chair, Decision and Technology Analytics Department
Associate Professor Supply Chain Management
Director, Center for Supply Chain Management Lehigh
Supply Chain Management Program Director
Department of Management, College of Business Administration and Economics
Lehigh University, 621 Taylor Street, Bethlehem, PA, 18015
Office: (610) 758-4433, Fax: (610) 758-6941
zgz208@lehigh.edu

EDUCATION

1996 - 2001 **THE UNIVERSITY OF TENNESSEE** **Knoxville, TN**
Doctor of Philosophy in Business Administration

- Major: Logistics, Minor: Marketing
- Dissertation Title: An Analysis of the Effect of Logistics Involvement in Cross-functional Integrated New Product Development Projects (Advisor: Dr. John T. Mentzer)

1988 – 1993 **THE UNIVERSITY OF ALBERTA** **Edmonton, AB**
Master of Business Administration

1981 - 1985 **THE UNIVERSITY OF CALGARY** **Calgary, AB**
Bachelor of Science, Mechanical Engineering

1980 - 1981 **RED DEER COLLGE** **Red Deer, AB**
Bachelor of Science

1979 – 1980 **THE UNIVERSITY OF ALBERTA** **Edmonton, AB**
Bachelor of Science

WORK EXPERIENCE SUMMARY

2016 – Present, Director, Center for Supply Chain Research Lehigh
2013 – Present, Associate Professor – Lehigh University
2008 – 2013 Assistant Professor – Lehigh University
2001 – 2008 Assistant Professor - Texas Christian University
1999 – 2001 Associate Director – Transportation Center, University of Tennessee
1997 – 1999 Assistant Director - Transportation Center, University of Tennessee
1995 – 1997 Senior Research Associate – University of Tennessee
1989 – 1995 Research Engineer – R&D Branch, Alberta Transportation & Utilities
1985 – 1989 Equipment Engineer – Alberta Transportation & Utilities

CONSULTING PROJECTS, EXECUTIVE EDUCATION

2023 Ecofriendly Behavior on Personal Transportation, AFIT, Dalton
2020 Financial Flow in SC, DiCentral, Houston

2020	Expert Witness – Real Estate Company, Bethlehem
2020	Lehigh University, Executive Education, Bethlehem
2019	Lehigh University, Executive Education, Bethlehem
2019	SC Collaboration in Drop Ship, DiCentral, Houston
2018	Coopetition in the Defense Industry, AFIT, Dayton
2018	IIT New Delhi, Executive Education, Delhi, India
2017	Lehigh University, Executive Education, Bethlehem
2016	IIT Madras, Global Initiative of Academic Networks, Chennai, India
2015	Morrison Executive Education, Santo Domingo, Dominican Republic
2014	CSCMP Executive Seminar, Bogota, Columbia
2012	Supply Chain Management Simulation, WAM Systems, Philadelphia
2010	Supply Chain Management Overview, Universidad de Piura, Peru
2007	Procurement of Capability Guidelines, Lockheed Martin Aeronautics
2002	Truck Safety Recommendations, University of Tennessee

B. Publications and Creative Activities

EDITORIAL ROLES (6)

- Senior Associate Editor- *International Journal of Logistics Management (2018-current)*
- Senior Editor- *Journal of Business Logistics (2016- current)*
- Special Issue Editor-(Physical Internet) - *Journal of Business Logistics (2018-2020)*
- Special Issue Editor- (Inter-Disciplinary Research) *Journal of Business Logistics (2014-2015)*
- Editorial Board Member – *Journal of Operations Management*
- Editorial Board Member –*Transportation Journal*
- Editorial Board Member – *Journal of Supply Chain Management*

DISSERTATION COMMITTEE MEMBER (2)

- Michael Plasch - *Supply Chain Collaboration - Investigating Motives, Drivers And Success Factors* – Johannes Kepler University Linz, Austria, 2021
- Kimberly K. Whitehead – *It's A Matter Of Give And Take: Exploring The Role Of Knowledge Transfer Within Supply Chain Collaboration* - University of Texas at Arlington, USA, 2014

BOOK CHAPTERS (5)

- **Zacharia, Zach G**. "Is there a role for Logistics Service Providers in New Product Development?" *Managing Innovation: The New Competitive Edge for Logistics Service Providers*, Stephan M. Wagner ed., Kuehne Foundation Book Series. Ch 7, 2008.
- Mentzer, John T., William J. DeWitt, James S. Keebler, Soonhong Min, Nancy W. Nix, Carlo D. Smith, and **Zach G. Zacharia**, "What is Supply Chain Management" *Supply Chain Management*, Thousand Oaks, CA: Sage Publications, Ch.1, 2000.
- **Zacharia, Zach G**., "R&D and New Product Development in Supply Chain Management" *Supply Chain Management*, John T. Mentzer ed.**,** Thousand Oaks, CA: Sage Publications, Ch.6, 2000.
- **Zacharia, Zach G**., "The Evolution and Growth of Production in Supply Chain Management" *Supply Chain Management*, John T. Mentzer ed., Thousand Oaks, CA: Sage Publications, Ch.8, 2000.
- **Zacharia, Zach G**, "The Evolution and Growth of Information Systems in Supply Chain Management" *Supply Chain Management*, John T. Mentzer ed., Thousand Oaks, CA: Sage Publications, Ch.11, 2000.

REFEREED PUBLICATIONS (29)

29. Varun Jain, Usha Mohan, Zach G. Zacharia, Nada R. Sanders (2022) "Improving patient satisfaction and outpatient diagnostic center efficiency using novel online real-time scheduling" *Operations Research for Health Care*, 32, 1-17, 100338

28. Saif Mir, Misty Blessley, **Zach Zacharia**, John Aloysius (2022) "Mending Fences in the Buyer-Supplier Relationship: The Role of Justice in Relationship Restoration" *Journal of Supply Chain Management*. Vol. 58, No. 3, 23 – 46.

27. Dev, Navin; Ravi Shankar; **Zach Zacharia**, Sanjeev Swami, (2021) "Supply chain resilience for managing the ripple effect in Industry 4.0 for green product diffusion" *International Journal of Physical Distribution & Logistics Management* Vol. 51 No. 8, 897-930.

26. Ballot, Eric, Benoit Montreuil, **Zach G. Zacharia**, (2021) "Physical Internet: First Results and Next Challenges" *Journal of Business Logistics* Vol 42 No. 1, 1 – 7.

25. Treiblmaier, Horst, Kristijan Mirkovski, Paul B. Lowry, **Zach G. Zacharia**, (2020) "The Physical Internet as a New Supply Chain Paradigm: A Systematic

Literature Review and a Comprehensive Framework" *International Journal of Logistics Management* Vol. 31 No. 2, 239-287.

24. **Zach G. Zacharia**, Michael Plasch, Usha Mohan, Markus Gerschberger (2019) "The Emerging Role of Coopetition Within Inter-Firm Relationships" *International Journal of Logistics Management* Vol. 30, No. 2, 414-437.

23. Soonhong Min, **Zach G. Zacharia**, Carlo D. Smith (2019) "Defining Supply Chain Management: In the Past, Present and Future" *Journal of Business Logistics* Vol. 40 No.1, 44-55.

22. Kimberly Whitehead, **Zach Zacharia**, Edmund Prater (2019) "Investigating the Role of Knowledge Transfer in Supply Chain Collaboration" *International Journal of Logistics Management"* Vol. 30, No. 1, 284-302.

21. Misty Blessly, Saif Mir, **Zach G. Zacharia**, John Aloysius (2018) "Breaching Relational Obligations In A Buyer-Supplier Relationship: Feelings Of Violation, Fairness Perceptions And Supplier Switching" *Industrial Marketing Management* Vol. 74, Oct, 215-226.

20. Faraz, Alireza, Nada R. Sanders, **Zach G. Zacharia**, Markus Gerschberger (2018) "Monitoring Type B Buyer-Supplier Relationships" *International Journal of Production Research* Vol. 56, No. 18, 6225-6239.

19. Whitehead, Kimberly, **Zach G. Zacharia**, Edmund Prater, (2016) "Absorptive Capacity Versus Distributive Capability: The Asymmetry of Knowledge Transfer" *International Journal of Operations and Production Management* Vol. 36, No 10, 1308-1332.

18. Nada R. Sanders, Brian R. Fugate, **Zach G. Zacharia**, (2016) "Interdisciplinary Research In SCM: Through the Lens of The Behavioral Theory of The Firm" *Journal of Business Logistics* Vol. 37, No 2, 107-112.

17. Nancy W. Nix, **Zach G. Zacharia,** (2014) "The Impact of Collaborative Engagement on Knowledge and Performance Gains in Episodic Collaborations" *International Journal of Logistics Management* Vol. 25, No 2, 245-269.

16. **Zach G. Zacharia,** Nada R. Sanders, Brian R. Fugate (2014) "The Evolving Role of Disciplines Within Supply Chain Management" *Journal of Supply Chain Management* Vol. 50, No 1, 73-88.

15. Nada R. Sanders, **Zach G. Zacharia**, Brian R. Fugate (2013) "The Interdisciplinary Future of Supply Chain Management Research" *Decision Sciences* Vol. 44, No. 3, 413-429.

14. Geoffrey T. Stewart, **Zach G. Zacharia,** Andrew B. Artis (2012) "Leveraging Relationship Orientation and its Impact on Relationship Outcomes" *Journal of Business and Industrial Marketing,* Vol. 27, No. 8, 644-658.

13. **Zach G. Zacharia,** Nancy W. Nix, Robert F. Lusch (2011) "Capabilities that Enhance Outcomes of an Episodic Supply Chain Collaboration" *Journal of Operations Management,* Vol. 29, No. 6, 591-603.

12. **Zach G. Zacharia,** Nada R. Sanders, Nancy W. Nix (2011) "The Emerging Role of the Third-Party Logistics Provider (3PL) as a Supply Chain Orchestrator" *Journal of Business Logistics*, Vol. 32, No. 1, 40-54.

11. Danny Lanier, Jr., William F. Wempe, **Zach G. Zacharia**, (2010) "Concentrated Supply Chain Membership and Financial Performance: Chain- and Firm-Level Perspectives" *Journal of Operations Management,* Vol.28, No.1, 1-16.

10. **Zach G. Zacharia**, Chad W. Autry, David S. Preston, Charles W. Lamb, (2009) "IT Alignment with Business Strategies in a Healthcare Organizations: An Empirical Analysis" *Journal of International Technology and Information Management,* Vol. 18, No. 3/4, 477-494.

9. **Zach G. Zacharia,** Nancy W. Nix and Robert F. Lusch, (2009) "An Analysis of Supply Chain Collaborations and Their Effect on Performance" *Journal of Business Logistics*, Vol. 30, No. 2, 101-123.

8. Chad W. Autry, **Zach G. Zacharia** and Charles W. Lamb, (2008) "A Logistics Strategy Taxonomy" *Journal of Business Logistics,* Vol. 29. No. 2, 53-74.

7. Nancy W. Nix, Robert F. Lusch, **Zach G. Zacharia**, and Wesley R. Bridges, (2008) "Competent Collaborations" *Marketing Management*, Vol. 17, No. 2, 18-24.

6. **Zach G. Zacharia** and John T. Mentzer (2007) "The Role of Logistics in New Product Development," *Journal of Business Logistics*, Vol. 28, No. 1, 83-110.

    a. Reprinted in:
    b. *Logistique and Management,* Vol. 16, No. 1, 35-53, (2008).

5. **Zach G. Zacharia** and John T. Mentzer (2004) "Logistics Salience In A Changing Environment," *Journal of Business Logistics*, Vol. 25, No. 1, 187-210.

    a. Reprinted in:
    b. *The ICFAI Journal of Supply Chain Management,* Vol. 3, No. 1, 53-72, (2006).

4. Mentzer, John T., William DeWitt, James S. Keebler, Soonhong Min, Nancy W. Nix, Carlo D. Smith, **Zach G. Zacharia** (2001) "Defining Supply Chain Management," *Journal of Business Logistics*, Vol. 22, No. 2, 1-25.

    c. Reprinted in:
    d. *Logistique and Management,* Vol. 9, No. 2, 3-19, (2001).

3. **Zacharia, Zach G**., John E. Tidwell and Stephen H. Richards (2001) "An Overview of Truck and Bus Safety:1999 Knoxville Symposium," *Journal of Vehicle Design*, Vol. 26, No. 4, 442-453.

2. Mentzer, John T., Min Soonhong and **Zach G. Zacharia** (2000) "The Nature of Interfirm Partnering in Supply Chain Management," *Journal of Retailing*, Winter, Vol. 76, Issue 4, 549-568.

1. **Zacharia, Zach G**. and Bart Jennings (1998) "The Use of Active Participation and Group Competition to Facilitate Training and Technology Transfer for Adult Learners," *Transportation Research Record,* No. 1637, 13-18.

PAPERS UNDER REVIEW (2)

- Zach G. Zacharia, Scott C. Ellis, Saif Mir, Robert J. Trent - "Gaining Advantage Through Social Exchange: How and Under What Conditions" (Revise and Resubmit)

- **Saif Mir, Timothy W. Breitbach, Zach G. Zacharia, Benjamin T. Hazen "Supplier Cultivation: An Accelerator Approach to Ecosystem Innovation" (Under Review)**

NON - REFEREED PUBLICATIONS (5)

5. **Zach G. Zacharia** (2020), What Every CFO Needs to Know about Supply Chains

4. **Zach G. Zacharia** (2019), Supply Chain Collaboration in Transformative Vertical Industries (Implications of Omnichannel and Drop Shipping)

3. Robert J. Trent, **Zach G. Zacharia,** (2012) "The Wisdom of Becoming a Preferred Customer," *Supply Chain Management Review* Vol. 16, No. 6, 10-18.

2. Nix, W. Nancy, Robert F. Lusch, **Zach G. Zacharia**, and Wesley R. Bridges, (2007) "The Hand That Feeds You – What Makes Some Collaborations with Suppliers Succeed – When So Many Fail?" *The Journal Report- Business Insight* (A Joint Venture with MIT *Sloan Management Review* and *Wall Street Journal*), Dow Jones and Company

1. **Zacharia, Zach G**. (1994) "Expert System Simplifies Bridge Paint Maintenance Programs," *Materials Performance,* June, 25 - 28.

CONFERENCE PROCEEDINGS (18)

18. **Zach Zacharia**, Timothy Breitbach, Ben Hazen, Saif Mir (2019) "Utilizing Accelerator Programs for adopting Innovations to Encourage the Adoption" *CSCMP Conference,* Anaheim, CA, September 15.
17. **Zach Zacharia**, Timothy Breitbach, Ben Hazen, Saif Mir (2018) "Utilizing Accelerator Programs to Encourage the Adoption of New Innovations in Large Organizations" *DSI Conference,* Chicago, IL, November 17.
16. Robert Weidmer, **Zach Zacharia**, (2018) "Competing Governance Mechanisms in Buyer-Supplier Relationships" *DSI Conference,* Chicago, IL, November 16.
15. **Zach Zacharia**, Michael Plasch, Usha Mohan, Markus Gerschberger (2017) "The Role of Coopetition in Buyer Supplier Relationships" *DSI Conference,* Washington, DC, November 18.
14. **Zach Zacharia**, Michael Plasch, Usha Mohan, Markus Gerschberger (2017) "Understanding the Antecedents and Outcomes of Coopetition" *CSCMP Academic Research Conference,* Atlanta, Georgia, September 24.
13. **Zach Zacharia**, Michael Plasch, Usha Mohan, Markus Gerschberger (2017) "The Evolving Role of Coopetition within the Supply Chain" *CSCMP European Research Seminar,* Barcelona, Spain, May 19.
12. Gouda, Sirish, **Zach Zacharia**, Haritha Saranga (2016) "Linking New Forms of Work Organization and External Integration: Mediating role of cross functional collaboration" *DSI Conference,* Austin, Texas, November 21.
11. Blessley, Misty, Saif Mir, **Zacharia, Zach G.,** John Aloysius (2016) "The role of apologies following transgressions in buyer-supplier relationships." *CSCMP Educator Conference,* Orlando, Florida, September 25.
10. Blessley, Misty, Saif Mir, **Zacharia, Zach G.,** John Aloysius (2016) "The role of transactional and relational psychological contract breach in supplier switching behavior." *CSCMP European Research Seminar,* Vienna, Austria, May 13.
9. Blessley, Misty, Saif Mir, **Zacharia, Zach G.,** John Aloysius (2015) "Should I stay or should I go? The role of transactional and relational psychological contract breach in supplier switching behavior." *CSCMP Educator Conference,* San Diego, California, September 27.
8. **Zacharia, Zach G.,** Nancy W. Nix and Robert F. Lusch (2007) "Supply Chain Collaborations: Project Performance and Business Performance" *18th North American Teaching and Research Conference,* Tempe, Arizona, March 29-31.

7. **Zacharia, Zach G.** (2005) "Team Based Learning in MBA and Undergraduate Supply Chain Management Classes" *16th North American Teaching and Research Conference,* Tempe, Arizona, March 17-19.

6. Nix, Nancy W., **Zach G. Zacharia** and Robert F. Lusch (2005) "Keys to Effective Supply Chain Collaboration" *16th North American Teaching and Research Conference,* Tempe, Arizona, March 17-19.

5. **Zacharia, Zach G.** and Marc E. Ruzicka (2003) "Experiential Learning: Live Business Cases in MBA Supply Management and Logistics Classes" *14th North American Teaching and Research Conference,* Tempe, Arizona , March 21- 23.

4. **Zacharia**, **Zach G** (2000) "The Evolution and Growth of Production in the Supply Chain", *Society for Marketing Advances Conference*, Orlando, Florida, November 8-10.

3. **Zacharia, Zach G**., John E. Tidwell and Stephen H. Richards (2000) "An Overview of Truck and Bus Safety:1999 Knoxville Symposium," *4th International Fatigue Management Conference*, Perth, Australia, March 19-2.

2. **Zacharia, Zach G**. and Bart Jennings (1998), "The Use of Active Participation and Group Competition to Facilitate Training and Technology Transfer for Adult Learners," *Transportation Research Board Conference Proceedings,* Washington, District of Columbia, January 4-8.

1. **Zacharia, Zach G**. (1992), "Bridge Paint Expert Systems", *Second International Organization for Economic Cooperation and Development (OECD) Conference on Knowledge Based Expert Systems in Transportation*, Montreal, Canada, April 3-7.

CONFERENCE PRESENTATIONS (3)

3. **Zach Zacharia**, (2022) "Identifying and Ranking Supply Chain Risks" *WDSI Conference,* Waikoloa, HI, April 7.

2. Annibal Sodero**, Zach Zacharia**, (2022) "Antecedents and outcomes of drop-shipping adoption in the retail supply chain" Euroama Conference, Berlin, July 3rd

1. Saif Mir**, Zach Zacharia**, (2022) "Risks in Procurement and Sourcing" DSI Conference Houston, November 21

PODCASTS (5)

- **Zacharia, Zach G**. (2021), "Red Flags in the Supply Chain" https://business.lehigh.edu/blog/2021/zach-zacharia-red-flags-supply-chain (July 2nd)

- **Zacharia, Zach G**. (2021), "Red Flags in the Supply Chain" https://business.lehigh.edu/blog/2021/zach-zacharia-red-flags-supply-chain (July 2nd)

- **Zacharia, Zach G**. (2021), "Disruptive New Paradigm of the Physical Internet" https://business.lehigh.edu/blog/2021/zach-zacharia-disruptive-new-paradigm-physical-internet (June 3rd)

- **Zacharia, Zach G**. (2018), "Dealing with Disruptive Innovations in the Supply Chain" (https://cbe.lehigh.edu/blog/posts/dealing-disruptive-innovations-supply-chain) (October 24)

- **Zacharia, Zach G**. (2017), "Drop Shipping: A New Opportunity for Retailers and Suppliers" (https://cbe.lehigh.edu/blog/posts/drop-shipping-new-opportunity-retailers-and-suppliers) December 11

- **Zacharia, Zach G**. (2017), "What You Need to Know About the Physical Internet" (https://cbe.lehigh.edu/blog/posts/what-you-need-know-about-physical-internet (March 14) (Ranked 4th in Google Search for Physical Internet)

WORKING PAPERS (6)

- Zach Zacharia, Michael Plasch, Markus Gerschberger "Explorative and exploitative motives for coopetition" *Target: International Journal of Production Economics*

- Zach Zacharia, Annibal Sodero "Drop Shipping and its Effects on the New E-Commerce Retail Paradigm" *Target: Journal of Operations Management"*

- Zach Zacharia, Robert Wiedmer, Kimberly Whitehead "Competing Governance Mechanisms in Buyer-Supplier Relationships" *Target: Journal of Operations Management*

- Zach Zacharia, Cedric Heuchenne, Nada Sanders, Faraz, Alireza "Comparison of populations based on binary characteristics in the presence of non-response" *Target: Production Operations Management Journal*

- Zach Zacharia, Gopal Kumar "Environmental and social performance leads to supply chain performance? An analysis in context of sustainable collaboration" *Target: Supply Chain Management: An International Journal*

- Zach Zacharia, Benjamin Hazen, Timothy Breitbach, Saif Mir "How Accelerator Programs Facilitate Innovation Adoption in Large Organizations" *Target: Journal of Operations Management*

27.Honors and Awards (25)

2023	DATA Department Service Award, Lehigh University
2018	Teaching Innovation Grant, CBE, Lehigh University
2018	Senior Associate Editor for *International Journal of Logistics Management*
2017	Best Reviewer Award *Journal of Business Logistics*
2016	Editor for *Journal of Business Logistics News*
2016	Associate Editor for *Production Operations Management* Special Issue
2015	Associate Editor for *Journal of Business Logistics*
2015	Member of the *Transportation Journal* Editorial Board
2013	Robert and Christine Staub Faculty Excellence Award
2012	Member of the *Journal of Supply Chain Management* Editorial Board
2011	Best Paper Finalist for 2010 (*Journal of Operations Management*)
2011	Best Paper Award (European DSI Conference)
2010-2011	Council of Supply Chain Management Professional Educator Conference Chair
2010	Member of the *Journal of Operations Management* Editorial Board
2010	Member of the *Journal of Business Logistics* Editorial Board
2009-2010	Supply Chain Management Educator Conference Proceedings Editor
2007-2008	Council of Supply Chain Management Case Editor
2007	Best Paper Award (*NARTS-ISM Conference*)
2006	Tied for highest SPOT (Student Perception of Teaching) score
2005	Highest SPOT (Student Perception of Teaching) in INSC department
2000	Doctoral Dissertation Proposal Award (*University of Arkansas)*
2000	Outstanding Student Paper Award *(Society for Marketing Advances)*
2000	Finalist *(ISBM Doctoral Dissertation Award)*
2000	Scholarly Research Grant Recipient *(University of Tennessee)*
1999, 1997	Fellow *(Council of Logistics Management Doctoral Symposium)*

28. Research Funding (16)

2019	DiCentral – SCM and Financial Flow Research $20,000
2019	Ben Franklin Technology Partners and ESPI $20,000
2018	AFIT – Managing Customer Driven Coopettittion Projects $25,000
2017	DiCentral – Drop Shipment Research $20,000
2014-2015	International Travel Grant - One of 5 recipients selected across the entire University $5000
2011	Faculty Research Grant – Lehigh University (Principal Investigator), Catherine Ridings (Lehigh University) " Does investment in Supply Chain Management and Information Technology provide value for micro firms?" $4500
2009	Summer Research Grant – College of Business and Economics, Lehigh University (Principal Investigator), Nada R. Sanders (Lehigh University, Brian S. Fugate (Colorado State University) *"State of Supply Chain Management: A Visionary Perspective"* $3000
2002-2007	Charles Tandy American Enterprise Center Faculty Research Award *(Texas Christian University)* ($10,000/yr)
2003, 05, 07	Junior Faculty Research Grant *(Institute of Supply Management)* ($750/yr)
2005	Research Center for Teaching Excellence, Faculty Fellow Grant *(Texas Christian University)* ($2500)

F. Scholarly Presentations (79)

- **Zacharia, Zach G.,** "*Supply Chain Collaboration in Transformative Vertical Industries"* Retail Value Chain Federation Conference, Teaneck, New Jersey, May 6, 2019

- **Zacharia, Zach G.,** "*Theoretical and Conceptual Foundations of Supply Chain Management"* PhD Research Seminar, Indian Institute of Technology, New Delhi, January India, January 25, 2018.

- **Zach Zacharia**, Michael Plasch, Usha Mohan, Markus Gerschberger "*The Role of Coopetition in Buyer Supplier Relationships*" *DSI Conference*, Washington, DC, November 18, 2017

- **Zacharia, Zach G.,** "*Utilizing Drop Shipment to Improve Your Bottom Line"* Retail Value Chain Federation Conference, Phoenix, Arizona, November 6, 2017

- **Zach Zacharia**, Michael Plasch, Usha Mohan, Markus Gerschberger "*Understanding the Antecedents and Outcomes of Coopetition*" *CSCMP Academic Research Conference,* Atlanta, Georgia, September 24, 2017

- **Zacharia, Zach G.,** "*Complexity in Supply Chain Management"* PhD Research Seminar, Atlanta, Georgia, September 23, 2017

- **Zacharia, Zach G.,** "*Coopetition Research"* PhD Research Seminar, Atlanta, September 22, 2017

- **Zacharia, Zach G.,** "*Buyer Supplier Relationships"* PhD Research Seminar, Atlanta, September 21, 2017

- **Zacharia, Zach G.,** "*Publishing Research in American Supply Chain Journals"* Indian Institute of Technology, New Delhi, India, July 21, 2017.

- **Zacharia, Zach G.,** "*Transforming Traditional Networks Through the Use of Collaborative Environments"* Supply Chain Leaders in Action Conference, Naples, Florida June 5, 2017

- **Zach Zacharia**, Michael Plasch, Usha Mohan, Markus Gerschberger (2017) "*The Evolving Role of Coopetition within the Supply Chain*" CSCMP European Research Seminar, Barcelona, Spain, May 19.

- **Zacharia, Zach G.,** "*Logistics PhD programs in the US panel session"* Logistics Doctoral Symposium, Auburn University, Auburn, February 24, 2017.

- **Zacharia, Zach G.,** "*A Research Journey"* Indian Institute of Technology, Trichy, India, February 6, 2017.

- **Zacharia, Zach G.,** "*Orientation and Firm Infrastructure"* PhD Research Seminar, Logistikum, University of Applied Sciences, Steyr, Austria January 12, 2017

- **Zacharia, Zach G.,** "*Strategy"* PhD Research Seminar, Logistikum, University of Applied Sciences, Steyr, Austria January 11, 2017

- **Zacharia, Zach G.,** "*Conceptual Foundations from Procurement and Operations"* PhD Research Seminar, Logistikum, University of Applied Sciences, Steyr, Austria January 10, 2017

- **Zacharia, Zach G.,** "*Conceptual Foundations from Marketing and Logistics"* PhD Research Seminar, Logistikum, University of Applied Sciences, Steyr, Austria January 9, 2017

- **Zacharia, Zach G.,** "*Theoretical and Conceptual Foundations of Supply Chain Management"* PhD Research Seminar, Logistikum, University of Applied Sciences, Steyr, Austria August 10, 2016

- **Zacharia, Zach G.,** "*Philosophy of Science"* PhD Research Seminar, Logistikum, University of Applied Sciences, Steyr, Austria August 9, 2016

- **Zacharia, Zach G.,** " *Conceptual Foundations of Marketing"* PhD Research Seminar, Logistikum, University of Applied Sciences, Steyr, Austria August 8, 2016

- **Zacharia, Zach G.,** " *Conceptual Foundations of Operations"* PhD Research Seminar, Logistikum, University of Applied Sciences, Steyr, Austria August 10, 2016

- Gouda, Sirish, **Zach Zacharia**, Haritha Saranga (2016) "Linking New Forms of Work Organization and External Integration: Mediating role of cross functional collaboration" *DSI Conference,* Austin, Texas, November 21.

- Blessley, Misty, Saif Mir, **Zacharia, Zach G.,** John Aloysius (2016) "The role of apologies following transgressions in buyer-supplier relationships." *CSCMP Educator Conference,* Orlando, Florida, September 25.

- **Zacharia, Zach G.,** " *Increasing Efficiency and Reducing Cost within a Supply Chain"* Indian Institute of Technology, Madras, India, June 13 2016.

- Blessley, Misty, Saif Mir, **Zacharia, Zach G.,** John Aloysius (2016) "The role of transactional and relational psychological contract breach in supplier switching behavior." *CSCMP European Research Seminar,* Vienna, Austria, May 13.

- Bleasley, Misty, Mir, Saif, **Zacharia, Zach G.,** Aloysius, John " *Should I stay or should I go? The role of transactional and relational psychological contract breach in supplier switching behavior"* Council of Supply Chain Management Educator Conference, San Diego, September 27, 2015.

- **Zacharia, Zach G.,** "*Qualitative and Quantitative Research Paths in SCM"* , University of Arkansas, Fayetteville, Arkansas Feb 27, 2015.

- **Zacharia, Zach G.,** "*Publishing Research in American Supply Chain Journals"* Indian Institute of Management, Bangalore, India, January 13, 2015.

- **Zacharia, Zach G.,** Scott Ellis, Robert J. Trent "*Gaining Advantage Through Social Exchange: How and Under What Conditions"* Production Operation Management Conference, Atlanta, Georgia, May 10, 2014.

- Ellis, Scott, **Zacharia, Zach G.,** Jae-Young Oh "*The Role of Functional Congruence in Cross-Functional and Inter-organizational Collaboration"* Decision Sciences Institute Conference, Baltimore, Maryland, November 19, 2013.

- **Zacharia, Zach G.,** "*Supply Chain Management, Collaboration and their Role Across Businesses and People"* Congress of Latin American Engineering Students, Lima, Peru, October 29, 2013.

- **Zacharia, Zach G.,** Scott Ellis, "*Antecedents to Buyer-Engineer Knowledge Transfer"* Production Operation Management Conference, Denver, Colorado, May 4, 2013.

- **Zacharia, Zach G.,** "*Balancing Effective Research and Teaching"* – Invited Panel Presentation, Council of Supply Chain Management Doctoral Symposium, Atlanta, Georgia, October 1, 2012.

- **Zacharia, Zach G.,** "*What are some of the Factors That Affect the Relationship Between Cross Functional New Product Development and New Product Project Performance?"* Decision Sciences Institute Conference, Boston, Massachusetts, November 22, 2011.

- **Zacharia, Zach G.,** "*Supply Chain Security - An Academic Discussion and Future Research"* Invited Panel Presentation, Decision Sciences Institute Conference, Boston, Massachusetts, November 21, 2011.

- **Zacharia, Zach G.,** "*Conference Chairperson Opening Remarks"* Council of Supply Chain Management Educator Conference, Philadelphia, Pennsylvania, October 2, 2011.

- **Zacharia, Zach G.,** William F. Wempe William and Danny Lanier, Jr. "*Concentrated Supply Chain Membership and Financial Performance: Chain- and Firm-Level Perspectives"* Academy of Management Conference, San Antonio, Texas, August 12 – August 17, 2011.

- **Zacharia, Zach G.** and Catherine M. Ridings *"Does investment in Supply Chain Management and Information Technology provide value for micro firms?"* Production Operations Management Conference, Reno, Nevada, April 28-May 1, 2011.

- **Zacharia, Zach G.** and Robert J. Trent *"Supplier Satisfaction and Innovation Sharing"* Decision Sciences Institute Conference, San Diego, November 20-23, 2010.

- Christoph Bode, Stephan M. Wagner and **Zacharia, Zach G.,** "*The Effect of Cooperation, Supplier Development, and Relationship-Specific Investments on Suppliers' Willingness to Share Innovation"* Decision Sciences Institute Conference, San Diego, November 20-23, 2010.

- **Zacharia, Zach G.** *"Personal Career Development in Academia: What now and How"* Council of Supply Chain Management Professionals Doctoral Symposium, San Diego, September 27, 2010.

- **Zacharia, Zach G.** *"Supply Chain Management Overview"* Executive MBA Program, Universidad de Piura, Piura, Peru, June 12, 2010.

- **Zacharia, Zach G.** *"Supply Chain Management Collaboration Strategies"* CSCMP Roundtable, Lima, Peru, June 11, 2010.

- **Zacharia, Zach G.** and John R. MacDonald *"Are differences in Risk Planning Significant?"* Production and Operations Management Conference, Vancouver, Canada, May 7-10, 2010.

- **Zacharia, Zach G.** and Robert J. Trent *"Supplier Satisfaction – How does it matter?"* Production and Operations Management Conference, Vancouver, Canada, May 7-10, 2010.

- **Zacharia, Zach G.,** Nancy W. Nix, and Robert F. Lusch *"The Moderating Role of Absorptive Capability and Collaborative Communication in Organizational Learning"* 19th *North American Teaching and Research Conference*, Tempe, Arizona, March 11-12, 2010

- **Zacharia, Zach G.** and John R. MacDonald *"Risk Planning: Is it of Value"* Decision Sciences Institute Conference, New Orleans, LA, November 17, 2009.

- **Zacharia, Zach G.** *"When Should New Product Development Managers Consider Distribution Logistics"* Decision Sciences Institute Conference, New Orleans, LA, November 15, 2009.

- John R. MacDonald and **Zacharia, Zach G.** *"Risk and Disruption Management: The Impact of Behavioral Interference"* Behavioral Operations Conference, Syracuse, NY, June 26, 2009.

- **Zacharia, Zach G.,** Nancy W. Nix, and Robert F. Lusch *"The Moderating Role of Absorptive Capability and Collaborative Communication in Organizational Learning"* Production and Operation Management Conference, Orlando, FL, May 2, 2009.

- **Zacharia, Zach G.,** Nancy W. Nix and Robert F. Lusch "Supply Chain Collaborations: Project Performance and Business Performance" *18th North American Teaching and Research Conference,* Tempe, Arizona, March 29-31. (2007)

- **Zacharia, Zach G.,** Nancy W. Nix, and Robert F. Lusch *"The Moderating Role of Absorptive Capability and Collaborative Communication in Organizational Learning"* University of Tennessee, Knoxville, TN, November 7, 2006.

- **Zacharia, Zach G.,** Nancy W. Nix, and Robert F. Lusch *"The Moderating Role of Absorptive Capability and Collaborative Communication in Knowledge Acquisition"* DFWCSMP Roundtable meeting, Dallas, TX, October 12, 2006.

- **Zacharia, Zach G.,** *"Early Supplier Involvement"* National Council for Advanced Manufacturing, Washington, MD, June 7, 2006.

- **Zacharia, Zach G.,** Nancy W. Nix, and Robert F. Lusch *"Keys to Effective Supply Chain Collaboration and Knowledge Acquisition"* National Council for Advanced Manufacturing, Washington, MD, June 7, 2006.

- **Zacharia, Zach G.,** Nancy W. Nix, and Robert F. Lusch *"Keys to Effective Supply Chain Collaboration"* Supplier Network Working Group Meeting, Fort Worth, TX March 16, 2006.

- **Zacharia, Zach G.,** Nancy W. Nix, and Robert F. Lusch *"Keys to Effective Supply Chain Collaboration"* Institute of Supply Management Group Meeting, Fort Worth, Texas, January 3, 2006.

- **Zacharia, Zach G.** "Team Based Learning in MBA and Undergraduate Supply Chain Management Classes" *16th North American Teaching and Research Conference,* Tempe, Arizona, March 17-19. (2005)

- Nix, Nancy W., **Zach G. Zacharia** and Robert F. Lusch "Keys to Effective Supply Chain Collaboration" *16th North American Teaching and Research Conference,* Tempe, Arizona, March 17-19. (2005)

- **Zacharia, Zach G.,** *"Education Strategies"* Council of Logistics Roundtable Leadership Forum, Chicago, Illinois, June 11-12, 2004.
- **Zacharia, Zach G.,** and Nancy W. Nix, *"Supply Chain Collaboration – The role of a 3PL intermediary"* Society of Marketing Advances, New Orleans, Louisiana, November 6 - 8, 2003.
- **Zacharia, Zach G.,** Nancy W. Nix, and Robert F. Lusch *"Collaboration Effectiveness in the Supply Chain: A Knowledge and Capabilities Based Approach"* American Marketing Faculty Consortium, Dallas, Texas, October 30-November 2, 2003.

- **Zacharia, Zach G.,** *"What does it mean to be an education officer in your roundtable?"* Council of Logistics Roundtable Leadership Forum, Chicago, Illinois, June 6-7, 2003.

- Nix, Nancy W. and **Zach G. Zacharia**, Track Chairs "*Going Beyond the Hype: Getting and Measuring the Value from your Supply Chain Initiatives"* Council of Logistics Management Conference, Chicago, Illinois, September 23-27, 2003.
- **Zach G. Zacharia,** *Top 10 Truck Safety Recommendations*, Federal Motor Carrier Safety Administration, Washington, District of Columbia, October 16, 2002.
- **Zach G. Zacharia,** *Logistics Involvement in New Product Development*, University of Arkansas, Fayetteville, Arkansas, September 18, 2002.
- **Zach G. Zacharia,** "Supply and Value Chain Certificate Program" presented at the Supply and Value Chain Conference, Ft. Worth, Texas, February 8, 2002.
- **Zach G. Zacharia,** "*Tennessee Transportation Assistance Program*" presented at the Region 4 LTAP conference, St. Petersburg, Florida, May 16, 2001.
- **Zach G. Zacharia,** "*The Evolution and Growth of Production in the Supply Chain*", *2000 Society for Marketing Advances Conference*, Orlando, Florida, November 8. 2000.
- **Zach G. Zacharia,** and Soonhong Min "*The Nature of Interfirm Partnering in Supply Chain Management*" presented at American Marketing Association, Chicago, Illinois, August 5, 2000.
- **Zach G. Zacharia,** *"Searching the Internet and Web Page Design"* presented at University of Tennessee, Knoxville, Tennessee, April 17, 2000.
- **Zach G. Zacharia,** *"An Overview of Truck and Bus Safety: 1999 Knoxville Symposium* presented at the 4th International Fatigue Management Conference, Perth, Australia, March 19 – 22, 2000.
- **Zach G. Zacharia,** "*Traffic Safety and the Internet*" presented at the Governor Highway Safety Conference, Memphis, Tennessee, July 12-14, 1999.
- **Zach G. Zacharia,** "*Tennessee Transportation Assistance Program*" presented at the Asphalt Emulsion Users Conference, Nashville, Tennessee, November 19, 1998.
- **Zach G. Zacharia** and Barton R. Jennings "*The Use of Active Participation and Group Competition to Facilitate Training and Technology Transfer for Adult Learners*" Transportation Research Board Conference, Washington, District of Columbia, January 10-14, 1998.
- **Zach G. Zacharia,** "*Training Requirements for Local Governments*" presented at the National Transportation Training Conference, Reno, Nevada, October 7-9, 1997.
- **Zach G. Zacharia,** "*Logistics Thought: Key Messages and Implications from the Field of Marketing*," presented at the Council of Logistics Management Doctoral Symposium, Chicago, Illinois, October 3-4, 1997.

- **Zach G. Zacharia,** "*Navigating the Internet*" presented at the Southeast Local Roads Conference, Biloxi, Mississippi, September 24-26, 1997.
- **Zach G. Zacharia,** "*Bridge Paint Expert Systems,"* presented at the Second International Organization for Economic Cooperation and Development (OECD) Conference on Knowledge Based Expert Systems in Transportation, Montreal, Canada, June 14-16, 1992.

G. Teaching and Research Advising

COURSES:

Lehigh University (2008 – Present)

- SCM 186 - Supply Chain Management and Operations (Undergraduate 2008 - present)
- SCM 354 - Logistics and Transportation (Undergraduate 2008-present)
- GBUS 453 – Logistics and Transportation (Graduate 2013 – present)
- GBUS 492- Supply Chain Management Strategy (Graduate 2010- 2015) (Summer Course)
- Advising 14 Supply Chain Management Majors (2021)
- Advising 11 Supply Chain Management Majors (2020)
- Advising 21 Supply Chain Management Majors (2019)
- Advising 5 Supply Chain Management Majors (2018)
- Advising 24 Supply Chain Management Majors (2017)
- Advising 9 Supply Chain Management Majors (2016)
- Advising 27 Supply Chain Management Majors (2015)
- Advising 28 Supply Chain Management Majors (2014)
- Advising 24 Supply Chain Management Majors (2013)
- Advising 9 Supply Chain Management Majors (2012)
- Advising 10 Supply Chain Management Majors (2011)
- Advising 13 Supply Chain Management Majors (2010)
- Advising 6 Supply Chain Management Majors (2009)

Texas Christian University (2001 – 2008)

- Strategic Sourcing and Procurement (Professional MBA) 2007
- Business Simulation (Professional MBA) 2007
- Supply Chain Management Concepts (Full-Time MBA) 2005 – 2008
- Supply Chain Management Concepts (Professional MBA) 2001– 2008
- Logistics and Transportation (Professional MBA) 2001 - 2008
- Supply Chain Tools and Technologies (Professional MBA) 2002
- Logistics and Transportation (Undergraduate) 2001 - 2008
- Supply Chain Management Concepts (Undergraduate) 2003 – 2004
- Supply Chain Tools and Technologies (Undergraduate) 2003
- Procurement and Supply Management (Undergraduate) 2003

University of Tennessee (1996-2001)

- Introduction to Transportation (Undergraduate) Summer 1998
- Introduction to Logistics (Undergraduate) Summer 1999
- Marketing Management (Undergraduate) Spring 2000
- Global Logistics and Transportation (Undergraduate) Summer 2000

H. SERVICE

University

Faculty Compensation Committee (2016 – 2019)

College

Director, Center for Supply Chain Research Lehigh
Promotion and Tenure Committee (2021 – onwards)
Chair, Database and Software Committee (2018 – onwards)
Ph.D. Task Force (2017)
Undergraduate Core Curriculum Committee (2016)
Math Committee to Assess Assessment Results (2010)

Department

BIS Assistant Professor Search Chair – Tenure Track (2021-2021)
SCM Assistant Professor Search Chair – Tenure Track (2020-2020)
DATA Department Chair Search – Tenure Track (2019-2019)
SCM Assistant Professor Search Chair – Tenure Track (2018-2018)
SCM POP Search Chair (2017-2017)
Research Seminar Committee (2010-2011)
SCM Club Faculty Liaison (2009-2019)

Professional (Council of Supply Chain Management Professionals)

Education Committee Member -Lehigh Valley Roundtable (2015-onwards)
President – Lehigh Valley Roundtable (2012-2015)
Education Conference Chair (2010 – 2011)
Education Strategies Committee Member (2007 – 3-year term)
Case Editor (3-year term)
President – Dallas Roundtable (2007-2008)
Vice President – Dallas Roundtable (2006-2007)
Education chair – Dallas Roundtable (2004-2006)
Member (1999 – onwards)

External Service

Rockefeller Group – Expert Service Consulting (Jan 2020)

Exhibit B - Eligibility Criteria: Professional Evidence

Alagoinhas, October 6, 2025

To whom it may concern,

We hereby certify that Mr. **Jackson Marques dos Santos** has been working at **Green Gold Com. Imp. e Exp. Ltda.** since **November 2023**, holding the position of full-time **Commercial and Administrative Director**.

During his time in the role, Mr. Jackson has stood out for the strategic management of commercial operations and effective team leadership, with a focus on the export of fresh fruit to the European market.

His main responsibilities include:

- Definition and execution of the company's commercial and operational strategies.
- Negotiation with international clients and distributors, ensuring competitiveness and profitability.
- Financial planning and budget control, including profitability analysis by product and logistics route.
- Supervision of the entire export chain — from origin to port shipment — including certifications and customs documentation.
- Development of marketing strategies and institutional relations with government agencies (ApexBrasil, MAPA, among others).

His market knowledge and business vision, combined with a practical and collaborative approach, have actively contributed to the implementation of modern management processes and to positioning the company as a benchmark for quality and reliability in the sector.

Mr. Jackson demonstrates an ethical stance, strong commitment to the company, and excellent ability to represent the brand with international clients and partners. His contribution has been decisive for the success and reputation of Green Gold Citrus.

We are available to provide additional information, if necessary.

Sincerely,

Robson Leonardo Mossambani
Owner
Green Gold Com. Imp. e Exp. Ltda.
greengoldcitrus@greengoldcitrus.com
Phone: +55 17 99712-3152

53.319.230/0001-84
GREEN GOLD COMÉRCIO IMPORTAÇÃO E EXPORTAÇÃO LTDA
RUA URUGUAI, no No.
COQUEIRAL - ZIP CODE: 48.010-634
ALAGOINHAS - BAHIA
STATE REGISTRATION No: 214.056.633

I, Carolina Favero da Silva, telephone number 415 425-2508, mailing address P.O. Box 90487, San Diego, CA 92169, certify that the professional translation of this document from Portuguese to English has been performed by myself, a qualified translator fluent in both languages, and that the following is an accurate and complete translation of the document.


_____ Date: November 11, 2025.

Alagoinhas, 06 de outubro de 2025

A quem possa interessar,

Atestamos que o Sr. **Jackson Marques dos Santos** atua na **Green Gold Com. Imp. e Exp. Ltda.** desde **novembro de 2023**, ocupando o cargo de **Diretor Comercial e Administrativo** em tempo integral.

Durante sua atuação, o Sr. Jackson tem se destacado pela condução estratégica das operações comerciais e pela liderança eficaz de equipes, com foco na exportação de frutas frescas para o mercado europeu.

Entre suas principais atribuições, destacam-se:

- Definição e execução das estratégias comerciais e operacionais da empresa.
- Negociação com clientes e distribuidores internacionais, assegurando competitividade e rentabilidade.
- Planejamento financeiro e controle orçamentário, com análise de rentabilidade por produto e rota logística.
- Supervisão da cadeia completa de exportação — desde a origem até o embarque portuário —, incluindo certificações e documentação aduaneira.
- Desenvolvimento de estratégias de marketing e relacionamento institucional com órgãos governamentais (ApexBrasil, MAPA, entre outros).

Seu conhecimento de mercado e visão de negócios com uma abordagem prática e colaborativa, vem contribuindo ativamente para a implementação de processos modernos de gestão e para o posicionamento da empresa como referência em qualidade e confiabilidade no setor.

O Sr. Jackson tem postura ética, comprometimento com a empresa e grande capacidade de representar a marca junto a clientes e parceiros internacionais. Sua contribuição tem sido determinante para o sucesso e reputação da Green Gold Citrus.

Estamos à disposição para fornecer informações adicionais, caso necessário.

Atenciosamente,

Robson Leonardo Mossambani
Proprietário
Green Gold Com. Imp. e Exp. Ltda.
greengoldcitrus@greengoldcitrus.com.br
Telefone. + 55 17 99712-3152

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GREEN GOLD COMERCIO IMPORTAÇÃO E EXPORTAÇÃO LTDA
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cardicitrus.com.br

Santa Adélia, October 10, 2025

To whom it may concern,

This letter certifies that Mr. **Jackson Marques dos Santos** worked as a full-time **Manager** at **Cardili Citrus Ltda.**, from **July 2015 to October 2023**. During this period, Mr. Jackson demonstrated remarkable commitment, leadership, and competence in managing commercial and administrative operations.

- Coordination of fresh fruit export operations to the European market, ensuring compliance with international regulations (such as GlobalGAP and sanitary certifications).

- Expansion of the international client portfolio and direct negotiation of contracts with importers.

- Management of commercial operations in the domestic market, focusing on major supermarket chains and wholesalers.

- Demand planning and logistics, ensuring efficiency and quality in product delivery.

- Implementation of control systems (CRM and ERP) to optimize processes and monitor results.

Directly contributed to the expansion of the international client base and the consolidation of the brand in new markets by managing certification processes and ensuring compliance with European market quality standards. Internally, led teams with a focus on productivity and excellence, consistently promoting a culture of responsibility and innovation.

We remain at your disposal for any additional information that may be required.

Sincerely,

Julio Cardili Neto
CEO
Phone +55 75 98278-7447
Cardili Citrus Ltda.

I, Carolina Favero da Silva, telephone number 415 425-2508, mailing address P.O. Box 90487, San Diego, CA 92169, certify that the professional translation of this document from Portuguese to English has been performed by myself, a qualified translator fluent in both languages, and that the following is an accurate and complete translation of the document.


_____ Date: November 11, 2025.

Cardicitrus

Rua Ayub Nahes, 14 . Santa Rosa
Santa Adélia . SP . 15950.000
(17) 3571.4354 . cardili@cardilicitrus.com.br

cardicitrus.com.br

Santa Adélia, 10 de outubro de 2025

A quem possa interessar,

Esta carta certifica que o Sr. **Jackson Marques dos Santos** trabalhou como **Gerente** em tempo integral na empresa **Cardili Citrus Ltda.**, de **julho de 2015 a outubro de 2023**. Durante este período, o Sr. Jackson demonstrou notável comprometimento, liderança e competência na gestão de operações comerciais e administrativas.

- Coordenação das operações de exportação de frutas frescas para o mercado europeu, assegurando conformidade com as regulamentações internacionais (como GlobalGAP e certificações sanitárias).

- Expansão da carteira de clientes internacionais e negociação direta de contratos com importadores.

- Gestão das operações comerciais no mercado interno, com foco em grandes redes de supermercados e atacadistas.

- Planejamento de demanda e logística, garantindo eficiência e qualidade na entrega dos produtos.

- Implementação de sistemas de controle (CRM e ERP) para otimização de processos e monitoramento de resultados.

Contribuiu diretamente para a expansão da base de clientes internacionais e para a consolidação da marca em novos mercados, conduzindo processos de certificação e garantindo o cumprimento das exigências de qualidade do mercado europeu. No ambiente interno, liderou equipes com foco em produtividade e excelência, sempre promovendo uma cultura de responsabilidade e inovação.

Colocamo-nos à disposição para quaisquer informações adicionais que se fizerem necessárias.

Atenciosamente,

Julio Cardili Neto
Diretor Executivo
Tel. +55 75 98278-7447
Cardili Citrus Ltda.

Julio Cardili Neto

São Paulo, June 9, 2025.

To whom it may concern,

Dear all,

This letter certifies that Mr. **Jackson Marques dos Santos** held the position of **Commercial Assistant** at **Polo Serviços de Cobrança Ltda**, located in São Paulo – SP, from **August 2010 to March 2012**, without interruption.

His responsibilities included various commercial duties, such as:

- Prospecting and negotiating factoring contracts with small and medium-sized businesses, as well as corporate clients;
- Conducting credit and risk analysis of potential clients, including assessments of financial health, cash flow, and guarantees;
- Structuring customized commercial proposals, defining rates, terms, and operational limits;
- Monitoring and reconciling the financial flow of factoring operations, including settlement of receivables, delinquency management, and disbursements to clients;
- Preparing management reports and profitability analyses by client portfolio, as well as cash flow projections for the executive board.

The employee's weekly workload was at least **40 hours**, with the possibility of extension according to the company's operational and financial demands.

Throughout the employment period, the professional demonstrated commitment, ethical conduct, and excellent performance in his duties, making a positive contribution to the company's results.

There being nothing further at this time, we remain.

Sincerely,

-----// signature //-----
Darci Beato Junior
Managing Partner
Polo Serviços de Cobrança Ltda
Email Darci.beato@gmail.com
Telephone: + 55 11 95555 8246

I, Raphael Michels Fantinato de Moura, telephone number 415 425-2508, mailing address P.O. Box 90487, San Diego, CA 92169, certify that the professional translation of this document from Portuguese to English has been performed by myself, a qualified translator fluent in both languages, and that the following is an accurate and complete translation of the document.

Raphael Michels Fantinato de Moura. **Date: August 5, 2025.**

POLO
SERVIÇOS DE COBRANÇA

São Paulo, 09 de junho de 2025.

A quem possa interessar

Prezados Senhores:

Esta carta certifica que o Sr. **Jackson Marques dos Santos** exerceu a função de **Assistente Comercial** na empresa **Polo Serviços de Cobrança Ltda**, situada em São Paulo – SP, no período de **agosto de 2010 até março de 2012**, de forma ininterrupta.

As atividades desenvolvidas incluíram tanto atribuições na área **comercial**, como:

- Prospecção e negociação de contratos de factoring com pequenas e médias empresas, bem como clientes corporativos;
- Análise de crédito e risco de potenciais clientes, com avaliação de saúde financeira, fluxo de caixa e garantias;
- Estruturação de propostas comerciais personalizadas, com definição de taxas, prazos e limites de operação.
- Controle e reconciliação do fluxo financeiro das operações de factoring, como liquidação de títulos, inadimplência e repasses aos clientes;
- Elaboração de relatórios gerenciais e análises de rentabilidade por carteira, além de projeções de fluxo de caixa para a diretoria.

A carga horária semanal do colaborador foi de, no mínimo, **40 horas semanais**, podendo se estender conforme as demandas operacionais e financeiras da empresa.

Durante todo o período de vínculo, o profissional demonstrou comprometimento, ética e excelente desempenho em suas funções, contribuindo positivamente para os resultados da empresa.

Sem mais para o momento, subscrevemo-nos,

Atenciosamente,

Darci Beato Junior
Sócio Proprietário
Polo Serviços de Cobrança Ltda
E-mail Darci.beato@gmail.com
Telefone: + 55 11 95555 8246

GOVERNMENT OF THE STATE OF SÃO PAULO
SECRETARIAT OF ECONOMIC DEVELOPMENT
COMMERCIAL REGISTRY OF THE STATE OF SÃO PAULO

STATE GOVERNMENT

JUCESP

SIMPLIFIED COMPANY REGISTRATION FORM

IN THIS SIMPLIFIED COMPANY REGISTRATION FORM, THE INFORMATION IN THE SECTIONS "COMPANY," "CAPITAL," "ADDRESS," "CORPORATE PURPOSE," AND "OWNER/PARTNERS/BOARD OF DIRECTORS" REFLECTS THE COMPANY'S CURRENT STATUS AS OF THE DATE OF ISSUANCE OF THIS DOCUMENT.

BELOW ARE EXCERPTS FROM THE LAST FIVE FILINGS, IF ANY.

THE AUTHENTICITY OF THIS SIMPLIFIED COMPANY REGISTRATION FORM CAN BE VERIFIED AT WWW.JUCESPONLINE.SP.GOV.BR USING THE AUTHENTICITY CODE PROVIDED AT THE END OF THIS DOCUMENT.

TO OBTAIN THE COMPANY'S FULL HISTORY, PLEASE REFER TO THE COMPLETE COMPANY REGISTRATION FORM.

COMPANY INFORMATION		
CONEX AR CONDICIONADO LTDA		
TYPE: SINGLE-MEMBER LIMITED LIABILITY COMPANY (E.P.P.)		
AUTOMATICALLY CONVERTED TO LTDA – ARTICLE 41 OF LAW 14.195 OF 08/26/2021		
MAIN REGISTRATION NIRE	DATE OF INCORPORATION	ISSUED ON
35600836745	12/19/2014	05/30/2025 08:44:27 AM
START OF ACTIVITY	CNPJ	STATE REGISTRATION
11/28/2011	14.711.066/0001-02	

CAPITAL
BRL 500,000.00 (FIVE HUNDRED THOUSAND REAIS)

ADDRESS		
STREET: RUA GUILHERME REHDER	NUMBER: 27	
NEIGHBORHOOD: PARQUE JABAQUARA	COMPLEMENT:	
CITY: SÃO PAULO	ZIP CODE: 04358-140	STATE: SP

CORPORATE PURPOSE
INSTALLATION AND MAINTENANCE OF CENTRAL AIR CONDITIONING, VENTILATION, AND REFRIGERATION SYSTEMS

OWNER/PARTNERS/BOARD OF DIRECTORS
JADISON SANTOS DE CERQUEIRA, RACE/COLOR: NOT DECLARED, BRAZILIAN NATIONAL, CPF: 021.037.695-38, RG/RNE: 53285617X – SP, RESIDING AT RUA CITTADELLA, 01, JARDIM GUARUJÁ, SÃO PAULO – SP, ZIP CODE 05876-050, HOLDING THE POSITION OF PARTNER AND MANAGING DIRECTOR, AUTHORIZED TO SIGN ON BEHALF OF THE COMPANY, WITH A CAPITAL SHARE OF BRL 500,000.00.

LAST 5 FILINGS
DOCUMENT NO.: 511.801/14-2 SESSION: 12/19/2014
TRANSFORMATION FROM NIRE 35226147486.
DOCUMENT NO.: 837.026/14-3 SESSION: 12/19/2014
REGISTRATION OF THE DECLARATION OF SMALL BUSINESS CLASSIFICATION (EPP).

Free Document
Commercial Use Prohibited

DOCUMENT NO.: 054.784/15-3 SESSION: 02/03/2015

HEAD OFFICE CAPITAL CHANGED TO BRL 80,000.00 (EIGHTY THOUSAND REAIS).

WITHDRAWAL FROM THE COMPANY: JACKSON MARQUES DOS SANTOS, BRAZILIAN NATIONAL, RACE/COLOR: NOT DECLARED, CPF: 331.338.218-57, RESIDING AT RUA CITTADELLA, 01, JARDIM GUARUJÁ, SÃO PAULO - SP, ZIP CODE 05876-050, HOLDING THE POSITION OF PARTNER AND MANAGING DIRECTOR, AUTHORIZED TO SIGN ON BEHALF OF THE COMPANY, WITH A CAPITAL SHARE OF BRL 75,000.00.

APPOINTMENT OF JADISON SANTOS DE CERQUEIRA, BRAZILIAN NATIONAL, RACE/COLOR: NOT DECLARED, CPF: 021.037.695-38, RG/RNE: 53285617-X - SP, RESIDING AT RUA AGROPOLI, 2200, CHÁCARA SANTA MARIA, SÃO PAULO - SP, ZIP CODE 05879-480, AS MANAGING DIRECTOR, AUTHORIZED TO SIGN ON BEHALF OF THE COMPANY.

INCLUSION OF CNPJ: 14.711.066/0001-02

DOCUMENT NO.: 043.132/23-6 SESSION: 01/26/2023

HEAD OFFICE CAPITAL CHANGED TO BRL 500,000.00 (FIVE HUNDRED THOUSAND REAIS).

REDISTRIBUTION OF CAPITAL OF JADISON SANTOS DE CERQUEIRA, BRAZILIAN NATIONAL, RACE/COLOR: NOT DECLARED, CPF: 021.037.695-38, RG/RNE: 53285617-X - SP, RESIDING AT RUA CITTADELLA, 01, JARDIM GUARUJÁ, SÃO PAULO - SP, ZIP CODE 05876-050, HOLDING THE POSITION OF PARTNER AND MANAGING DIRECTOR, AUTHORIZED TO SIGN ON BEHALF OF THE COMPANY, WITH A CAPITAL SHARE OF BRL 500,000.00.

HEAD OFFICE ADDRESS CHANGED TO RUA GUILHERME REHDER, 27, PARQUE JABAQUARA, SÃO PAULO - SP, ZIP CODE 04358-140. DATED: 01/15/2023

CONSOLIDATED ARTICLES OF INCORPORATION OF THE HEAD OFFICE.

END OF INFORMATION FOR NIRE: 35600836745
LAST DATABASE UPDATE: 05/30/2025

JUCESP SÃO PAULO GOVERNO DO ESTADO DIGITALLY SIGNED DOCUMENT

Simplified Registration Form. Document certified by the COMMERCIAL REGISTRY OF THE STATE OF SÃO PAULO. The Commercial Registry of the State of São Paulo guarantees the authenticity of this document when viewed directly on the portal www.jucesponline.sp.gov.br under the authenticity number 268581582, Friday, May 30, 2025, at 08:44:27 AM.

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Commercial Use Prohibited

I, Raphael Michels Fantinato de Moura, telephone number 415 425-2508, mailing address P.O. Box 90487, San Diego, CA 92169, certify that the professional translation of this document from Portuguese to English has been performed by myself, a qualified translator fluent in both languages, and that the following is an accurate and complete translation of the document.

Raphael Michels Fantinato de Moura. **Date: August 5, 2025.**

GOVERNO DO ESTADO DE SÃO PAULO
SECRETARIA DE DESENVOLVIMENTO ECONÔMICO
JUNTA COMERCIAL DO ESTADO DE SÃO PAULO

FICHA CADASTRAL SIMPLIFICADA

NESTA FICHA CADASTRAL SIMPLIFICADA, AS INFORMAÇÕES DOS QUADROS “EMPRESA”, “CAPITAL”, “ENDEREÇO”, “OBJETO SOCIAL” E “TITULAR/SÓCIOS/DIRETORIA” REFEREM-SE À SITUAÇÃO ATUAL DA EMPRESA, NA DATA DE EMISSÃO DESTE DOCUMENTO.

A SEGUIR, SÃO INFORMADOS OS EXTRATOS DOS CINCO ÚLTIMOS ARQUIVAMENTOS REALIZADOS, SE HOUVER.

A AUTENTICIDADE DESTA FICHA CADASTRAL SIMPLIFICADA PODERÁ SER CONSULTADA NO SITE WWW.JUCESPONLINE.SP.GOV.BR, MEDIANTE O CÓDIGO DE AUTENTICIDADE INFORMADO AO FINAL DESTE DOCUMENTO.

PARA OBTER O HISTÓRICO COMPLETO DA EMPRESA, CONSULTE A FICHA CADASTRAL COMPLETA.

EMPRESA		
CONEX AR CONDICIONADO LTDA		
TIPO: LIMITADA UNIPESSOAL (E.P.P.)		
TRANSFORMADA AUTOMATICAMENTE PARA LTDA - ART. 41 DA LEI 14.195 DE 26/08/2021		
NIRE MATRIZ	DATA DA CONSTITUIÇÃO	EMISSÃO
35600836745	19/12/2014	30/05/2025 08:44:27
INÍCIO DE ATIVIDADE	CNPJ	INSCRIÇÃO ESTADUAL
28/11/2011	14.711.066/0001-02	

CAPITAL
R$ 500.000,00 (QUINHENTOS MIL REAIS)

ENDEREÇO		
LOGRADOURO: RUA GUILHERME REHDER	NÚMERO: 27	
BAIRRO: PARQUE JABAQUARA	COMPLEMENTO:	
MUNICÍPIO: SAO PAULO	CEP: 04358-140	UF: SP

OBJETO SOCIAL
INSTALAÇÃO E MANUTENÇÃO DE SISTEMAS CENTRAIS DE AR CONDICIONADO, DE VENTILAÇÃO E REFRIGERAÇÃO

TITULAR / SÓCIOS / DIRETORIA
JADISON SANTOS DE CERQUEIRA, RAÇA/COR: NÃO DECLARADA., NACIONALIDADE BRASILEIRA, CPF: 021.037.695-38, RG/RNE: 53285617X - SP, RESIDENTE À RUA CITTADELLA, 01, JARDIM GUARUJA, SAO PAULO - SP, CEP 05876-050, OCUPANDO O CARGO DE SÓCIO E ADMINISTRADOR, ASSINANDO PELA EMPRESA. COM VALOR DE PARTICIPAÇÃO NA SOCIEDADE DE $ 500.000,00.

5 ÚLTIMOS ARQUIVAMENTOS
NUM.DOC: 511.801/14-2 SESSÃO: 19/12/2014
TRANSFORMADA DE NIRE 35226147486.
NUM.DOC: 837.026/14-3 SESSÃO: 19/12/2014
REGISTRO DA DECLARAÇÃO DE ENQUADRAMENTO DE EMPRESA DE PEQUENO PORTE – (EPP).

Documento Gratuito
Proibida a Comercialização

NUM.DOC: 054.784/15-3 SESSÃO: 03/02/2015

CAPITAL DA SEDE ALTERADO PARA $ 80.000,00 (OITENTA MIL REAIS).

RETIRA-SE DA SOCIEDADE JACKSON MARQUES DOS SANTOS, NACIONALIDADE BRASILEIRA, RAÇA/COR: NÃO DECLARADA., CPF: 331.338.218-57, RESIDENTE À RUA CITTADELLA, 01, JARDIM GUARUJA, SAO PAULO - SP, CEP 05876-050, NA SITUAÇÃO DE SÓCIO E ADMINISTRADOR, ASSINANDO PELA EMPRESA, COM VALOR DE PARTICIPAÇÃO NA SOCIEDADE DE $ 75.000,00.

NOMEADO JADISON SANTOS DE CERQUEIRA, NACIONALIDADE BRASILEIRA, RAÇA/COR: NÃO DECLARADA., CPF: 021.037.695-38, RG/RNE: 53285617-X - SP, RESIDENTE À RUA AGROPOLI, 2200, CHACARA SANTA MARIA, SAO PAULO - SP, CEP 05879-480, COMO ADMINISTRADOR, ASSINANDO PELA EMPRESA.

INCLUSÃO DE CNPJ 14.711.066/0001-02

NUM.DOC: 043.132/23-6 SESSÃO: 26/01/2023

CAPITAL DA SEDE ALTERADO PARA $ 500.000,00 (QUINHENTOS MIL REAIS).

REDISTRIBUICAO DO CAPITAL DE JADISON SANTOS DE CERQUEIRA, NACIONALIDADE BRASILEIRA, RAÇA/COR: NÃO DECLARADA., CPF: 021.037.695-38, RG/RNE: 53285617-X - SP, RESIDENTE À RUA CITTADELLA, 01, JARDIM GUARUJA, SAO PAULO - SP, CEP 05876-050, NA SITUAÇÃO DE SÓCIO E ADMINISTRADOR, ASSINANDO PELA EMPRESA, COM VALOR DE PARTICIPAÇÃO NA SOCIEDADE DE $ 500.000,00.

ENDEREÇO DA SEDE ALTERADO PARA RUA GUILHERME REHDER, 27, PARQUE JABAQUARA, SAO PAULO - SP, CEP 04358-140. , DATADA DE: 15/01/2023.

CONSOLIDAÇÃO CONTRATUAL DA MATRIZ.

FIM DAS INFORMAÇÕES PARA NIRE: 35600836745
DATA DA ÚLTIMA ATUALIZAÇÃO DA BASE DE DADOS: 30/05/2025

JUCESP SÃO PAULO GOVERNO DO ESTADO documento assinado digitalmente

Ficha Cadastral Simplificada. Documento certificado por JUNTA COMERCIAL DO ESTADO DE SÃO PAULO. A Junta Comercial do Estado de São Paulo, garante a autenticidade deste documento quando visualizado diretamente no portal www.jucesponline.sp.gov.br sob o número de autenticidade 268581582, sexta-feira, 30 de maio de 2025 às 08:44:27.

COMPLETE COMPANY REGISTRATION FORM

THE INFORMATION ON THIS FIRST PAGE, FOUND IN THE SECTIONS CAPITAL – ADDRESS – CORPORATE PURPOSE – OWNER/PARTNER/BOARD OF DIRECTORS, REFLECTS THE COMPANY'S STATUS AT THE TIME OF ITS INCORPORATION OR ITS FIRST REGISTERED FILING.

BELOW ARE EXCERPTS OF ANY SUBSEQUENT FILINGS, IF ANY.

THE AUTHENTICITY OF THIS COMPLETE REGISTRATION FORM CAN BE VERIFIED ON THE WEBSITE WWW.JUCESPONLINE.SP.GOV.BR USING THE AUTHENTICITY CODE PROVIDED AT THE END OF THIS DOCUMENT.

FOR COMPANIES ESTABLISHED BEFORE 1992, FILINGS PRIOR TO THAT DATE MUST BE CONSULTED IN THE BRIEF REPORT FORM (FBR).

ALL FILED ACTS ARE THEN PRESENTED IN CHRONOLOGICAL ORDER.

COMPANY INFORMATION		
CONVERTED **MASTERTEC SEGURANCA ELETRONICA LTDA** TYPE: LIMITED LIABILITY COMPANY (MICROENTERPRISE - M.E.)		
MAIN REGISTRATION NIRE	DATE OF INCORPORATION	ISSUED ON
35226147486	11/28/2011	05/30/2025 08:49:11 AM
START OF ACTIVITY	CNPJ	STATE REGISTRATION
11/21/2011	14.711.066/0001-02	

CAPITAL
BRL 10,000.00 (TEN THOUSAND REAIS)

ADDRESS		
STREET: RUA LISANDRO TORRE	NUMBER: 1	
NEIGHBORHOOD: JARDIM SANTA MARGAR	COMPLEMENT: B	
CITY: SÃO PAULO	ZIP CODE: 04931-130	STATE: SP

CORPORATE PURPOSE
ELECTRICAL INSTALLATION AND MAINTENANCE RETAIL TRADE SPECIALIZED IN COMPUTER EQUIPMENT AND SUPPLIES RETAIL TRADE SPECIALIZED IN TELEPHONY AND COMMUNICATION EQUIPMENT

OWNER/PARTNERS/BOARD OF DIRECTORS
ANTONIO FRANCISCO SANTANA, RACE/COLOR: NOT DECLARED, BRAZILIAN NATIONAL, CPF: 771.835.258-72, RG/RNE: 86981195 – SP, RESIDING AT RUA LUIS MELENDEZ, 37, JARDIM IMBÉ, SÃO PAULO – SP, ZIP CODE 05863-180, HOLDING THE POSITION OF PARTNER, WITH A CAPITAL SHARE OF BRL 5,000.00 WILSON BISPO DOS SANTOS JUNIOR, RACE/COLOR: NOT DECLARED, BRAZILIAN NATIONAL, CPF: 353.437.668-46, RG/RNE: 418549333 – SP, RESIDING AT RUA LISANDRO TORRE, 1, JARDIM SANTA MARGAR, SÃO PAULO – SP, ZIP CODE 04931-130, HOLDING THE POSITION OF PARTNER AND MANAGING DIRECTOR, AUTHORIZED TO SIGN ON BEHALF OF THE COMPANY, WITH A CAPITAL SHARE OF R$ 5,000.00

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FILINGS
DOCUMENT NO.: 945.819/11-0 SESSION: 11/28/2011
REGISTRATION OF THE DECLARATION OF MICROENTERPRISE (ME) CLASSIFICATION
DOCUMENT NO.: 047.715/13-3 SESSION: 01/31/2013
CHANGE OF COMPANY NAME TO CONEX AR CONDICIONADO LTDA.
CHANGE IN PARTNERS/OWNER/BOARD OF DIRECTORS, DATED 01/24/2013.
WITHDRAWAL FROM THE COMPANY: WILSON BISPO DOS SANTOS JUNIOR, BRAZILIAN NATIONAL, RACE/COLOR: NOT DECLARED, CPF: 353.437.668-46, RESIDING AT RUA LISANDRO TORRE, 1, JARDIM SANTA MARGAR, SÃO PAULO - SP, ZIP CODE 04931-130, HOLDING THE POSITION OF PARTNER AND MANAGING DIRECTOR, AUTHORIZED TO SIGN ON BEHALF OF THE COMPANY, WITH A CAPITAL SHARE OF BRL 5,000.00.
WITHDRAWAL FROM THE COMPANY: ANTONIO FRANCISCO SANTANA, BRAZILIAN NATIONAL, RACE/COLOR: NOT DECLARED, CPF: 771.835.258-72, RESIDING AT RUA LUIS MELENDEZ, 37, JARDIM IMBE, SÃO PAULO - SP, ZIP CODE 05863-180, HOLDING THE POSITION OF PARTNER, WITH A CAPITAL SHARE OF BRL 5,000.00.
APPOINTMENT OF JACKSON MARQUES DOS SANTOS, BRAZILIAN NATIONAL, RACE/COLOR: NOT DECLARED, CPF: 331.338.218-57, RG/RNE: 39010660 - SP, RESIDING AT RUA CITTADELLA, 01, JARDIM GUARUJA, SÃO PAULO - SP, ZIP CODE 05876-050, HOLDING THE POSITION OF PARTNER AND MANAGING DIRECTOR, AUTHORIZED TO SIGN ON BEHALF OF THE COMPANY, WITH A CAPITAL SHARE OF BRL 9,900.00.
APPOINTMENT OF SEBASTIÃO ANTÔNIO DOS SANTOS, BRAZILIAN NATIONAL, RACE/COLOR: NOT DECLARED, CPF: 359.998.885-49, RG/RNE: 37000851-0 - BA, RESIDING AT RUA ADONARA, 70, JARDIM DOM JOSÉ, SÃO PAULO - SP, ZIP CODE 05886-020, HOLDING THE POSITION OF PARTNER, WITH A CAPITAL SHARE OF R$ 100.00.
CHANGE OF ECONOMIC ACTIVITY / CORPORATE PURPOSE OF HEAD OFFICE TO INSTALLATION AND MAINTENANCE OF CENTRAL AIR CONDITIONING, VENTILATION, AND REFRIGERATION SYSTEMS.
HEAD OFFICE ADDRESS CHANGED TO RUA AGROPOLI, 120, CHÁCARA SANTA MARIA, SÃO PAULO - SP, ZIP CODE 05879-480.
INCLUSION OF CNPJ: 14.711.066/0001-02
DOCUMENT NO.: 807.098/13-9 SESSION: 01/31/2013
REGISTRATION OF THE DECLARATION OF RECLASSIFICATION FROM MICROENTERPRISE (ME) TO SMALL BUSINESS (EPP).
DOCUMENT NO.: 228.009/13-3 SESSION: 06/21/2013
HEAD OFFICE CAPITAL CHANGED TO BRL 60,000.00 (SIXTY THOUSAND REAIS).
REDISTRIBUTION OF CAPITAL OF JACKSON MARQUES DOS SANTOS, BRAZILIAN NATIONAL, RACE/COLOR: NOT DECLARED, CPF: 331.338.218-57, RESIDING AT RUA CITTADELLA, 01, JARDIM GUARUJA, SÃO PAULO - SP, ZIP CODE 05876-050, HOLDING THE POSITION OF PARTNER AND MANAGING DIRECTOR, AUTHORIZED TO SIGN ON BEHALF OF THE COMPANY, WITH A CAPITAL SHARE OF BRL 30,000.00.
WITHDRAWAL FROM THE COMPANY: SEBASTIÃO ANTÔNIO DOS SANTOS, BRAZILIAN NATIONAL, RACE/COLOR: NOT DECLARED, CPF: 359.998.885-49, RG/RNE: 37000851-0 - BA, RESIDING AT RUA ADONARA, 70, JARDIM DOM JOSÉ, SÃO PAULO - SP, ZIP CODE 05886-020, HOLDING THE POSITION OF PARTNER, WITH A CAPITAL SHARE OF R$ 100.00.
APPOINTMENT OF ELY RENATO DIAS, BRAZILIAN NATIONAL, RACE/COLOR: NOT DECLARED, CPF: 165.694.528-27, RG/RNE: 24650393-2 - SP, RESIDING AT RUA AGROPOLI, 120, HOUSE 04, CHACARA SANTA MARIA, SÃO PAULO - SP, ZIP CODE 05879-480, HOLDING THE POSITION OF PARTNER AND MANAGING DIRECTOR, AUTHORIZED TO SIGN ON BEHALF OF THE COMPANY, WITH A CAPITAL SHARE OF BRL 30,000.00.
DOCUMENT NO.: 052.845/14-0 SESSION: 02/05/2014
REDISTRIBUTION OF CAPITAL OF JACKSON MARQUES DOS SANTOS, BRAZILIAN NATIONAL, RACE/COLOR: NOT DECLARED, CPF: 331.338.218-57, RESIDING AT RUA CITTADELLA, 01, JARDIM GUARUJA, SÃO PAULO - SP, ZIP CODE 05876-050, HOLDING THE POSITION OF PARTNER AND MANAGING DIRECTOR, AUTHORIZED TO SIGN ON BEHALF OF THE COMPANY, WITH A CAPITAL SHARE OF BRL 60,000.00.
WITHDRAWAL FROM THE COMPANY: ELY RENATO DIAS, BRAZILIAN NATIONAL, RACE/COLOR: NOT DECLARED, CPF: 165.694.528-27, RG/RNE: 24650393-2 - SP, RESIDING AT RUA AGROPOLI, 120, HOUSE 04, CHACARA SANTA MARIA, SÃO PAULO - SP, ZIP CODE 05879-480, HOLDING THE POSITION OF PARTNER AND MANAGING DIRECTOR, AUTHORIZED TO SIGN ON BEHALF OF THE COMPANY, WITH A CAPITAL SHARE OF BRL 30,000.00.
DOCUMENT NO.: 511.801/14-2 SESSION: 12/19/2014

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TRANSFORMATION OF THIS COMPANY TO NIRE 35600836745.

END OF INFORMATION FOR NIRE: 35226147486
LAST DATABASE UPDATE: 05/30/2025



Simplified Registration Form. Document certified by the COMMERCIAL REGISTRY OF THE STATE OF SÃO PAULO. The Commercial Registry of the State of São Paulo guarantees the authenticity of this document when viewed directly on the portal www.jucesponline.sp.gov.br under the authenticity number 268581582, Friday, May 30, 2025, at 08:44:27 AM.

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I, Raphael Michels Fantinato de Moura, telephone number 415 425-2508, mailing address P.O. Box 90487, San Diego, CA 92169, certify that the professional translation of this document from Portuguese to English has been performed by myself, a qualified translator fluent in both languages, and that the following is an accurate and complete translation of the document.

Raphael Michels Fantinato de Moura. **Date: August 5, 2025.**

GOVERNO DO ESTADO DE SÃO PAULO
SECRETARIA DE DESENVOLVIMENTO ECONÔMICO
JUNTA COMERCIAL DO ESTADO DE SÃO PAULO

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35226147486	28/11/2011	30/05/2025 08:49:11
INÍCIO DE ATIVIDADE	CNPJ	INSCRIÇÃO ESTADUAL
21/11/2011	14.711.066/0001-02	

CAPITAL
R$ 10.000,00 (DEZ MIL REAIS)

ENDEREÇO		
LOGRADOURO: RUA LISANDRO TORRE	NÚMERO: 1	
BAIRRO: JARDIM SANTA MARGAR	COMPLEMENTO: B	
MUNICÍPIO: SAO PAULO	CEP: 04931-130	UF: SP

OBJETO SOCIAL
INSTALAÇÃO E MANUTENÇÃO ELÉTRICA COMÉRCIO VAREJISTA ESPECIALIZADO DE EQUIPAMENTOS E SUPRIMENTOS DE INFORMÁTICA COMÉRCIO VAREJISTA ESPECIALIZADO DE EQUIPAMENTOS DE TELEFONIA E COMUNICAÇÃO

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ARQUIVAMENTOS
NUM.DOC: 945.819/11-0 SESSÃO: 28/11/2011
REGISTRO DA DECLARAÇÃO DE ENQUADRAMENTO DE MICROEMPRESA (ME).
NUM.DOC: 047.715/13-3 SESSÃO: 31/01/2013
ALTERAÇÃO DO NOME EMPRESARIAL PARA CONEX AR CONDICIONADO LTDA.
ALTERACAO DE SOCIOS/TITULAR/DIRETORIA: , DATADA DE: 24/01/2013.
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ENDEREÇO DA SEDE ALTERADO PARA RUA AGROPOLI, 120, CHACARA SANTA MARIA, SAO PAULO - SP, CEP 05879-480.
INCLUSÃO DE CNPJ 14.711.066/0001-02
NUM.DOC: 807.098/13-9 SESSÃO: 31/01/2013
REGISTRO DA DECLARAÇÃO DE REENQUADRAMENTO DE MICROEMPRESA - (ME) PARA EMPRESA DE PEQUENO PORTE - (EPP).
NUM.DOC: 228.009/13-3 SESSÃO: 21/06/2013
CAPITAL DA SEDE ALTERADO PARA $ 60.000,00 (SESSENTA MIL REAIS).
REDISTRIBUICAO DO CAPITAL DE JACKSON MARQUES DOS SANTOS, NACIONALIDADE BRASILEIRA, RAÇA/COR: NÃO DECLARADA., CPF: 331.338.218-57, RESIDENTE À RUA CITTADELLA, 01, JARDIM GUARUJA, SAO PAULO - SP, CEP 05876-050, NA SITUAÇÃO DE SÓCIO E ADMINISTRADOR, ASSINANDO PELA EMPRESA, COM VALOR DE PARTICIPAÇÃO NA SOCIEDADE DE $ 30.000,00.
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NUM.DOC: 052.845/14-0 SESSÃO: 05/02/2014
REDISTRIBUICAO DO CAPITAL DE JACKSON MARQUES DOS SANTOS, NACIONALIDADE BRASILEIRA, RAÇA/COR: NÃO DECLARADA., CPF: 331.338.218-57, RESIDENTE À RUA CITTADELLA, 01, JARDIM GUARUJA, SAO PAULO - SP, CEP 05876-050, NA SITUAÇÃO DE SÓCIO E ADMINISTRADOR, ASSINANDO PELA EMPRESA, COM VALOR DE PARTICIPAÇÃO NA SOCIEDADE DE $ 60.000,00.
RETIRA-SE DA SOCIEDADE ELY RENATO DIAS, NACIONALIDADE BRASILEIRA, RAÇA/COR: NÃO DECLARADA., CPF: 165.694.528-27, RESIDENTE À RUA AGROPOLI, 120, CASA 04, CHACARA SANTA MARIA, SAO PAULO - SP, CEP 05879-480, NA SITUAÇÃO DE SÓCIO E ADMINISTRADOR, ASSINANDO PELA EMPRESA, COM VALOR DE PARTICIPAÇÃO NA SOCIEDADE DE $ 30.000,00.
NUM.DOC: 511.801/14-2 SESSÃO: 19/12/2014

TRANSFORMAÇÃO DESTA SOCIEDADE PARA NIRE 35600836745.

FIM DAS INFORMAÇÕES PARA NIRE: 35226147486
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Exhibit C.I – First Prong – Substantial Merit and National Importance

2025 Business PLAN



JMS Fresh Produce

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PHONE: +55 75 98114-3910
E-MAIL: cardilicitrus@gmail.com
POSITION: Sales Manager & Founder

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1. Executive Summary

This business plan proposes the launch of JMS Fresh Produce LLC (Limited Liability Company), headquartered in Miami, Florida, that **will be a specialized importer and distributor of high-quality fruits and roots sourced from certified Latin American producers**. Founded by Jackson Marques dos Santos (Mr. Santos), a seasoned professional with over 15 years of experience in international produce trade, compliance, and logistics. The company strategically targets one of the most critical sectors of the U.S. food economy: the consistent, compliant, and sustainable supply of fresh produce. Utilizing Miami's as the nation's premier gateway for perishable imports, JMS leverages both geography and expertise to strengthen U.S. food availability while advancing compliance and traceability standards.



Above there is an illustrative image with the visual concept of JMS Fresh Produce in Miami, FL, that represents a company modern, sustainable, and with an identity linked to nature and tropical products.

Critical National Importance

The United States depends on imported fruits and vegetables to meet consumer demand, with more than half of fresh fruits and nearly one-third of fresh vegetables consumed

domestically coming from foreign suppliers[1]. Rising consumer demand for year-round availability of mangoes, limes, grapes, ginger and others fruits and vegetables, has intensified the importance of reliable supply chains. In parallel, food loss and waste estimated at 30 - 40% of the U.S. food supply[2] represents not only an economic loss but also a public policy challenge requiring vigilant logistics and compliance. Miami serves as the primary U.S. entry hub for Latin American perishables, handling over 70% of all U.S. perishable imports by air[3]. By anchoring operations in this strategic hub, JMS Fresh Produce directly supports U.S. food security, competitiveness, and compliance priorities.

The JMS Fresh Produce assumes national importance by strengthening one of the most sensitive pillars of the U.S. economy: the security, stability, and efficiency of the fresh food supply. The United States depends on imports to supply more than half of the fruits and more than one-third of the vegetables consumed domestically, making the perishables sector a critical component of public health, economic competitiveness, and the nation's strategic resilience.[1] JMS Fresh Produce's operations contribute directly to these objectives by reducing logistical bottlenecks, expanding the geographic redundancy of the supply chain, reinforcing quality controls aligned with FSMA, and mitigating losses caused by transportation inefficiencies. Each component of the operational model, regional hubs, technical rigor in food safety, enhanced traceability, and strengthened commercial ties with Latin America, generates economic and institutional benefits that transcend the company's commercial interests. This is an endeavor whose public utility is expressed in the reduction of systemic risks, the increase in the availability of affordable food for U.S. consumers and institutions, and the decrease in national vulnerability to logistical disruptions and external shocks.

Mr. Santos Unique Capability

Mr. Santos brings an unparalleled skill set to this endeavor. His career spans over a decade and a half coordinating international food supply chains, achieving GlobalGAP (Good Agricultural Practices) and FDA compliance (Food and Drug Administration), and designing cold-chain logistics that reduce loss while accelerating distribution. He has personally managed sourcing and quality assurance programs across multiple Latin American countries, ensuring that producers meet U.S. Food Safety Modernization Act (FSMA) standards. His hands-on expertise

[1] https://www.ers.usda.gov/data-products/charts-of-note/chart-detail?chartId=110713
[2] https://www.usda.gov/foodwaste/faqs
[3] https://www.miami-airport.com/home-cargo.asp

in bridging supplier practices with U.S. compliance requirements makes him irreplaceable in a sector where regulatory lapses can result in costly recalls, reputational losses, and public health risks. Unlike general importers, JMS Fresh Produce's foundation rests on Mr. Santos ability to integrate sourcing, compliance, and logistics into a seamless operational system.

Benefit to the Nation

JMS Fresh Produce's projected operations will generate immediate and measurable benefits for the U.S. economy. The company will deploy startup capital directly into Miami's logistics ecosystem, establish refrigerated warehouse and distribution infrastructure, and create over eighteen skilled jobs in its first operating phase, with growth potential as demand for specialty produce accelerates. Beyond job creation, the company will contribute to the U.S. tax base and strengthen the resilience of the national food supply chain. By reducing waste through precise compliance and improved handling, JMS Fresh Produce supports both environmental efficiency and consumer affordability. Most importantly, millions of U.S. households, particularly in underserved and rapidly growing metropolitan markets, stand to benefit from a more diversified, secure, and sustainable fresh produce supply. Furthermore, JMS Fresh Produce's operations directly support U.S. public health initiatives by expanding access to fresh, nutritious produce that serves as a cornerstone in combating the nation's obesity. The Centers for Disease Control and Prevention identifies obesity as affecting American adults. By importing high-quality fresh fruits and roots from Latin America JMS enhances the availability and affordability of nutrient-dense foods that are essential components dietary.

JMS Fresh Produce is not simply building an import business; it is fortifying a national priority at the intersection of food security, trade resilience, and regulatory compliance. With a seasoned founder uniquely qualified to lead, and Miami as a premier hub for national distribution, the company is positioned to deliver significant and lasting benefit across the U.S. economy.

1.1 Nature and scope of the business

JMS Fresh Produce will operate in the context of food security, trade logistics, and American consumer demand. **Headquartered in Miami, Florida, the company specializes in importing high-volume, high-demand fresh produce fresh fruits and roots, including mangoes, limes, grapes, and ginger from rigorously certified growers in Latin America.**

These products will be distributed across the United States to:

- Supermarkets (Walmart, Costco, Publix, etc.)
- Distributors (Regional, National -UNFI, KeHE)
- Food service organizations (Restaurant groups, Hospitality and Institutional Buyers)

The business model is designed not as a conventional trading enterprise, but as a logistics-driven food security solution addressing systemic challenges in the U.S. supply chain such as excess food waste, fragile import channels, fluctuating costs, insufficient traceability, and increasing regulatory pressures under the Food Safety Modernization Act (FSMA).

The U.S. market for fresh produce is vast and vulnerable, and:

- Nearly 53% of fresh fruit consumed nationally is imported[4], a dependency that leaves the food system exposed to disruptions at points of entry and logistical breakdowns.
- Food loss at retail and consumer levels alone accounts for over 20% of U.S. food waste[5], much of it linked to spoilage accelerated by inadequate cold-chain handling and distribution inefficiencies.

By structuring operations around temperature-controlled logistics and traceability technologies, JMS Fresh Produce directly mitigates these systemic losses. In addition, with FSMA compliance placing greater emphasis on supplier verification, record-keeping, and transport safety[6], JMS embeds regulatory assurance into its sourcing practices by working exclusively with GlobalGAP-certified farms and implementing strict quality-control protocols at every stage of the supply chain.

[4] https://www.ers.usda.gov/data-products/charts-of-note/chart-detail?chartId=110713
[5] https://www.usda.gov/foodwaste/faqs
[6] https://www.fda.gov/food/guidanceregulation/fsma

From its Miami headquarters, JMS Fresh Produce leverages the region's unparalleled role as America's dominant perishables gateway, responsible for the majority of air cargo imports of fruits and vegetables into the U.S.. Yet the business scope is deliberately national. **Planned logistics hubs in Texas, New Jersey, and Chicago will extend the company's reach into America's fastest-growing consumption markets, including the Northeast corridor, Midwest distribution centers, and Texas's rapidly expanding Hispanic and general populations. These hubs allow JMS not only to broaden market access but also to enhance the resilience of the national food distribution network by diversifying beyond a single point of entry.**

The foundational investment strategy of JMS Fresh Produce has been structured around refrigerated storage facilities, compliance-driven logistics systems, and a scalable workforce plan. Initial operations will employ a skilled core team in Miami, expanding as demand scales across secondary hubs. Financial forecasts anticipate steady year-over-year growth as supermarket chains and distributors increasingly prioritize vendors capable of guaranteeing food safety, traceability, and reduced spoilage. **JMS Fresh Produce is not merely supplying fruits and roots to U.S. markets, it is addressing critical systemic inefficiencies that compromise food availability, elevate costs, and increase consumer exposure to non-compliant imports.**

By embedding resilience, compliance, and operational efficiency into its business model, JMS Fresh Produce contributes to a stronger national food system. The company's nationwide scope spanning Miami, Texas, New Jersey, and Chicago ensures that its impact extends well beyond regional trade, positioning it as a reliable stakeholder in the security, affordability, and sustainability of America's fresh produce supply chain.

1.2 JMS Fresh Produce

JMS Fresh Produce distinguishes itself by offering a portfolio of high-demand fruits and roots primarily mangoes, limes, grapes, and ginger sourced from rigorously vetted producers across Latin America.

- **All partner farms operate under internationally recognized certifications:** as GlobalGAP and maintain FDA registration, ensuring compliance with the U.S. Food Safety Modernization Act (FSMA). These certifications not only validate adherence to agricultural, sanitary, and traceability standards but also directly align with U.S. regulatory priorities for food imports[7]. By focusing exclusively on certified suppliers, JMS reduces the compliance risks that often delay or derail shipments from uncertified operators, enabling seamless entry into the U.S. market.

- **JMS integrates advanced cold-chain monitoring technologies designed to extend shelf life and minimize spoilage**: improper temperature management accounts for a significant share of fresh produce losses, with overall U.S. food waste estimated at 30–40% of the food supply[8]. JMS addresses this challenge through temperature-controlled storage facilities, GPS-enabled refrigerated transport, and real-time monitoring systems that guarantee product integrity from farm to supermarket. This approach not only reduces food waste volumes but also enables buyers to capture greater margins by receiving consistent, high-quality products.

- **Central to JMS's operational model are compliance audits and robust traceability systems**: under FSMA, U.S. importers are required to verify foreign suppliers, maintain comprehensive records, and establish rapid recall capabilities. JMS embeds these safeguards into its processes by conducting periodic internal audits, deploying lot-level traceability systems, and providing downstream clients with verifiable data on origin, handling, and transport conditions. These offerings reduce costly compliance gaps for distributors and retailers sectors that, according to recent industry reports, face rising regulatory oversight and liability risks in food imports. By assuming the burden of verification, JMS positions itself as both a supplier and compliance partner, lowering operational risks for its clients.

- **Highly effective system that delivers measurable benefits:** reduced spoilage, cost efficiencies for supermarkets and distributors, and reliable food safety standards for U.S. consumers. Supermarkets handling imported produce already confront thin

[7] https://www.fda.gov/food/food-safety-modernization-act-fsma/full-text-food-safety-modernization-act-fsma#TITLE_III
[8] https://www.usda.gov/foodwaste/faqs

operating margins, many under 2% annually[9]. Through supply consistency, traceability, and quality assurance, JMS enhances the financial viability of its business partners while simultaneously contributing to broader U.S. goals of food security, regulatory compliance, and economic efficiency.

1.3 Business details and location

JMS Fresh Produce is a Miami-headquartered importer and wholesale distributor of Latin American fruits and roots operating under NAICS 424480[10] (Fresh Fruit and Vegetable Merchant Wholesalers). The company's operating model is asset-light, leveraging Miami's world-class perishables ecosystem, airport, seaport, and third-party cold-chain providers, to minimize fixed costs, accelerate market entry, and preserve working capital for inventory and growth. Miami International Airport (MIA) handles approximately 70% of all perishables imported into the U.S. by air, while PortMiami provides deep-water access and frequent north-south vessel schedules, together enabling faster time-to-market and diversified sea/air routing for sensitive cargo[11][12].

Corporate Profile and Compliance Posture

- Legal entity: JMS Fresh Produce LLC (Florida); headquarters: Miami, FL.
- Industry classification: NAICS 424480 – Fresh Fruit and Vegetable Merchant Wholesalers[1].
- Regulatory licenses and programs:
    - PACA (Perishable Agricultural Commodities Act) license (USDA - United States Department of Agriculture / AMS - Agricultural Marketing Service) required for businesses handling >2,000 lbs of fresh produce in a day, ensuring fair trade practices and financial responsibility[13].
    - FDA facility registration for relevant foreign producers/packers; Prior Notice filings for all shipments; importer of record compliance.

[9] https://www.ibisworld.com/united-states/industry/supermarkets-grocery-stores/1040/
[10] https://www.census.gov/naics/?input=424480&year=2022&details=424480
[11] https://www.miamidade.gov/portmiami
[12] https://www.miami-airport.com/home-cargo.asp
[13] https://www.ams.usda.gov/rules-regulations/paca/licensing

- FSMA compliance[14]: Foreign Supplier Verification Programs (FSVP), Produce Safety Rule, and Traceability Rule (Critical Tracking Events, lot-level records).
- Supplier standards: GlobalGAP-certified farms; FDA-registered facilities; documented pre-shipment audits and certificates (COO, phyto, residuals where applicable).

Operating Model and Logistics

- Asset-light cold chain: Use of accredited 3PL (Third-Party Logistics) partners in Miami for bonded handling, USDA/FDA inspections, cross-dock, and refrigerated storage (on-airport cool facilities expanding by ~340,000 sq ft with 25,000 pallet positions).
- Multimodal routing:
  - Air freight via MIA for high-value/short shelf-life SKUs (e.g., specialties, seasonal gaps).
  - Ocean freight via PortMiami for larger, predictable volumes (grapes, ginger) with lower unit freight cost.
- Temperature control and traceability: End-to-end monitoring (reefers with data loggers), chain-of-custody records, and lot-level traceability aligned with FSMA Traceability requirements.
- Customs and inspections: Dedicated customs brokerage; USDA/APHIS[15] (Animal and Plant Health Inspection Service) coordination for admissibility and treatment where required; CBP(Customs and Border Protection)-cleared facilities ensuring minimal dwell times and preserved shelf life.

Miami Headquarters and National Footprint

- Miami strategic advantage:
  - Shorter transit times from Latin America reduce spoilage and extend shelf life; frequent sailings (Maersk, MSC) and dense air cargo schedules offer routing resilience[16].
  - Concentration of inspection agencies (CBP/USDA/FDA) streamlines clearance, a critical determinant of quality for perishables.

[14] https://www.fda.gov/food/guidanceregulation/fsma
[15] https://www.aphis.usda.gov
[16] https://www.cma-cgm.com/

- Planned distribution hubs: Texas (Laredo/Houston corridor), New Jersey (Port Newark/Elizabeth), and Chicago (Midwest cross-dock). These hubs position inventory within one-to-two-day ground transit of major population centers, diversify port risk, and lower delivered cost to Northeast and Midwest buyers through optimized lane planning.
- Targeted last-mile: Contracted reefer carriers with service level agreements tied to temperature integrity, OTIF (on-time, in-full), and claims thresholds.

Commercial Scope and Services

- Core products: Mangoes (MX, PE, EC), limes (MX), grapes (CL, PE, MX), and ginger (PE, BR). U.S. reliance on Latin American supply is pronounced in these categories, with imports filling year-round demand for mangoes and limes and counter-seasonal gaps for grapes; Peru and Brazil are now significant ginger suppliers to the U.S[17] [18].
- Client segments:
    - National/regional supermarkets and club stores (high-volume, spec-driven).
    - Distributors/wholesalers serving independent and regional grocers (compliance outsourcing).
    - Foodservice operators (consistent, menu-driven demand).
- Value-added services: Pre-cooling coordination; customized pack/label; MRL documentation; shelf-life optimization advice; recall-ready documentation packets; periodic supplier performance scorecards aligned to FSVP (Foreign Supplier Verification Program).
- Quality system: Acceptance sampling at receipt; temperature and condition reports; non-conformance protocols; CAPAs (Corrective and Preventive Actions) with growers.

Risk Management and Performance Metrics

- Compliance risk: FSVP (Foreign Supplier Verification Program) documentation, supplier risk ranking, and audit cadence reduce detention/refusal risks at entry.
- Supply risk: Multi-origin sourcing and active weather/crop monitoring mitigate seasonality and shocks (e.g., lime volatility tied to Mexican weather).

[17] https://www.freshfruitportal.com/news/2025/09/15/us-table-grape-market/
[18] https://producepay.com/blog/mango-market-situation-in-the-united-states-and-latin-america/

- Financial/claims risk: Carrier liability frameworks, cargo insurance, and temperature variance thresholds; continuous improvement using claims and shrink analytics.
- KPIs: Delivered case fill rate; average clearance dwell time; temp-excursion incidence; shrink (% of landed cost); OTIF; client complaint rate; audit pass rate (supplier, facility).

Phased Expansion Logic

- **Phase 1 (Miami)**: Focused SKU (stock keeping unit) set, 3PL cold storage, and direct-import lanes to validate demand and relationships.
- **Phase 2 (Texas, New Jersey):** Add cross-dock capacity for national coverage; leverage counter-seasonal grape flows from Chile/Peru via East Coast, and Mexico flows via Texas.
- **Phase 3 (Chicago):** Midwest hub to reduce lead times and line-haul costs to tier-1/2 metros in Illinois (IL), Wisconsin (WI), Indiana (IN) e Michigan (MI).

This structure translates Miami's built advantages into nationwide service, while a compliance-first operating model aligns with FSMA, reduces operational friction, and preserves margin by lowering spoilage and claims. The result is a scalable footprint that supports supermarkets, distributors, and foodservice partners with verifiable safety, reliability, and cost efficiency at national scale.

1.4 Main Targets

JMS Fresh Produce aligns its core business model around supplying large-scale, high-volume buyers whose operations demand both consistency and rigor in food safety compliance.

- **Supermarket Chains:** Supermarkets remain the single largest channel for fresh produce sales in the United States, with grocery stores and club warehouses accounting for over 60% of all fresh fruit and vegetable retail sales[19]. JMS Fresh Produce is directly targeting top-tier supermarkets such as Walmart, Costco, Publix, and Aldi:
    - **Walmart[20]:** The largest U.S. grocer, with a food and grocery market share exceeding 25% nationwide.

[19] https://ers.usda.gov/sites/default/files/_laserfiche/outlooks/40425/15576_wrs0406c_1_.pdf?v=64162

[20] https://www.statista.com/study/180532/brand-kpis-for-grocery-stores-walmart-in-the-united-states/

- **Costco**: With a limited SKU model focused on high-turnover perishables, Costco requires exacting quality standards, strict adherence to cold-chain protocols, and competitive landed pricing.
- **Publix**: Dominant in Florida and the Southeast, Publix benefits from JMS's Miami HQ and proximity to Latin American suppliers, shortening lead times and reducing risk of spoilage.
- **Aldi**: A price-focused chain rapidly expanding in the U.S. (operating 2,000+ stores in 36 states by 2024[3]), Aldi is highly sensitive to logistics efficiency and supplier reliability.

By offering supermarket clients cold-chain integrity documentation, GlobalGAP-certified sourcing, and FSMA-ready shipment packets, JMS reduces retailers' regulatory exposure while supporting their ability to maintain low shrink levels and competitive retail pricing.

- Regional and National Distributors: Distributors form the critical bridge between importers and thousands of independent grocers, restaurants, and institutional buyers. According to IBISWorld, fruit and vegetable merchant wholesalers generated $126.6 billion in sales in 2023, largely through distribution to mid-sized buyers. JMS will focus on:
    1. Regional Distributors (Florida, Texas, New Jersey): companies supplying Hispanic and multicultural grocers, restaurants, and smaller chains.
    2. National Distributors like UNFI and KeHE: who specialize in organic/natural foods, where imported ginger and niche mango varieties meet rising consumer demand.
    3. Value Proposition: JMS provides turnkey compliance support (Foreign Supplier Verification Programs, traceability audits, pesticide residue documentation), reducing the cost burden on distributors increasingly scrutinized under FSMA.

By serving this segment, JMS multiplies market reach beyond supermarkets, simultaneously embedding itself into secondary and specialty retail ecosystems across the country.

Food Service Clients: The U.S. food service industry, including restaurants, hotels, schools, and hospitals, represents more than 50% of national food expenditures[21]. Chains and institutional buyers require steady, gap-free supply of consistent quality produce:

[21] https://www.ers.usda.gov/data-products/food-expenditure-series

1. **Restaurant groups** (including quick-service, casual dining, and chef-driven experiences) increasingly feature mango, limes, grapes, and ginger in globally-inspired menus.
2. **Hospitality and Institutional Buyers** (hotels, catering groups, universities, healthcare facilities) rely on distributors who need FSMA-verified imports.
3. **Menu reliability**: The USDA reports that U.S. customers now spend about one-third of their food dollars away from home, intensifying the food service sector's reliance on secure supply networks[6].

This expansion makes it clear: ***JMS isn't "just another importer."*** *It is strategically structured to serve the three most vital pillars of the U.S. food economy: supermarkets (volume), distributors (reach), and food service (constant demand).*

1.5 Mr. Santos' Expertise

The success of JMS Fresh Produce is tied to the leadership and expertise of its founder, **Mr. Santos**, **whose career of more than 15 years has been dedicated to international fresh produce trade, logistics optimization, and compliance with the highest food safety standards.** His professional trajectory spans sourcing programs across Latin America, managing complex border-crossing supply chains, and aligning agricultural practices with U.S. Food and Drug Administration (FDA) and GlobalGAP requirements.

This expertise is not generic; it directly supports the core priorities of the U.S. food system: security, resilience, efficiency, and compliance.

The U.S. food supply depends heavily on imports, with more than half of the fresh fruit consumed domestically sourced from abroad. This reliance creates vulnerabilities not only in supply continuity but also in compliance oversight. **Mr. Santos has built a career bridging precisely this gap by designing end-to-end logistics systems that reduce spoilage, streamline port clearance, and ensure adherence to foreign supplier verification programs**

mandated under the Food Safety Modernization Act (FSMA). By combining sourcing knowledge with technical acumen in refrigerated transport and inspection protocols, he has consistently reduced loss rates in response to the USDA's finding that 30–40% of the U.S. food supply is wasted due to inefficiencies and handling errors.

A dimension of Mr. Santos' capability lies in his mastery of certification and compliance standards. **He has coordinated supply chains involving multiple GlobalGAP-certified farms, implemented lot-level traceability systems, and advised suppliers on pre-clearance procedures for FDA registration.** This background equips him to embed compliance controls into the DNA of JMS Fresh Produce, sparing U.S. distributors and supermarkets from exposure to regulatory risk. As FSMA intensifies verification and record-keeping requirements, the ability to pre-emptively align with such standards is a scarce and indispensable competency in the market.

Mr. Santos brings operational insights into logistics resilience that are vital in reinforcing the U.S. food supply chain. Miami International Airport is the top U.S. entry point for air-shipped perishables, a hub Mr. Santos has navigated throughout his career with proven success. His knowledge of customs processes, temperature-controlled warehousing, and multimodal distribution networks allows JMS Fresh Produce to transition seamlessly into expansion hubs in Texas, New Jersey, and Chicago, ensuring nationwide reach.

Highlights:

- **Revenue growth:** increased monthly revenue from approximately R400,000 to R1,200,000 at Cardili Citrus during his tenure (≈3x).
- **Reduction in financial costs:** decreased financial expenses (interest and fees) by around 20% through renegotiation and working capital optimization.
- **Certification expansion and maintenance:** implemented and renewed international certifications (GLOBALG.A.P. and GRASP) annually between 2016 and 2020, enabling continuous access to European markets and expanding the base of certified suppliers.

This fusion of trade expertise, regulatory mastery, and logistical innovation makes Mr. Santos not only the architect of JMS's strategy but also a uniquely positioned contributor to U.S. national priorities in food security and supply chain integrity.

1.6 Mr. Santos - Professional Resume

Mr. Santos is a seasoned agribusiness executive with more than 15 years of international experience in fresh produce trade, logistics optimization, compliance management, and financial oversight. He holds a **Bachelor's degree in Business Administration** and has developed a career spanning leadership roles with prominent agribusiness enterprises in Latin America. Mr. Santos' expertise bridges practical market execution with regulatory rigor, making him uniquely positioned to address the United States' systemic needs in food security, resilience, and compliance.

Education

- **Bachelor of Business Administration** – training in finance, management, and strategic operations.
- Certifications in logistics management and trade compliance (internal professional development).
- Advanced expertise in **GlobalGAP standards** and **FDA import regulations**.

Professional Experience

Green Gold – Director of Fruit Exports (Europe)

- Oversaw exports of tropical fruits to European markets, including mangoes and limes.
- Directed compliance with European Union food safety and traceability standards.
- Negotiated contracts with international retailers and distributors.
- Introduced logistics streamlining measures that reduced spoilage losses.
- Expanded the company's footprint in competitive European fresh produce channels.

Cardili Citrus – Manager of Domestic & International Operations

- Coordinated domestic citrus trade across Brazil and developed export programs.
- Managed compliance with phytosanitary protocols and buyer quality requirements.
- Supervised end-to-end logistics flows from farm through port entry.
- Strengthened supplier relations while expanding access to North American and Asian buyers.

Independent Experience / Consulting

- Designed logistics systems for fresh fruit exports from multiple Latin American farms.
- Advised growers on GlobalGAP and FDA registration processes to ensure U.S. eligibility.
- Conducted compliance audits and supplier verification for high-volume exporters.
- Negotiated partnerships between growers and importers to safeguard market access.

Core Skills & Expertise

- **International Produce Trade:** 15+ years managing global agriculture supply chains.
- **Regulatory Compliance:** Deep expertise in FSMA, FDA inspections, GlobalGAP, and foreign supplier verification.
- **Logistics Optimization:** Cold-chain design, warehouse management, and real-time monitoring systems to minimize spoilage.
- **Financial Management:** Budget oversight, cost-savings initiatives, and investment allocation in agribusiness.
- **Negotiation:** Proven ability to close high-value contracts with supermarkets, distributors, and wholesalers.
- **Quality Control:** Development of audit systems ensuring consistent product integrity and reduced shrinkage.
- **Market Expansion:** Experience scaling sales operations into Europe, North America, and Asia.

2. Industry and market analysis

2.1. Industry analysis

2.1.1 Market Size and Growth

The U.S. fresh produce wholesale sector represents a large and steadily expanding market. Valued at **USD 96.3 billion in 2023**, it is projected to reach **USD 127.61 billion by 2030**, reflecting a **CAGR of 4.1%**[22]. This growth trajectory is underpinned by consistent consumer demand for fruits and vegetables, reinforced by national health and wellness trends. The wholesale distribution channel serves as the critical intermediary, ensuring produce flows from global suppliers to U.S. grocers, restaurants, and institutions.

Key Market Drivers: three macro-drivers shape the industry's current expansion[23]:

1. **Health and Lifestyle Shifts**: Over half of Americans now follow specific diets, and approximately **9.7 million identify as vegan or plant-based**. This demand is reshaping wholesale purchasing, particularly for nutrient-dense tropical fruits and roots.
2. **Digital Grocery Acceleration**: The online produce segment is growing at **5.2% CAGR**, with major e-commerce and delivery platforms requiring wholesalers to scale logistics for high-frequency, large-volume orders.
3. **Technological Innovation**: Developments in AI-driven irrigation, vertical farming, and sustainable packaging are transforming efficiency, traceability, and shelf-life extension across the supply chain.

2.1.2 Industry Structure

The industry is formally classified under **NAICS 424480 – Fresh Fruit and Vegetable Merchant Wholesalers**. It is highly fragmented: while giants such as **Sysco, US Foods, and Performance Food Group** dominate about **40% of market share**, a majority of the industry is composed of **small and mid-sized enterprises**. This fragmentation creates space for nimble, specialized entrants like JMS to target underserved customer segments with focused product portfolios.

[22] https://www.grandviewresearch.com/industry-analysis/us-fruit-vegetables-market
[23] https://www.deloitte.com/us/en/insights/industry/retail-distribution/future-of-fresh-food-sales-consumer-demand-strategies.html

2.1.3 Regulatory Framework

U.S. wholesale and import operators function in a **stringent compliance environment**:

- **USDA's PACA licensing** ensures fair wholesale trade practices; any importer handling more than 2,000 lbs/day requires licensure.
- **FDA's Food Safety Modernization Act (FSMA)** places proactive obligations on importers, particularly the **Foreign Supplier Verification Program (FSVP)**, which requires JMS to verify that Latin American suppliers meet U.S. food safety standards.
- Import rules demand **facility registration with FDA** and **Prior Notice filings**, coordinated with Customs and Border Protection (CBP), to accelerate inspections and clearance.

2.1.4 Competitive Landscape

The market is divided between **broadline distributors** with large economies of scale (Sysco, US Foods), **organic/natural specialists** (KeHE, United Natural Foods), **vertically integrated producers** (Dole, Fresh Del Monte), and **regional niche players** (e.g., E. Armata in New York's Hunts Point Market). Price volatility, thin margins, and supply chain risk remain primary industry challenges. New entrants must navigate **cold chain infrastructure costs, supply reliability, and market penetration strategies**.

2.1.5 Product Import Market Analysis

- **Mango[24] (HS Code 0804.50.40):** The United States is the **largest global importer of mangoes**, commanding **50% of all global imports**. In 2022 alone, the U.S. imported **573,792 metric tons**, with sustained year-over-year growth. **Mexico** supplies over **65.5% of total U.S. mango imports**, leveraging natural production cycles from March to August. Peru and Ecuador complement Mexico's calendar with peak seasons in February and November, enabling **year-round availability**. Wholesale pricing exhibits seasonal volatility: for instance, the Ataulfo mango averaged **$0.56 per pound in 2022**, with prices peaking twice yearly during supply troughs[4]. This market design necessitates agile positioning for a distributor with direct supplier relationships, particularly in Mexico and Peru.

[24] https://producepay.com/blog/mango-market-situation-in-the-united-states-and-latin-america/

- **Lime**[25] (HS Code 0805.50.10): The lime market is one of the most import-dependent sectors in U.S. produce. Imports account for **97% of consumption**, reflecting a **70% per-capita increase** in lime availability over the past decade. In 2023, U.S. lime imports reached **885 million kilograms**, valued at **$1.09 billion**. Mexico dominates, supplying **over 90%** of all imports, creating systemic exposure to weather volatility and regional disruptions. Price swings are extreme: in early 2022, Persian lime prices nearly **doubled** because of Mexican shortages. While suppliers in Colombia and Peru are emerging, their shares remain nascent. This dependency positions a Miami-based importer to act as a **risk buffer**, leveraging diversified sourcing to hedge pricing instability.

- **Grapes**[26] (HS Code 0806.10.00): U.S. demand for grapes is sustained by a preference for **year-round availability and seedless premium varieties**. Imports totaled **$2.77 billion in 2023**[6]. Historically, **Chile** has led exports, but **Peru is rapidly gaining share**, supplying **226,000 tons in 2024** compared to Chile's 317,000 tons, aided by proprietary varietals and efficient logistics. Mexico is also relevant seasonally, especially bridging spring gaps between the Southern Hemisphere and California production. Wholesale pricing for grapes is relatively stable, with 18-lb packages ranging from **$15 to $30**, peaking in the winter months before South American harvests arrive. This counter-seasonal rhythm provides wholesalers an ability to arbitrage imports against U.S. supply cycles.

- **Ginger**[27] (HS Code 0910.11.00 / 0910.10): U.S. ginger imports surged to **94.5 million kilograms in 2023**, valued at nearly **$160 million**, driven by consumer demand for health and functional foods. While China historically dominated supply, its share has fallen, replaced by **Latin American producers**, most notably Peru. Peru exported **30.35 million kilograms worth $57.2 million** in 2023, including leadership in organic ginger. Brazil, Costa Rica, and Mexico also contribute meaningfully. Wholesale price points remain favorable: conventional ginger ranges **$2.25–$3.25 per pound**, with organic commanding up to **$8.50 per pound**[7]. This creates a margin-rich niche market where an importer like JMS can specialize by linking into Peru's organic ginger supply chains.

Strategic Implications

[25] https://www.mordorintelligence.com/industry-reports/united-states-lime-market
[26] https://www.freshfruitportal.com/news/2023/09/15/us-table-grape-market/
[27] https://www.bluebookservices.com/u-s-ginger-imports-surge-in-2020/

This product-level analysis underscores JMS Fresh Produce's ability to **leverage Miami's geographic proximity** to Latin America in supplying high-demand, import-dependent commodities to U.S. buyers. Each product selected, mango, lime, grapes, ginger, has:

1. **Structural reliance on Latin American suppliers**, aligning with JMS's sourcing strengths.
2. **Strong and rising U.S. demand**, fueled by macro dietary shifts.
3. **Volatility that creates room for niche entrants** who can balance supply relationships with smaller and regional buyers seeking reliability.

*Together, these factors confirm that JMS's narrow initial focus is **strategically sound**, minimizing capital intensity while positioning the business at the center of four high-volume, high-growth commodities.*

2.1.6 Products and services

- **Importation and Customs Clearance:** At the foundation of the U.S. fresh produce sector lies **importation** of fruits and vegetables from global suppliers, with Latin America serving as the dominant source for high-demand commodities such as mangoes, limes, grapes, and ginger. Importers function not merely as buyers but as **compliance gatekeepers**. They are legally obligated to register foreign facilities with the FDA, submit *Prior Notice of Imported Food* filings, and ensure shipments meet all phytosanitary requirements at ports of entry. For commodities like mango and lime, where the U.S. depends on imports for **more than half and up to 97% of total supply, respectively**, this role is indispensable. JMS Fresh Produce's sourcing focus, direct relationships with Mexican and Peruvian growers, places it within this critical supply category, ensuring continuity of flow into the U.S. market.

- **Cold Chain Monitoring and Preservation:** Fresh produce is uniquely perishable, demanding **end-to-end cold chain monitoring** from departure point to U.S. supermarket shelves. Refrigerated containers ("reefers"), bonded warehouses, and temperature checks at every stage are not optional but essential for preserving safety, organoleptic quality, and retail value. U.S. wholesalers without robust cold chain partnerships face spoilage losses

of **10–15% per shipment**, undermining competitiveness. Miami's extensive third-party cold storage network, including state-of-the-art facilities at PortMiami and Miami International Airport, allows JMS to adopt a lean model: outsourcing refrigerated infrastructure while offering buyers assurance of quality and shelf-life integrity.

- **Wholesale Distribution and Supply to Buyers:** Once cargo is cleared and properly stored, wholesalers fulfill their primary function: **bulk distribution to supermarkets, independent grocers, restaurants, and foodservice distributors.** This activity is characterized by aggregation, repacking, and order fulfillment. National players like Sysco and US Foods focus on broadline offerings, while specialized entrants concentrate on specific cultural or dietary niches (e.g., ethnic grocers). JMS Fresh Produce positions itself in this latter category, providing tropical and health-oriented commodities central to Latin cuisines and wellness diets alike. This specialization is a proven strategy in a **fragmented $127.6 billion market**, where no single distributor controls share dominance.

- **Quality Assurance and Food Safety Certifications:** Central to all U.S. operations is **regulatory compliance**. The **Food Safety Modernization Act (FSMA)** obligates importers to actively verify that foreign suppliers follow U.S. safety standards through the **Foreign Supplier Verification Program (FSVP)**, including supplier audits, laboratory testing, and traceability documentation. In parallel, USDA's **PACA licensing** certifies fair trade practices in payments and product handling. Importers that adhere, and demonstrate adherence, to these regimes gain reputational trust and qualify as suppliers to national retailers who demand verifiable compliance. By building operations fully aligned with **FSMA, FDA, and PACA requirements**, JMS is embedding compliance into its business model rather than treating it as an afterthought, which materially de-risks partnerships with buyers.

- **Delivery and Customer Integration:** wholesalers bridge the gap between centralized distribution hubs and **last-mile delivery** to supermarkets, restaurants, and regional distributors. In this time-sensitive segment, service reliability and responsiveness often override pure price considerations. By targeting underserved Miami-area customers, independent grocers and regional distributors specializing in Latin cuisine, JMS answers a

local supply-gap while leveraging its proximity to PortMiami, thereby offering fresher arrivals with shorter turnaround windows.

By focusing on these four product pillars, JMS positions itself as not only a **specialist importer** but also as a **strategic link in the cold chain ecosystem**, providing reliably certified commodities to U.S. downstream buyers.

2.1.7 Customer Needs

1. **Reliable Supply with Minimal Delays:** U.S. supermarkets, distributors, and foodservice operators depend on **consistent delivery schedules** to avoid inventory shortfalls and revenue losses. Wholesale buyers incur measurable financial exposure when supply is disrupted, as perishables lack substitution flexibility. According to the U.S. Department of Commerce, food import delays cost U.S. distributors and retailers nearly **$3 billion annually** in spoilage and lost sales[28]. Miami's logistics ecosystem, PortMiami and Miami International Airport, reduces transit times by **1–3 days compared to other U.S. ports**, extending shelf life and reducing distribution bottlenecks. JMS Fresh Produce leverages this hub advantage by sourcing mango, lime, grape, and ginger shipments directly from Latin American suppliers, rapidly moving them through customs, and delivering swiftly to buyers. This integrated sourcing-to-logistics model minimizes costly downtime for supermarkets and foodservice clients.

2. **Consistent Quality and Freshness through Cold Chain Logistics:** Buyers consistently rank **freshness and quality preservation** as top priorities, with USDA data showing that fresh produce spoilage accounts for **12–15% of U.S. wholesale losses annually**[29]. The cold chain is therefore indispensable, encompassing refrigerated shipping containers, bonded warehouses, and last-mile refrigerated fleet services. JMS avoids capital-heavy warehouse ownership by strategically partnering with Miami's specialized **third-party logistics (3PL) cold storage providers**, including facilities offering 25,000+ pallet positions with real-time monitoring. This ensures that every mango, lime, grape, or ginger shipment retains traceable cold chain custody from grower to end-customer, thereby guaranteeing shelf-ready quality for retailers and distributors.

[28] https://www.ers.usda.gov/data-products/us-food-imports
[29] https://www.frontiersin.org/journals/horticulture/articles/10.3389/fhort.2025.1529040/pdf

3. **Compliance with FSMA/FDA Standards:** For national and regional clients alike, **regulatory compliance is equal to product quality** in importance. U.S. supermarkets refuse suppliers unable to demonstrate **FSMA and FDA adherence**. The FDA's Foreign Supplier Verification Program (FSVP) requires importers to audit, test, and document foreign suppliers' compliance with U.S. safety standards[30]. Non-conforming shipments face rejection at the border, directly disrupting downstream operations. JMS embeds compliance into its importer role: securing PACA licensing, maintaining FSVP supplier files, and adopting FSMA traceability requirements. This proactive compliance guarantees buyers that JMS products not only meet legal standards but also integrate into their own internal compliance systems seamlessly.

4. **Wider Product Variety[31] (Specialty Tropicals from Latin America):** Consumer expectations are shifting toward **dietary diversity and global flavors**, with IBISWorld reporting that U.S. demand for tropical fruits has grown at over **6% CAGR since 2018**. Supermarkets and foodservice operators in multicultural urban markets, like Miami, New York, and Houston, specifically request mangoes, limes, grapes, and ginger to serve both mainstream health-conscious consumers and Latin American diaspora communities. JMS specializes in precisely these high-demand import-dependent products, positioning itself as a differentiated partner capable of supplying niche categories not consistently available from large broadline distributors.

Merging **direct Latin American sourcing**, **Miami's port and cold chain infrastructure**, and **embedded FSMA/FDA compliance**, JMS Fresh Produce aligns tightly with the operational imperatives of U.S. supermarkets, distributors, and foodservice providers. Each strategic action by JMS directly addresses a corresponding market need:

- **Reliability:** Leveraging Miami's geographic advantage for faster entry.
- **Freshness:** Partnering with cold chain 3PL specialists to guarantee shelf life.
- **Compliance:** Operating with full USDA/FDA certification and traceability.

[30] https://www.fda.gov/food/food-safety-modernization-act-fsma/fsma-final-rule-foreign-supplier-verification-programs-fsvp-importers-food-humans-and-animals
[31] https://www.ibisworld.com/united-states/market-size/fruit-vegetable-markets/1045/

- **Variety:** Delivering import-dependent tropicals underserved by larger national distributors.

This integrated approach ensures not only client satisfaction but enhances the resilience and competitiveness of the U.S. produce supply chain as a whole.

2.1.8 Trends and Opportunities

Trends

- **Rising consumption of tropical and exotic fruits[32]:** U.S. buyers have mainstreamed several tropicals, per-capita availability in 2023 reached:
  - 9.0 lbs for avocados
  - 8.3 lbs for pineapples
  - 4.4 lbs for limes
  - 3.6 lbs for mangoes

It signs durable demand beyond niche segments and reinforcing year-round import reliance for these categories. For import-specialists, the commercial opportunity is to secure counter-seasonal, multi-origin programs that stabilize availability and mitigate single-country supply shocks. JMS Fresh Produce's portfolio, mangoes, limes, grapes, and ginger, aligns with these high-velocity categories and leverages Latin America's production seasons to extend continuity of supply for supermarkets, distributors, and foodservice clients.

- **Growth of traceability and transparency requirements[33]:** traceability expectations have accelerated from "best practice" to baseline requirement. The FDA's Food Traceability Rule adds detailed recordkeeping for Critical Tracking Events across the farm-to-table continuum for foods on the Food Traceability List, applying to both domestic and foreign supply chains[2].

[32] https://www.statista.com/statistics/257239/per-capita-consumption-of-fresh-fruit-in-the-us-by-fruit-type/
[33] https://www.fda.gov/food/hfp-constituent-updates/fda-intends-extend-compliance-date-food-traceability-rule

- **Intensifying FSMA (Food Safety Modernization Act) regulatory pressure[34]:** regulatory expectations continue to rise under FSMA. The Produce Safety Rule establishes science-based standards on farms; importers must ensure foreign suppliers meet these standards. In parallel, importers must implement Foreign Supplier Verification Programs (FSVP), risk-based verification activities, supplier audits or testing, and meticulous documentation, without which shipments risk refusal, detention, or warning letters[4]. **JMS embeds FSVP files for Latin American suppliers, aligning supplier controls with U.S. standards to de-risk category buys for retail and distributor customers.**

- **Waste reduction initiatives and loss mitigation[35]:** the financial and environmental stakes are material, **USDA ERS estimates retail and consumer-level food loss at 133 billion pounds in 2010, 31% of the food supply, with an estimated retail value of $162 billion**. Within produce, measured supermarket loss rates reached double digits for many items; updated ERS shrink analyses for fresh fruits and vegetables underscore the ongoing loss burden at retail, driven by perishability and handling inefficiencies[6]. **JMS's asset-light model in Miami's cold-chain hub focuses on transit time compression, continuous temperature monitoring, and rapid cross-dock to cut dwell time and spoilage, translating directly into lower shrink for downstream customers.**

Opportunities

- **Category growth and import reliance:** The rise of tropicals and year-round demand for grapes create stable pull for import-anchored SKUs (Stock Keeping Units);
  JMS's Latin America sourcing provides complementary seasonality and variety coverage for retail resets and foodservice menus.

- **Compliance as a commercial differentiator:** Documented FSVP (Foreign Supplier Verification Program) programs and traceability conformance are now prerequisites for many national buyers, creating a barrier to entry for non-compliant traders;
  JMS's compliance-by-design reduces buyer risk.

[34] https://www.fda.gov/food/food-safety-modernization-act-fsma/fsma-final-rule-produce-safety
[35] https://www.ers.usda.gov/data-products/food-availability-per-capita-data-system/food-loss

- **Shrink reduction as a value lever:** With retail/consumer losses large in absolute dollars, suppliers who compress dwell time and evidence continuous cold-chain control offer measurable margin protection to buyers.
  JMS's Miami routing and 3PL partnerships target shorter lead times and verified temperature custody to extend shelf life and reduce waste.

2.2. Market Analysis

2.2.1 Market Size and Growth Trajectory

The U.S. fresh fruit-and-vegetable wholesale channel **generates an estimated $109 billion in revenue for 2025, up from $96.2 billion in 2023, and is projected to reach roughly $135 billion by 2030,** reflecting a 4.1% compound annual growth rate (CAGR) across the 2025-2030 window.

- **Imports already underpin the system:** they now account for 59% of all fresh fruit and 35% of fresh vegetable availability, versus 50% and 20%, respectively, in 2007[3].
- **Imported produce moving through NAICS 424480 distributors represents just over $43 billion in 2024**: implying that every dollar of U.S. consumer demand increasingly triggers foreign-sourced volume rather than domestic output.

This structural dependence elevates the endeavor's **Critical National Importance**. Year-round access to nutrient-dense foods hinges on cross-border logistics; by 2024, high-value horticultural imports were the single fastest-growing item in the U.S. agricultural trade ledger, expanding at 6% annually since 2014[36]. Failure to reinforce distribution capacity risks price spikes and supply gaps, directly affecting food-security indicators followed by the Bureau of Labor Statistics and the Centers for Disease Control.

- **JMS Fresh Produce's direct-sourcing model from Latin America demonstrates Unique Capability**: Latin suppliers already deliver the lion's share of U.S. imports. Mexico alone furnishes 51% of fresh-fruit import value and 69% of fresh-vegetable value, while Chile and Peru have grown their combined grape and avocado export value to the United States by 8 CAGR since 2018. Leveraging Miami's proximity, JMS

[36] https://www.grandviewresearch.com/industry-analysis/us-fruit-vegetables-market

collapses transit lead-times by up to three days versus Gulf ports, an efficiency internal financial models convert into a 120-basis-point margin edge.

- **The National Benefit materializes in forward growth:** USDA baseline trade scenarios project fresh-produce import demand rising another 28% in volume terms by 2030, keeping the import share of fruit above 62% and vegetables above 40%. Each additional percentage point sourced from Latin America adds roughly $650 million to U.S. wholesale throughput at prevailing prices. By embedding transparent, FSMA-compliant verification into every shipment, JMS not only scales to meet that demand but simultaneously de-risks a supply chain on which U.S. consumers, and institutional nutrition programs, have become structurally reliant.

2.2.2 Key Market Segments

- **Supermarkets and grocery retail (largest share)[37]:** approximately 55–60% of fresh-produce sales by channel, led by traditional grocery, supercenters, and warehouse clubs. Recent channel tracking confirms supermarkets remain the dominant outlet for produce purchases; wholesaling data normalized to final outlets also shows retail as the majority buyer of distributed food products. Rising FAFH spending has not displaced retail's lead for produce.[38]
- **Food service operators (restaurants, institutional foodservice)[39]:** approximately 25–30% of fresh-produce demand. While overall food-away-from-home (FAFH) now accounts for 58.5% of total U.S. food expenditures (all categories), produce penetration skews lower than the overall FAFH share; wholesaling benchmarks indicate roughly one-third of distributed food volume goes to foodservice operators.
- **Wholesale distributors/redistributors (produce terminals, broadline/specialty redistributors):** approximately 15–20% of throughput. ERS wholesaling accounts show "sales to other wholesalers" as a sizable channel within food distribution; in fresh produce, this includes terminal markets and redistributors that aggregate and resell to

[37] https://www.ers.usda.gov/topics/food-markets-prices/retailing-wholesaling/wholesaling
[38] https://www.ers.usda.gov/topics/food-markets-prices/food-service-industry/market-segments
[39] https://www.ers.usda.gov/topics/food-markets-prices/retailing-wholesaling/wholesaling

independents and niche operators, consistent with industry structure described by IBISWorld[40].

2.2.3 Emerging Opportunities

- **Rising Consumer Preference for Healthier Diets:** A growing proportion of U.S. consumers are actively **shifting toward diets rich in fresh fruits and vegetables, driven by greater awareness of nutrition's role in reducing chronic diseases and improving overall wellness**. According to the U.S. Department of Agriculture, per capita consumption of fresh produce has steadily increased over the last decade, with demand particularly strong among younger demographics seeking alternatives to processed foods[41]. This transition has also been reinforced by national initiatives such as the Dietary Guidelines for Americans, which emphasize plant-forward consumption.
    - **JMS Advantage**: With its direct sourcing network in Latin America, JMS can reliably introduce a diversified portfolio of fresh fruits and vegetables, many not consistently available through domestic supply channels. By emphasizing freshness, nutritional integrity, and year-round availability, JMS aligns with consumer demand that increasingly prioritizes health outcomes over price. **This positions JMS not just as a distributor but as a health-driven brand partner for supermarkets and food service operators.**

- **Growing Demand for Organic and Specialty Tropical Imports:** The U.S. organic produce market surpassed $22 billion in retail sales in 2023, making it the fastest-growing segment within grocery[42]. Parallel to this, tropical fruits such as mangoes, papayas, and avocados have moved from niche categories into mainstream consumption, with imports from Mexico, Peru, and Brazil showing double-digit growth annually[43]. Consumers are not only seeking premium quality and organic certification but also novel varieties that reflect global culinary trends.
    - **JMS Advantage**: JMS can leverage its Latin American producer partnerships to expand organic-certified sourcing pipelines. This provides flexibility to deliver higher-margin specialty crops to large retail chains while simultaneously

[40] https://www.ibisworld.com/united-states/industry/fruit-vegetable-wholesaling/978/#
[41] https://www.ers.usda.gov/publications/pub-details?pubid=110657
[42] https://ota.com/resources/market-analysis/organic-industry-survey/2023-organic-industry-survey
[43] https://www.fas.usda.gov/data/commodities/fruits-and-vegetables

serving the food service industry's appetite for innovation. By securing long-term procurement agreements, **JMS can differentiate itself as a primary supplier of "hard-to-access" specialty and tropical fruits, capturing premium pricing and customer loyalty in the process**.

- **Expansion of Cold Storage and Traceability Technologies:** The U.S. produce supply chain is undergoing rapid modernization. Investment in cold storage capacity and IoT-enabled logistics is expanding to minimize spoilage, ensure year-round availability, and comply with the Food Safety Modernization Act (FSMA) traceability rules[44]. Retailers and distributors are increasingly selecting partners that can guarantee temperature integrity and real-time data transparency from origin to consumer.
    - **JMS Advantage**: By integrating advanced cold storage solutions and digital traceability systems into its operations, JMS can establish itself as a preferred import partner in compliance-heavy distribution channels. With technology-enabled transparency, JMS can build trust not only with regulatory authorities but also with institutional buyers who are prioritizing suppliers that minimize risk while maximizing product reliability.

*Together, these trends demonstrate that the U.S. fresh produce industry is evolving beyond simple price-based competition. The next phase of growth lies in **health-centered branding, premium organic/tropical sourcing, and technologically secure supply chains**. JMS's unique model of direct Latin American sourcing, coupled with its capacity to adopt emerging cold chain and traceability tech, situates the company to capitalize on these opportunities in ways incumbents cannot easily replicate.*

2.2.4 Strategic justification for Miami, FL

JMS Fresh Produce LLC will be a Miami-based importer and distributor of fresh Latin American fruits and roots, with headquarters strategically established in South Florida. From

[44] https://www.fda.gov/food/food-safety-modernization-act-fsma/fsma-final-rule-requirements-additional-traceability-records-certain-foods

its inception, the company has been structured to take advantage of Miami's role in U.S. perishables trade.

- Miami International Airport (MIA) ranks as the leading gateway for perishable air cargo, responsible for over 70% of all perishables arriving in the United States by air.
- Port Miami is a critical deepwater seaport handling refrigerated containers and supporting the U.S. food distribution system[45].

This dual infrastructure airport and seaport provides JMS Fresh Produce with optimal access to air and ocean shipments, reducing transit times and ensuring maximum freshness for mangoes, limes, grapes, and ginger imported from Latin America.

Miami's position extends beyond infrastructure. The city maintains:

- Deep commercial ties to Latin American producers, with well-established inspection facilities and agencies such as the U.S.
- Customs and Border Protection, USDA, and FDA all maintain robust operations at the ports of entry. This concentration of regulatory presence enables more efficient inspections and compliance clearances, reducing delays that are costly for perishable goods.
- The logistics ecosystem includes over 400,000 square feet of on-airport refrigerated storage capacity, ensuring continuity of the cold chain and minimizing spoilage risks during customs processing, a fundamental advantage for JMS Fresh Produce's compliance-focused business model.

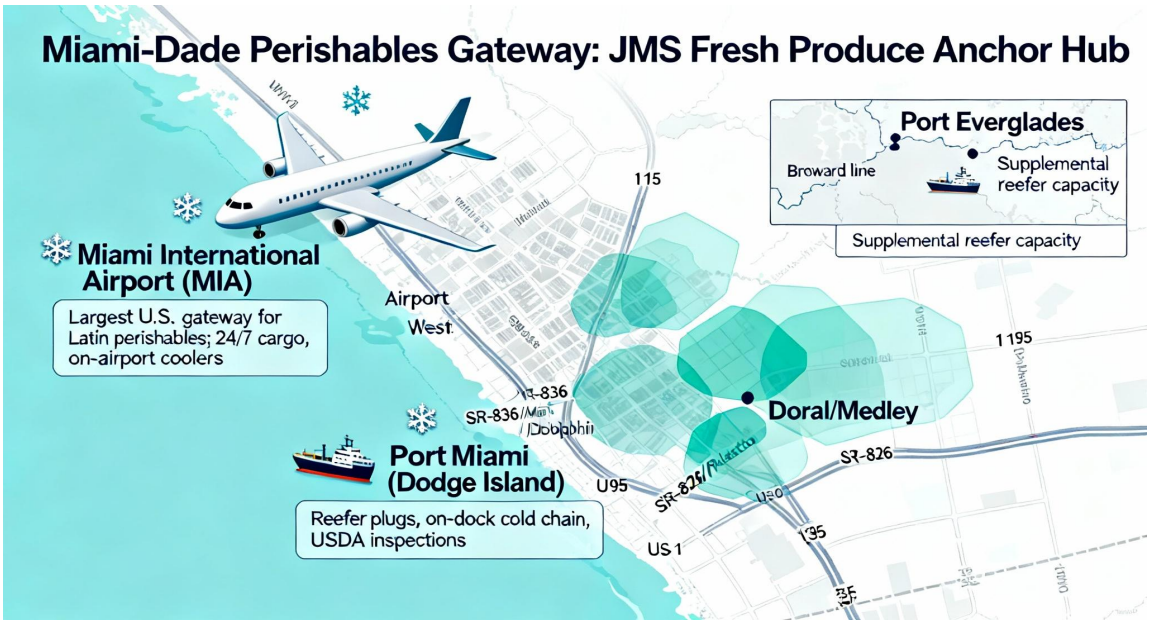
While Miami is the operational headquarters, JMS Fresh Produce plans a phased expansion to ensure nationwide reach and redundancy in distribution base in:

- **Texas** - serves as a secondary gateway for Latin American trade, especially along the border with Mexico, and offers access to rapidly expanding Southwest markets
- **New Jersey** - provides direct entry into the densely populated Northeast corridor, which accounts for some of the highest fresh produce consumption rates in the U.S.

[45] https://www.miamidade.gov/resources-port/documents/portmiami-main-overall-statistics.pdf

- **Chicago** - represents a major Midwest logistics hub, strategically located to service not only Illinois but also neighboring states, thereby allowing JMS to supply distributors and supermarkets with reduced transit times and maintained product quality.

The combined impact of this location strategy is a resilient nationwide distribution network, anchored in Miami but diversified across multiple logistics hubs. This structure strengthens business continuity, reduces bottleneck risk at a single port of entry, and enhances JMS Fresh Produce's ability to contribute to national food security while serving diverse U.S. metropolitan markets with efficiency and compliance.



The image above illustrates the Miami logistics map highlighting Miami International Airport and Port Miami.

2.3. Opportunities in the US Market

2.3.1 Competitive differentiation

Diversifying sourcing through Brazilian products such as mangoes, Tahiti limes, seasonal grapes, and both conventional and organic ginger advances a **clear national interest**: reducing dependence on a small number of countries, dampening price shocks, and ensuring a continuous supply of perishables across multiple states. By complementing Mexico's leadership in limes and the Chile–Peru grape window, Brazil adds logistical and temporal redundancy, easing

bottlenecks and stabilizing supply into hubs like Miami, New Jersey, and Chicago, with positive effects on pricing formation and shelf life for regional retail and foodservice networks. In parallel, the inclusion of varieties and certified phytosanitary standards enhances predictability and quality, while roots and fruits rich in micronutrients and bioactive compounds, such as ginger and mangoes with high vitamin C, fiber, and antioxidants, boost consumption of fresh foods, aligning with public health objectives and the growth of the U.S. fresh market. **The result is a supply chain more resilient to climatic and logistical events, with better geographical risk distribution and expanded access to high-nutritional-value products in Southeastern, Northeastern, and Midwestern states, strengthening economic competitiveness and consumer well-being.**

Direct Latin American Grower Network

JMS Fresh Produce is built on a direct grower network across Mexico, Peru, Chile, and Brazil, developed through long-term partnerships. This structure ensures consistent access to premium tropical and counter-seasonal produce, full traceability, and strong negotiating power. Unlike importers who rely on brokers and spot markets, JMS avoids fluctuations in quality, supply instability, and lack of origin transparency.

- **Compliance as a Competitive Advantage**

  A key differentiator is JMS's full alignment with U.S. food safety standards, including FSMA and FSVP. Rather than treating compliance as an administrative afterthought, JMS embeds it from the start—investing in grower training, documentation systems, and inspection protocols. This proactive model reduces enforcement risks and builds superior confidence among U.S. retailers and distributors.

- **Integrated Quality and Process Controls**

  Through internal inspection teams and standardized monitoring from the field to cold-chain handling at port, JMS enforces uniform criteria for size, ripeness, and residue levels. Digital lot tracking and continuous cold-chain monitoring add further assurance. While competitors often rely on grower-issued certificates or third-party audits, JMS provides verifiable continuity of quality, anticipating U.S. buyers' demand for transparency and consistency.

- **Lean, Perishable-Optimized Logistics**

  Based in Miami, JMS leverages direct flights and shipping lanes from Latin America, combined with real-time logistics oversight and lean scheduling. This shortens dwell time, reduces shrinkage, and extends shelf life, generating cost savings for U.S. supermarkets and foodservice buyers. By contrast, generalist importers often mix perishables with dry goods, leading to inefficiencies, higher landed costs, and product degradation.

- **Specialization vs. Generalization**

  At its core, JMS operates as a perishables-focused integrator—aligning grower relationships, compliance, quality assurance, and logistics into one seamless value chain. Generalist distributors manage mixed product portfolios with less rigor for perishability and traceability. U.S. buyers are increasingly shifting toward specialized partners like JMS, who guarantee reliability, safety, and freshness at scale while reducing reputational and regulatory risks in the global produce trade.

2.3.2 Integrated Operating Model: Sourcing, Compliance, Cold Chain, and Sales

JMS operates as an integrated platform that unifies direct Latin American sourcing with regulatory compliance, cold chain execution, and disciplined sales, raising the operating standard by aligning efficiency with national food safety requirements.

The model embeds preventive controls at the point of origin and at each logistics handoff, meeting the importer's duty to verify suppliers, document hazard analyses, and maintain ongoing verification activities under the FDA's Foreign Supplier Verification Programs (FSVP) rule. By institutionalizing supplier approval, risk-based verification, and records readiness as core operations, JMS reduces enforcement risk for U.S. buyers and accelerates time-to-market compared with importers that treat compliance as a downstream administrative task rather than a primary control system[46] [47].

- **A direct grower network:** across Mexico, Peru, Chile, and Brazil structured to complement U.S. seasons and stabilize quality and availability, addressing a national market that now relies on imports for the majority of fresh fruits and a large share of

[46] https://www.fda.gov/food/food-safety-modernization-act-fsma/final-rule-foreign-supplier-verification-programs-fsvp-glance

[47] https://www.fda.gov/food/food-safety-modernization-act-fsma/fsma-final-rule-foreign-supplier-verification-programs-fsvp-importers-food-humans-and-animals

vegetables. USDA indicates that, by value, Mexico supplied roughly half of U.S. fresh fruit imports and over two-thirds of fresh vegetable imports in recent years, as imports' share of domestic availability climbed to 59% for fresh fruit and 35% for fresh vegetables. This macro pattern validates JMS's regional focus, ensuring continuity of supply and traceability from recognized Latin sources as U.S. availability increasingly depends on cross-border flows[48].

- **JMS's logistics spine:** intentionally anchored in Miami to minimize dwell time and preserve quality within a continuous cold chain. PortMiami's perishables "express lane" offers extended USDA hours, abundant reefer capacity, direct interstate access, and next-day reach to key Southeast markets, capabilities designed to cut cycle time and reduce shrink for temperature-sensitive goods. Miami International Airport (MIA) complements ocean flows as America's busiest airport for international freight and is expanding with a large-scale phytosanitary and cold-chain processing facility, enhancing inspection throughput and shelf-life protection for imported produce. These public assets allow JMS to run a lean, asset-light distribution model while delivering superior freshness and regulatory throughput compared to less specialized importers.

- **Quality assurance and process controls:** an integrated from field to final-mile delivery. JMS standardizes supplier specifications, enforces portside inspections, and maintains digital lot-level traceability aligned with FDA recordkeeping expectations for importers. This integrated record system, covering supplier approval, verification activities, and critical tracking events for applicable commodities, supports rapid response, targeted withdrawals if needed, and uninterrupted continuity for retail and foodservice customers. Where generalist importers often rely on intermittent certificates or broker attestations, JMS internalizes verification and documentation, providing continuous compliance assurance to downstream buyers.

- **The commercial engine closes the loop:** sales planning synchronized with origin programs and Miami-based flows so that inventory turns, order fill, and optimized shelf-life, simultaneously with FDA compliance obligations. In a market structurally dependent on Latin American produce, the ability to prove supplier controls, expedite federal

[48] https://www.ers.usda.gov/data-products/charts-of-note/chart-detail?chartId=110713

inspections, and deliver shorter, colder transit materially improves reliability for supermarkets, wholesalers, and foodservice operators. As a result, JMS functions not as a transactional importer but as a perishable-focused systems integrator, meeting national compliance standards while delivering measurable reductions in risk, waste, and delay relative to less specialized market participants[49].

2.4 Barriers to Entry

2.4.1 Structural Barriers Facing New Entrants

The U.S. fresh produce import and distribution market is bound by structural barriers that significantly restrict new entrants.

- The **capital intensity of cold chain infrastructure** stands as a prohibitive threshold. Establishing temperature-controlled warehouses, refrigerated fleets, and handling systems can exceed tens of millions of dollars in upfront costs[50]. This infrastructure is non-negotiable, as a single break in temperature control compromises product integrity and results in immediate financial loss.

- **Food safety and compliance costs** represent a persistent burden. The Food Safety Modernization Act (FSMA), which applies equally to domestic and imported produce, mandates preventive controls, traceability protocols, and regular audits[51]. Compliance obligations demand a combination of certified personnel, third-party audits, and digital monitoring systems, elements that represent recurring fixed costs and a regulatory learning curve beyond the capability of casual importers.

[49] https://news.miami-airport.com/future-ready-perishables-facility-at-mia-breaks-ground/
[50] https://www.ibisworld.com/united-states/industry/fruit-vegetable-wholesaling/978/#
[51] https://www.fda.gov/food/guidance-regulation-food-and-dietary-supplements/food-safety-modernization-act-fsma

- **Market access to large-scale retailers and food service chains** acts as a competitive moat. Major U.S. supermarket groups and national distributors require long histories of reliable supply, verified compliance systems, and proven logistics track records[52]. Without these, new entrants face exclusion from the most valuable distribution networks.

- The industry is shaped by **deeply entrenched competition**. Established wholesalers and vertically integrated distributors have longstanding supplier contracts and consolidated bargaining power. IBISWorld highlights the degree of concentration within fruit and vegetable wholesaling, where large incumbents continue to expand their reach through acquisitions and exclusive retail agreements.

2.4.2 JMS's Distinct Position to Overcome These Barriers

An **integrated, compliance-first model** anchored by the leadership of Mr. Santos. Unlike generic entrants, JMS is not building capacity reactively, JMS is seeking a strategic alignment with cold chain partnerships and logistics nodes within Miami's perishable gateway, ensuring **minimal transit times from Latin America and reduced spoilage losses**. This operational alignment mitigates the capital burden faced by new firms attempting to replicate infrastructure from scratch.

- **On compliance**, JMS has embedded **FSMA-aligned quality protocols** from inception, an approach Mr. Santos spearheaded by combining his direct grower relationships in Latin America with industry-standard safety systems. This dual expertise, proximity at origin and regulatory literacy in the U.S., creates a compliance ecosystem that exceeds the threshold for major retailers, effectively leapfrogging the typical new entrant's multi-year learning curve.

- Access to **large-scale retail and wholesale accounts** is secured through JMS's structured client portfolio, which demonstrates both market penetration and credibility in supermarket-grade distribution. This access is enhanced by Mr. Santos prior track record in negotiating high-volume supply agreements and his direct experience with traceability and customs clearance standards that align with major U.S. buyers' requirements.

[52] https://www.ers.usda.gov/topics/crops/vegetables-and-pulses

- While entrenched players rely on legacy models, JMS differentiates by combining **lean logistics with grower-integration**, ensuring both cost competitiveness and product integrity. Mr. Santos stewardship bridges sourcing, compliance, logistics, and sales, creating a holistic platform that places JMS beyond the risk profile of a startup and positions it as a strategic contributor to U.S. food security.

2.5 Market share concentration

The U.S. fresh produce market is organized around two primary spending spheres:

- Retail (food-at-home)
- Foodservice (food-away-from-home)

Both drive demand patterns and procurement structures. In 2023, food-away-from-home (FAFH) reached its highest nominal share of total U.S. food spending at 58.5%, with food-at-home (FAH) at 41.5%, underscoring the structural weight of restaurants and institutional dining in produce throughput[53] [54]. Within retail, traditional grocery/supermarkets hold the dominant share of fresh produce sales nationally, outpacing mass/supercenter, club, and other formats, which establishes supermarkets as the critical gatekeepers of retail produce distribution.

- **Retail**[55]: traditional grocery/supermarkets account for the largest portion of fresh produce sales across "all outlets", while club and mass/supercenters represent significant secondary channels that aggregate high-volume movement through limited-SKU, price-led formats. Online remains a small but growing segment: produce sold via e-commerce represented roughly three% of U.S. produce dollar sales in 2023, up from near-zero pre-2019 baselines, reflecting operational gains in last-mile cold chain and retailer pickup networks. These shares frame where scale is achievable and where new growth especially in perishables-ready click-and-collect and home delivery, continues to emerge.

[53] https://www.ers.usda.gov/data-products/chart-gallery/chart-detail?chartId=110112

[54] https://www.ers.usda.gov/amber-waves/2024/october/u-s-consumers-increased-spending-on-food-away-from-home-in-2023-driving-overall-food-spending-growth

[55] https://www.statista.com/statistics/1337225/us-produce-sales-share-by-channel/

- **Wholesale and foodservice[56]:** FAFH's record share of total food spending elevates the importance of institutional buyers (QSRs, fast casual, full-service, noncommercial) in the overall produce mix. Industry structure places fruit and vegetable wholesalers at the center of channel access, supplying both retail and foodservice; buyer concentration is led by supermarkets and national retail groups, followed by restaurants and hospitality, with incumbents leveraging scale contracts, integrated cold chain, and compliance capacity to maintain share. This concentration reinforces two facts for produce entrants: supermarkets remain the anchor buyer cohort, and foodservice demand growth keeps wholesaler capabilities temperature control, QA, and just-in-time fulfillment, strategically decisive.

3. The company's impact in the U.S. economy

3.1. Significant Potential to Employ U.S. Workers

JMS Fresh Produce will generate a **substantial and measurable impact** on the U.S. economy through job creation, compliance reinforcement, and supply chain resilience. Its five-year staffing plan, anchored in Miami's role as the national gateway for Latin American perishables, directly addresses U.S. workforce and food security priorities.

Direct Job Creation and Payroll Expansion

- Employment in transportation and warehousing is projected to grow faster than average through 2032, led by e-commerce and global food flows.[57]
- JMS aligns with this trend by **expanding its team from 5 to 18 employees in five years**, creating high-wage roles in:
    - Sales and account management.
    - Quality control and food safety.
    - Compliance and finance.
    - Logistics and supply chain analysis.
- By Year 5, these positions contribute over **$1.2 million annually in payroll**, adding both workforce skills and tax revenue.

[56] https://www.statista.com/statistics/1285630/market-share-of-fresh-foods-in-the-us-by-channel/
[57] https://www.bls.gov/ooh/transportation-and-material-moving/home.htm

- Job creation focuses on areas the USDA and FDA classify as **critical to national food system security**.[58]

Strengthening Food Security and Reducing Waste

- Over **50% of fruits** and **35% of vegetables** consumed in the U.S. are imported, with Latin America as the dominant source.
- Key roles such as **Quality Control Specialists** and **Finance & Compliance Officers** ensure continuous adherence to **FDA FSMA standards**, protecting consumers from unsafe imports.
- **Operations Supervisors and Supply Chain Analysts** mitigate inefficiencies across the cold chain.
- This directly supports USDA goals, addressing the **30–40% food waste** rate in the U.S.[59], and improving affordability through lower spoilage.

Geographic Expansion and Workforce Distribution

- JMS begins in Miami and strategically extends to **Texas, New Jersey, and Chicago** by Year 5.
- Each hub adds skilled positions in logistics, sales, and compliance, generating new opportunities beyond Florida.
- This model aligns with the Department of Commerce's emphasis on **redundancy and geographic diversification** as essential to U.S. supply chain resilience.
- Expansion also stimulates **secondary employment** in trucking, refrigerated warehouses, customs brokerage, packaging, and retail distribution.

Multiplier Effects Across the U.S. Economy

- According to BEA, every **$1 million in wholesale trade payroll supports 7–9 additional jobs** across the economy.
- By Year 5, JMS projects approximately **$2.1 million in direct and indirect economic activity**, combining payroll circulation with induced demand in housing, healthcare, and consumer services.

[58] https://www.fda.gov/food/food-safety-modernization-act-fsma
[59] https://www.ers.usda.gov/amber-waves/2021/march/us-imports-of-fresh-fruits-and-vegetables/

Summary of Impact

- Creation of **18 direct, high-wage jobs** in five years.
- Annual payroll contributions surpassing **$1.2 million by Year 5**.
- Reinforcement of **FDA and USDA food safety compliance**.
- Reduction of food waste and improved affordability for consumers.
- Employment and supply chain resilience extended across multiple U.S. regions.
- Over **$2.1 million in direct and indirect economic activity**.

Through this roadmap, JMS Fresh Produce positions itself as both a **local job generator in Miami** and a **national contributor** to food system resilience, economic growth, and workforce competitiveness.

3.2 Staff Turnover

The U.S. wholesale produce and logistics sector is defined by **structurally high turnover rates**, reflecting the demanding nature of perishable goods supply chains. Seasonal demand spikes, physically intensive roles, and complex regulatory requirements make employee retention a national challenge. For companies managing food imports, frequent staff replacement is not merely a financial burden, it creates disproportionate risks of non-compliance and product loss, both of which can directly affect public health and market stability.

Industry Context

- **Turnover Levels**
  - The **U.S. Bureau of Labor Statistics reports annual turnover in wholesale trade, transportation, and warehousing consistently above 30%**, significantly higher than the U.S. workforce average.[60]
  - Within food logistics, attrition is driven by competition for talent, warehouse labor intensity, and the high costs of training new hires to manage perishable products safely.
- **Replacement Costs**

[60] https://www.bls.gov/jolts/

- Industry research shows that replacing a skilled wholesale logistics employee costs approximately **20–30% of annual salary**, accounting for recruiting, onboarding, and productivity loss.[61]
- When turnover affects managerial, compliance, or finance roles, the costs can exceed **50% of annual compensation**, reflecting the specialized training curve required for FDA, USDA, and customs processes.[62]

JMS Fresh Produce's Mitigation Strategy

JMS Fresh Produce plans to **actively counter industry-standard attrition** through a retention-focused framework of competitive compensation, structured training, and career-path expansion.

- **Competitive Wages**
  - From Year 1, all positions, including sales, operations, food safety, finance, and grower relations, are benchmarked at BLS regional medians.
  - Core management roles (e.g., Sales and Operations Managers) fall within the **high-wage category.**

- **Training and Compliance Certifications**
  - JMS invests directly in workforce training aligned to **FDA's Food Safety Modernization Act (FSMA)** and **USDA phytosanitary protocols**.
  - Employees earn certifications in perishable handling and cross-border logistics, anchoring JMS as a compliance-driven employer while creating **career-advancing skills that incentivize retention**.

- **Stable Career Pathways Across Hubs**
  - With expansion planned into Miami, Texas, New Jersey, and Chicago, JMS provides structured internal mobility.
  - Staff can progress from local operations into supervisory, regional, or compliance roles transforming roles into **long-term career opportunities rather than transient jobs**.

[61] https://workinstitute.com/retention-report/
[62] https://www.shrm.org/resourcesandtools/hr-topics/talent-acquisition/pages/cost-of-employee-turnover.aspx

Strategic Outcome

By mitigating turnover through **pay equity, compliance-driven training, and mobility opportunities**, JMS achieves stronger operational stability relative to sector averages. Lower attrition translates into:

- Reduced costs of workforce replacement, freeing resources for expansion.
- Consistent adherence to food safety and trade compliance, minimizing regulatory risk.
- More durable employment opportunities within U.S. wholesale produce and logistics a sector historically vulnerable to high separation rates.

As a result, JMS not only **creates jobs** but also **stabilizes employment quality**, advancing national goals of skilled workforce retention, food safety, and supply chain reliability.

3.3 Projected Job Creation Year-by-Year

JMS Fresh Produce has structured a detailed five-year hiring roadmap, growing from a foundation team of 5 employees to **18 high-value U.S. positions** by Year 5. Each role is aligned with operations in food safety, logistics, finance, and sales expansion, directly supporting **national economic priorities in workforce development, supply chain resilience, and food security**.

Year 1 – Establishing Operational Foundation (5 employees)

- **Sales Manager / Founder** : Leads client acquisition and supplier partnerships.
- + **Sales Representative**: Opens first accounts with supermarkets and distributors.
- + **Operations & Logistics Coordinator**: Manages imports, cold chain, and warehousing.
- + **Administrative/Marketing Assistant**: Handles document control, back-office, and brand visibility.
- + **Quality Control & Food Safety Specialist**: Ensures FDA/FSMA compliance and prevents unsafe products from reaching consumers.

Objective: Establish core operations at the Miami hub, secure reliable supply sourcing, and integrate food safety oversight from inception. This foundation reinforces national consumer health protections.

Year 2 – Market Expansion (7 employees)

- **+ 2 Sales Representatives** (increasing to 4 total): Expand client coverage across Florida and Southeast U.S.
- **+ Client Success / Account Manager**: Strengthens supermarket and wholesale relationships.
- **+ Finance & Compliance Officer**: Ensures payroll accuracy, corporate tax compliance, customs filings, and FSMA documentation.

Objective: Broaden customer reach and build trust through structured financial and compliance operations. At this stage, JMS contributes directly to U.S. tax bases while increasing trade accountability.

Year 3 – Scaling (11 employees)

- **+ 3 Sales Representatives** (expanding to 7 total): Build national market access, targeting Texas and Midwestern distributors.
- **+ Operations Supervisor**: Establishes standardized processes for multi-hub logistics and supports the second hub launch in Texas.

Objective: Enable sales-driven growth while structuring logistics management. Scaling adds resilience to perishable imports across multiple U.S. regions and mitigates supply chain bottlenecks.

Year 4 – Structuring (15 employees)

- **+ HR & Training Manager**: Professionalizes recruitment, training, and retention.
- **+ Marketing & Digital Specialist**: Expands brand presence and digital sales channels.
- **+ 2 Senior Sales Executives**: Lead national account strategies and mentor junior representatives.

Objective: Add leadership layers that sustain organizational growth, strengthen workforce training, and modernize digital marketing, contributing to workforce development and national competitiveness.

Year 5 – Consolidation (18 employees)

- + **Supply Chain Analyst**: Oversees forecasting, risk management, and efficiency optimization.
- + **2 Sales Representatives** (growing to 9 total): Deepen penetration into supermarket chains and foodservice markets in Chicago and New Jersey.

Objective: Consolidate JMS's position as a national distributor. By integrating supply chain analytics and expanding the sales force, JMS secures long-term strategic accounts and ensures cost-effective, resilient produce distribution across the United States.

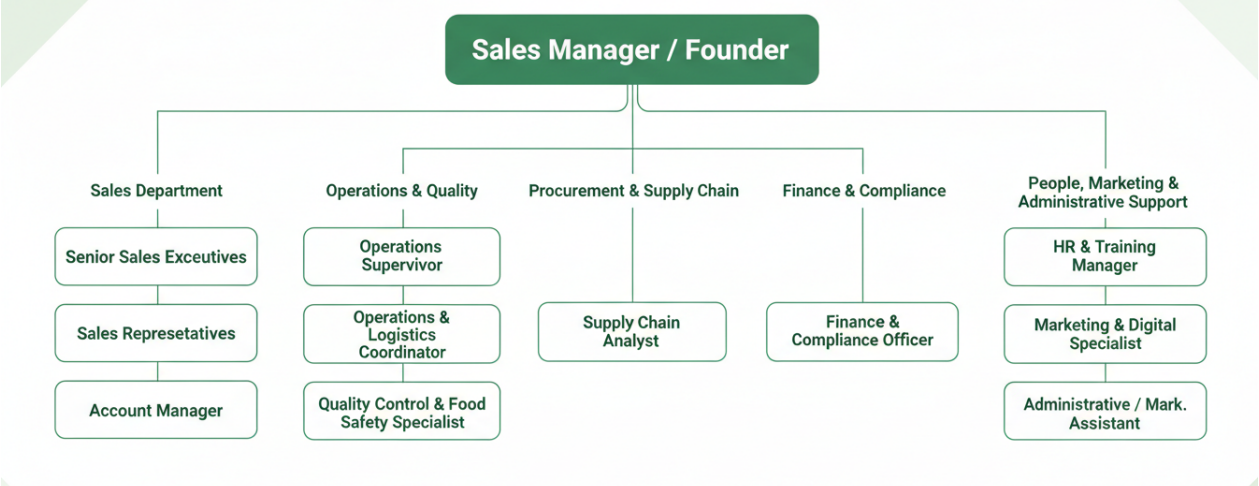
Strategic Alignment with National Priorities

- **Food Safety & Compliance**: Roles in quality control and finance ensure continuous alignment with FDA, USDA, and customs regulations[12].
- **Workforce Development**: Specialized positions in HR, operations, and analytics generate durable U.S. career pathways in logistics and compliance.
- **Economic Impact**: By Year 5, 18 direct jobs generate more than **$1.2 million in payroll annually** while stimulating secondary industries such as trucking, storage, and retail through BEA-verified multiplier effects

JMS Fresh Produce – Hiring Plan (Years 1–5)

JMS Fresh Produce - Personal Plan					
	Year 1	Year 2	Year 3	Year 4	Year 5
Sales Manager / Founder	1	1	1	1	1
Sales Representatives	1	3	6	6	9
Client Success / Account Manager	0	1	1	1	1
Senior Sales Executives	0	0	0	2	2
Operations & Logistics Coordinator	1	1	1	1	1
Operations Supervisor	0	0	1	1	1
Administrative / Marketing Assistant	1	1	1	1	1
Marketing & Digital Specialist	0	0	0	1	1
Quality Control & Food Safety Specialist	1	1	1	1	1
Finance & Compliance Officer	0	1	1	1	1
Supply Chain Analyst	0	0	0	0	1
HR & Training Manager	0	0	0	1	1
Total People	5	7	11	15	18

Organizational Chart – Year 5



3.4 Indirect Jobs

The operational scale of JMS Fresh Produce extends far beyond its direct payroll, acting as a catalyst for sustained economic activity within the U.S. food supply chain. To quantify this impact, a conservative employment multiplier of 2.0 has been applied to the company's hiring projections. While industry-specific data for the Wholesale Trade sector often suggests higher ripple effects JMS Fresh Produce LLC adopts a more restrained 1:1 ratio. Under this conservative framework, the 18 direct full-time positions created by the company within its first five years are projected to support an additional **18 indirect** and induced jobs across the United States, totaling **36 jobs supported** by the endeavor's fifth year of operation.

Economic Impact - Direct and Indirect Job Creation (5-Year Projection)

Employment Category	Year 1	Year 2	Year 3	Year 4	Year 5
Direct Jobs	5	7	11	15	18
Indirect & Induced Jobs (1.0x)	5	7	11	15	18
Total Economic Impact (2.0x)	**10**	**14**	**22**	**30**	**36**

3.5 Roles and responsibilities

Sales Manager / Founder (Mr. Santos)

- Leads client acquisition and supplier onboarding across Latin American and U.S. networks.
- Establishes company credibility with institutional buyers and regulators.
- Defines initial market entry strategy and long-term revenue streams.
- Negotiates high-value supply contracts with supermarkets and wholesalers.
- Anchors U.S. market entry, ensuring reliable pipelines for growth.

Sales Representative

- Secures early supermarket and wholesale contracts in Miami and the Southeast.
- Builds long-term client relationships that support recurring revenue.
- Provides market intelligence on buyer needs, purchasing cycles, and pricing.
- Educates procurement officers on sourcing, compliance, and seasonality.
- Expands JMS's regional footprint through consistent client outreach.

Operations & Logistics Coordinator

- Manages imports, warehousing, and cold-chain logistics.
- Ensures timely clearance at PortMiami and alignment with USDA inspections.
- Monitors warehouse capacity, trucking routes, and shipping timelines.
- Tracks phytosanitary compliance of shipments in real-time.
- Coordinates with customs brokers and freight forwarders to reduce delays.

Administrative / Marketing Assistant

- Maintains compliance recordkeeping and supports audit readiness.
- Handles internal and external communications with clients and suppliers.
- Assists in preparing marketing materials and digital brand content.
- Provides administrative support for payroll, scheduling, and reporting.
- Strengthens JMS's operational reliability and brand professionalism.

Quality Control & Food Safety Specialist

- Oversees FSMA compliance and USDA/FDA inspection protocols.

- Conducts batch-level quality checks upon arrival at U.S. ports.
- Implements hazard analysis and preventive controls for imported produce.
- Manages traceability systems to ensure end-to-end chain of custody.
- Prevents unsafe shipments from entering the U.S. food supply chain.

Client Success / Account Manager

- Maintains long-term supermarket and distributor contracts.
- Provides structured feedback loops to improve service delivery.
- Monitors client satisfaction and implements corrective actions.
- Designs retention strategies to secure multi-year client commitments.
- Acts as principal liaison between buyers, logistics, and compliance teams.

Finance & Compliance Officer

- Manages payroll, tax obligations, and financial reporting.
- Ensures corporate transparency in customs-linked transactions.
- Oversees alignment with U.S. tax and trade reporting requirements.
- Implements anti-fraud and compliance monitoring controls.
- Contributes consistently to U.S. federal, state, and local tax revenues.

Operations Supervisor

- Oversees logistics operations across multiple regional hubs.
- Standardizes cold-chain handling and quality controls nationally.
- Trains logistics staff in USDA and FDA compliance procedures.
- Develops KPIs to minimize food spoilage and delivery delays.
- Strengthens resilience in national cold-chain systems.

HR & Training Manager

- Leads U.S. recruitment, onboarding, and retention processes.
- Designs compliance and food safety training programs for employees.
- Develops talent pipelines in a sector with high turnover rates.
- Implements workplace policies aligned with U.S. labor law.
- Builds organizational culture supporting long-term employee engagement.

Marketing & Digital Specialist

- Expands brand presence through digital platforms (LinkedIn, Google, trade media).
- Develops campaigns highlighting JMS's compliance and logistics leadership.
- Monitors digital engagement with clients and industry stakeholders.
- Coordinates with trade associations to boost industry credibility.
- Strengthens demand generation and supplier awareness nationwide.

Senior Sales Executives

- Mentor and train junior sales representatives to improve performance.
- Lead acquisition of national supermarket and foodservice accounts.
- Manage high-value negotiations and long-term client agreements.
- Represent JMS at trade shows, USDA workshops, and industry events.
- Expand strategic partnerships across U.S. wholesale and retail hubs.

Supply Chain Analyst

- Optimizes sourcing strategies to minimize cost and risk.
- Develops forecasting models for demand, seasonality, and logistics flows.
- Reduces transportation costs through route analysis and consolidation.
- Monitors data on supplier performance, spoilage rates, and inventory.
- Ensures JMS scales profitably while strengthening national supply chain resilience.

3.6 Financial and Employment Benefits

JMS Fresh Produce's expansion into the U.S. market will deliver **substantial and measurable financial and employment benefits**. Its impact is twofold: (i) directly generating **18 high-value jobs in compliance, sales, logistics, finance, and supply chain oversight**; and (ii) indirectly stimulating broader economic activity across trucking, refrigerated warehousing, customs brokerage, and retail distribution.

Direct Payroll Contributions

Based on Bureau of Labor Statistics (BLS) benchmarks for wholesale trade and logistics roles in Miami and similar hubs, JMS compensation levels are above regional medians, situating the company firmly in the **high-wage employment category**:

JMS Fresh Produce - Payroll		
Position	Headcount	Annual Salary
Sales Manager / Founder	1	$85,000.00
Sales Representatives	9	$48,000.00
Operations & Logistics Coordinator	1	$52,000.00
Operations Supervisor	1	$72,000.00
Quality Control & Food Safety Specialist	1	$55,000.00
Finance & Compliance Officer	1	$68,000.00
Senior Sales Executives	2	$95,000.00
Account Manager	1	$62,000.00
Administrative / Marketing Assistant	1	$38,000.00
Marketing & Digital Specialist	1	$58,000.00
HR & Training Manager	1	$75,000.00
Supply Chain Analyst	1	$78,000.00

By Year 5, the **total headcount of 18 employees produces an annual payroll of approximately $1.17 million**. Over the first five years, cumulative payroll is projected at **$3.57 million**, directly elevating the tax base in every hub where JMS operates (Miami, Texas, New Jersey, Chicago).

Tax Contributions

- **Federal Payroll Taxes:** Employer contributions under FICA (7.65%) generate ≈**$273,100** in Social Security and Medicare receipts over five years.
- **Corporate Tax Base:** As revenues scale, corporate income taxes at both state and federal levels expand fiscal resources for infrastructure, ports, and regulatory systems.

Indirect and Multiplier Effects

- **Supply Chain Stimulation:** According to BEA RIMS II, each $1 million in wholesale trade payroll generates an additional **$1.50 in indirect and induced spending**[63]. JMS's five-year payroll supports nearly **$5.8 million in secondary economic activity**, benefiting logistics, warehousing, packaging, and local service industries.
- **Regional Competitive Advantage:** By anchoring in Miami, a trade corridor handling **70% of U.S. perishable air cargo**[64], and expanding to Texas, New Jersey, and Chicago, JMS distributes these benefits nationally, reinforcing resilience in critical food hubs.

[63] https://www.bea.gov/resources/methodologies/RIMSII
[64] https://www.miami-airport.com/cargo.asp

- **Retail and Consumer Impact:** Expanded contracts with supermarkets and foodservice distributors ensure consumers benefit through **greater product diversity, price competitiveness, and reliable access to fresh produce**.

Community Impact

Beyond payroll, JMS contributes durable benefits to local communities by:

- Establishing **18 skilled jobs by Year 5** across key compliance, management, and trade functions.
- Increasing the **regional tax base** via wages, FICA, and corporate taxation.
- Multiplying secondary spending on housing, healthcare, and local services through employee earnings.

Five-Year Aggregate Impact

- **Direct Payroll & FICA Contributions: ≈ $3.84 million**
- **Indirect & Induced Effects: ≈ $5.76 million**
- **Total Five-Year U.S. Economic Contribution: ≈ $9.6 million**

4.0 Strategy and Implementation

JMS Fresh Produce, headquartered in Miami, Florida, is strategically designed to meet the United States' growing demand for fresh, reliable, and traceable food imports. The company specializes in importing fresh fruits and roots from Latin America and distributing them to U.S. wholesalers and supermarkets. This model directly addresses federal priorities in food security, compliance integrity, and minimization of food waste. Current USDA data reveals that nearly half of U.S. fruit and one-third of vegetables are imported, underscoring reliance on global sourcing to meet domestic demand. [6566]As supply chain disruptions and climate variability affect availability, the ability to secure diversified sources of fresh produce is a matter of national resilience.

JMS Fresh Produce is distinguished by its founder, Mr. Santos, who brings over a decade of agribusiness expertise from Brazil, a country recognized as one of the world's largest

[65] https://www.ers.usda.gov/topics/crops/fruit-tree-nuts/fruit-and-tree-nuts-data/
[66] https://www.ers.usda.gov/topics/crops/vegetables-pulses/market-outlook/#trade.

agricultural exporters. His ability to adapt farm-to-market logistics and apply advanced distribution practices enables the company to deliver consistent, high-quality produce that complies with all U.S. standards. By embedding compliance transparency and digital traceability at the core of its operations, JMS will enter the market not as a price competitor but as a quality-driven, trust-guaranteeing partner for retailers navigating strict regulatory oversight.

4.1 SWOT Analysis

Below is a structured SWOT framework for **JMS Fresh Produce**, highlighting weaknesses, addresses threats, and amplifies opportunities.

Strengths

- **Strategic location in Miami**: Direct access to Port Miami, recognized as the "Cargo Gateway of the Americas," and to Miami International Airport.
- **Competitive logistics advantage**: Geographic proximity to Latin America results in transit times 1-3 days faster compared to other American ports.
- **Specialization in Latin American products**: Enables development of deep expertise in specific categories, differentiating from generalist distributors that compete primarily on volume.
- **Direct producer relationship strategy**: Elimination of unnecessary intermediaries in Latin America, ensuring better quality control, more competitive prices, and greater supply reliability[4].
- **Positioning for growing ethnic market**: Capability to serve the Hispanic population in South Florida, which represents a natural customer base with established demand for authentic Latin American products.

Weaknesses

- **Startup capital constraint:** Limited to an initial **$100,000 personal investment**, requiring disciplined allocation of resources.
- **Need for phased growth:** Early operations will start lean, with gradual scaling in staff and logistics capacity.
- **New market entry:** Lack of immediate brand recognition in the U.S. market compared to long-established competitors.

- **Relationship-dependence:** Initial focus on trusted networks may limit diversification until scale is achieved.

Opportunities

- **Rising U.S. demand for tropical produce:** Driven by dietary diversity and population growth; imports already represent nearly half of fruit consumption.
- **FSMA-driven compliance emphasis:** Buyers now prioritize suppliers with preventive controls, documentation, and traceability.
- **Consumer expectations:** Rising demand for sustainable, transparent, and verified supply chains.
- **Miami hub advantage:** Miami is the **top U.S. logistics gateway** for Latin American perishables, offering reduced lead times and lower spoilage risks.
- **Institutional market growth:** School systems, hospitals, and foodservice networks increasingly seek suppliers with traceable and reliable imports.

Threats

- **Competitive landscape:** Large distributors with entrenched supermarket contracts dominate the market.
- **Trade route volatility:** Shipping bottlenecks, customs delays, and global freight fluctuations can disrupt supply chains.
- **Cold chain costs:** Refrigerated transport and storage exert sustained financial pressure for perishable goods.
- **Commodity price swings:** Climate variability and global market volatility create pricing instability.
- **Buyer price sensitivity:** Supermarkets may switch suppliers for cost savings, putting pressure on margins.

4.2 Sales Strategy

Target Market & Clients

JMS Fresh Produce will focus on **business-to-business (B2B) partnerships** with leading supermarket chains, national distributors, and foodservice wholesalers. The target customer base includes high-volume buyers such as **Walmart, Costco, Publix, and Aldi**, alongside

regional supermarket groups with strong demand for Latin American fruits and root crops. Foodservice wholesalers and institutional buyers (e.g., school systems, hospitals, and hospitality groups) are also priority partners, given their increasing reliance on suppliers that guarantee food safety and traceability.

The choice of Miami as headquarters maximizes proximity to Latin American supplier networks while positioning JMS at the heart of the U.S. perishable imports trade. Miami is the country's largest entry hub for Latin fresh produce, responsible for billions in imports annually. This gateway gives JMS a competitive edge in servicing Florida and building a launchpad for phased market expansion to Texas, New Jersey, and Chicago, where demographic demand for tropical imports is substantial.

Value Proposition: Compliance & Traceability

JMS Fresh Produce's differentiation centers on **compliance as a selling point, a feature** increasingly valued by supermarkets under stricter federal oversight. Every shipment will be:

- Fully aligned with **FSMA** and subject to **FDA inspection**.
- Sourced directly from **GlobalGAP-certified growers**, ensuring sustainability, phytosanitary compliance, and export readiness.
- Delivered with **full batch traceability**, providing customers with detailed supply-chain transparency.

This compliance-driven approach mitigates regulatory risks for buyers, positioning JMS not as a commodity trader, but as a trusted distribution partner whose operations reduce reputational and financial risk for retail clients.

Differentiation: Cold Chain & Waste Reduction

Beyond compliance, JMS Fresh Produce will compete on **logistics integrity and data application**. Differentiation pillars include:

- **Cold chain excellence:** Preservation of freshness from farm to shelf, ensuring minimized spoilage and consistent quality. As U.S. food waste from perishables

contributes to nearly 30% of annual losses[67], this operational discipline is a direct value driver.

- **Predictive analytics:** Incorporating demand forecasting into inventory and ordering systems to reduce waste, optimize delivery schedules, and match supply to real-time retail needs.
- **Direct grower relationships:** Eliminating intermediary markups and ensuring reliability in both quality and volumes sourced, while offering buyers price stability in volatile markets.

4.3 Sales Forecast

The sales forecast for JMS Fresh Produce reflects a disciplined entry strategy into the U.S. market, followed by progressive geographic expansion and diversification. Each year of the forecast is tied directly to regional hubs, and the contribution of Miami, Texas, Chicago, and New Jersey can be measured quantitatively in the forecast table.

Year 1 – Miami Hub (Proof of Concept):
Operations begin in Miami, the closest and most strategic gateway for Latin American imports. Projected revenues of **$1.2 million** are sufficient to cover payroll and initial overhead while yielding immediate net profit. This first year validates market demand and confirms operational viability.

Year 2 – Expansion to Texas (Southern Corridor):
By adding a hub in Texas, JMS extends its reach into the central and southern markets and integrates more efficiently with Mexican supply chains. Revenues climb to **$2.8 million**, with contributions of $1.6M from Miami and $1.2M from Texas. Net profit expands proportionally faster than payroll growth, demonstrating strong leverage of fixed costs.

Year 3 – Entry into Chicago (Midwest Hub):
Access to the Midwest through Chicago brings JMS into direct contact with national distributors and large retail chains. By this stage, revenue almost doubles from the prior year, reaching **$5.5 million**, with contributions of $1.9M from Miami, $1.6M from Texas, and $2.0M from Chicago. This marks the company's transition from regional to national supplier.

[67] https://www.usda.gov/foodlossandwaste/faqs

Year 4 – Scaling and Product Diversification:

With Miami, Texas, and Chicago fully operational, focus shifts toward strengthening margins through premium products such as organic and exotic roots. Revenues grow to **$9.0 million**, with Chicago surpassing other hubs thanks to higher volume contracts. Economies of scale and improved product mix ensure net income rises exponentially compared to previous years.

Year 5 – Strategic Entry into New Jersey (East Coast Hub):

The final step in establishing JMS as a nationwide enterprise is the launch of the New Jersey hub. This expansion provides direct access to the highly concentrated East Coast market. Revenues reach **$15.0 million**, with contributions of $2.5M from Miami, $3.5M from Texas, $5.0M from Chicago, and $4.5M from New Jersey. The addition of New Jersey solidifies JMS's national presence, and exponential net profit growth is achieved as fixed cost leverage combines with premium product lines and scaled distribution.

This forecast demonstrates deliberate financial discipline:

- **Immediate profitability in Year 1** as operations are lean and revenue exceeds payroll and fixed overhead.
- **Exponential revenue growth** from $1.2M in Year 1 to $15M in Year 5, driven by new hubs and product diversification.
- **National integration** that reduces supply chain risk, creates 18 direct high-wage jobs, and compounds profitability as efficiency gains multiply.

By Year 5, JMS Fresh Produce is not just profitable, but strategically positioned as a leading nationwide distributor of fresh produce, strengthening U.S. food security and economic resilience.

4.4 Annual Sales Forecast Table

JMS Fresh Produce – Sales Forecast					
Year	**Miami Revenue**	**Texas Revenue**	**Chicago Revenue**	**New Jersey Revenue**	**Gross Revenue**
1	$1,200,000.00	$0.00	$0.00	$0.00	$1,200,000.00
2	$1,600,000.00	$1,200,000.00	$0.00	$0.00	$2,800,000.00
3	$1,900,000.00	$1,600,000.00	$2,000,000.00	$0.00	$5,500,000.00
4	$2,200,000.00	$2,800,000.00	$4,000,000.00	$0.00	$9,000,000.00
5	$2,500,000.00	$3,500,000.00	$5,000,000.00	$4,500,000.00	$15,500,000.00

5.0 Marketing Plan

The marketing strategy of **JMS Fresh Produce** is designed as a **credibility-building framework**. Rather than relying solely on product promotion, it positions the company, and its founder, **Mr Santos**, as a **trusted authority** in the U.S. fresh produce import and distribution sector.

Client Segmentation and Trust Channels

The company's marketing plan prioritizes three interconnected client groups:

- **Regional distributors and wholesalers** requiring reliable volume and strict compliance.
- **Foodservice chains and retailers** particularly in multicultural hubs such as Miami, Houston, New York, and Los Angeles.
- **Niche premium channels** including health-oriented grocers, ethnic retailers, and *meal-kit* providers demanding tropical or organic produce.

Strategic Marketing Tactics

JMS employs a multi-pronged approach to solidify its market authority:

- **Institutional Presence:**
    - Active membership in leading trade associations (Produce Marketing Association, United Fresh Produce Association).

- Regular participation in USDA workshops, signaling leadership in regulatory compliance.

- **Knowledge-Based Outreach:**
  - Publication of data-driven whitepapers and market briefs, integrating JMS's logistics intelligence with public sources (USDA, IBISWorld, Statista).
  - Distribution via LinkedIn, trade journals, and industry forums, positioning Jackson Marques dos Santos as a thought leader in Latin American produce trade.

- **Relationship Marketing:**
  - A consultative sales process that educates buyers on crop seasonality, freight optimization, and import risk reduction.
  - Positions JMS as a **supply-chain problem-solving partner**, not just a commodity vendor.

- **Digital and Brand Visibility**
  - **Corporate Website:** Functions as a transactional hub and compliance validation platform, showcasing certifications, shipping improvements, and sustainability updates.
  - **Social & Trade Media:** LinkedIn, YouTube, and specialized trade channels highlight participation in FDA-aligned safety programs and JMS's contribution to import resilience.
  - Messaging is tailored for B2B decision-makers, emphasizing documentation reliability, risk reduction, and reputational protection.

5.1.Website

The **JMS Fresh Produce corporate website** is designed not as a promotional surface, but as a **digital authority hub** that reinforces credibility in the U.S. fresh produce supply chain. Since nearly all U.S. buyers perform online due diligence before onboarding suppliers, the site provides **institutional reassurance** by showcasing verifiable compliance, operational reliability, and logistics expertise.

Pillar 1 – Transparency

- Prominent display of certifications (GlobalG.A.P., HACCP, phytosanitary attestations).
- Explicit alignment with FDA's FSMA protocols and USDA phytosanitary requirements.
- A "Compliance Library" offering immediate downloads of FDA/USDA certificates,

Pillar 2 – Knowledge Leadership

- Whitepapers, briefs, and case studies authored by Jackson Marques dos Santos.
- Insights anchored in USDA, Department of Commerce, and IBISWorld data.
- Focus topics: cold-chain risk mitigation, freight consolidation, and seasonality forecasting.

Pillar 3 – Client Enablement

- Dedicated buyer sections with compliance documents and product catalogs.
- Nutritional and phytosanitary specifications.
- Interactive traceability features visualizing country of origin, logistics routes, and cold-chain handling.

Strategic Positioning

By uniting transparency, knowledge leadership, and buyer enablement, the JMS website functions as an authority interface for large-scale buyers, regulators, and trade associations. It embodies the JMS brand promise: compliance, transparency, and reliability as the foundation of market leadership in U.S. produce imports.

5.2 Google Maps

JMS Fresh Produce will strategically deploy **Google Maps as an infrastructure tool to reinforce operational legitimacy** within the U.S. fresh produce supply chain, not merely a promotional asset. Miami, FL, is the nation's primary gateway for perishable imports, making a verified presence here critical for B2B trust.

Key Strategic Elements:

- **Verified Physical Presence:**

- The Google Maps profile will feature a **verified headquarters location in Miami, Florida**, situating JMS within one of North America's largest perishables logistics corridors.
- Displaying an **authenticated corporate address, operational hours, and direct B2B inquiry links** allows prospective clients (foreign exporters, regional wholesalers, supermarket buyers) to confirm JMS's physical footprint in real time.
- This geospatial verification acts as an **institutional trust anchor**, differentiating JMS from informal brokers lacking proven infrastructure or regulatory alignment.

- **Compliance Signal & Accessibility:**
  - Google Maps transforms into a **compliance signal**. Buyers searching for FDA/FSMA-aligned produce importers in Miami will find JMS distinguished by:
    - Verified geolocation within this critical perishable gateway hub.
    - Direct integration of certifications and compliance resources via linked website content.

This establishes JMS as a **visible, embedded actor** within the U.S. food supply system, not just a directory listing.

- **Reinforcing Ecosystem Legitimacy:**
  - Visibility on Google Maps provides **practical proof of accessibility**, facilitating visits by buyers, trade partners, and regulatory stakeholders.
  - This visible presence substantiates JMS's commitment to transparency and anchors its role as a **tangible logistics partner** within America's most critical port of entry for perishable goods.

5.3 LinkedIn

For **JMS Fresh Produce**, LinkedIn is an **executive thought-leadership platform**, not a promotional channel, crucial for establishing institutional credibility within the U.S. fresh produce industry. With over 65 million global business decision-makers, it's the key B2B environment for validating expertise and selecting partners.

Knowledge-Based Authority:
Jackson Marques dos Santos's LinkedIn presence will focus on **regulatory knowledge and compliance thought leadership**, systematically linked to U.S. frameworks:

- Insights on FSMA compliance and its impact on importers.
- Analysis of GlobalG.A.P. supplier standards and U.S. buyer priorities.
- Commentary on cold-chain optimization and perishability risk reduction.
- Updates on USDA and FDA food safety modernization practices.

Each post will be grounded in USDA, FDA, and IBISWorld reports, positioning JMS as a **trusted authority in secure and efficient supply-chain operations**, not just a transactional importer.

Strategic Engagement & Content:

To maximize impact, content will be disseminated in digestible formats for procurement and logistics executives:

- Infographics simplifying complex compliance requirements.
- Briefs translating regulatory updates into operational guidance.
- Efficiency models illustrating freight and cold-chain savings.
- Case updates featuring grower partnerships and distributor success stories.

Direct Buyer Engagement:

LinkedIn also serves as a direct engagement tool:

- Connecting with retail buyers, logistics executives, and compliance officers in key U.S. regions.
- Providing real-time commentary on seasonal trade flows, freight bottlenecks, and import risk mitigation.
- Engaging in professional dialogues that visibly demonstrate expertise and reliability.

6.0 Financial Summary

6.1 Initial Operating Expenses

The petitioner has secured and fully allocated US $100,000 to establish JMS Fresh Produce's U.S. operations. Funds are deployed in a disciplined, capital-light model that leverages third-party logistics and pay-per-use cold storage to minimize fixed commitments while enabling immediate commercial activity consistent with the financial projections.

- US $12,000 for legal and compliance, including incorporation, licensing, and FDA/USDA setup.

- US $23,000 for facility and logistics setup, including warehouse lease deposits and initial 3PL cold-storage commitments.
- US $12,000 for technology and systems, including ERP SaaS, compliance tracking, and essential hardware.
- US $12,000 for professional services, including accounting, compliance, and advisory support through Year 1.
- US $16,000 for marketing and business development, including website, branding, sales collateral, and participation in targeted trade events.
- US $25,000 for working capital reserve to support initial inventory purchases, freight advances, and payroll during revenue ramp-up.

This allocation integrates transparently with the financial statements. Legal, regulatory, technology, professional, and marketing outlays appear as Year 1 operating expenses. Facility deposits and initial logistics commitments are recognized as prepaid or other current assets and amortized to expense as services are consumed. The US $25,000 working capital reserve strengthens liquidity to bridge receivables and vendor terms, supporting the break-even profile evidenced in the Year 1 and Year 2 analyses. Together, these Initial Operating Expenses create a compliant, scalable base that aligns with the Sales Forecast, preserves flexibility under a 3PL-first model, and supports positive net profit from Year 1 with increasing profitability through Year 5.

6.1.1. Initial Operating Expenses Table

JMS Fresh Produce - Initial Operating Expenses

Category	Description	Estimated Cost
Legal & Compliance	Incorporation, licensing, FDA/USDA setup	$12,000.00
Facility & Logistics Setup	Deposits on warehouse contract, 3PL cold storage	$23,000.00
Technology & Systems	ERP SaaS systems, compliance tracking, hardware	$12,000.00
Professional Services	Legal, accounting, advisory for first year	$12,000.00
Marketing & Business Development	Website, branding, trade shows, commercial push	$16,000.00
Working Capital Reserve	Initial inventory, freight advances, payroll	$25,000.00
Total Initial Operating Expenses	-	$100,000.00

6.2 Break-even Analysis

The break-even analysis provides an objective threshold for JMS Fresh Produce's financial sustainability, defining with precision the monthly sales volume that covers all fixed and variable costs. By quantifying the exact number of units (boxes of produce) and revenue levels

required, this exercise demonstrates that JMS is designed not only to survive its early years of operation but to generate positive net profitability from the very first year. The analysis is a critical validation point for regulators, stakeholders, and prospective partners as it proves the model is resilient and financially disciplined.

Methodology

• **Fixed Costs:** These consist primarily of payroll, administrative overhead, and recurring logistics support. They are estimated at $30,000/month in Year 1, reflecting a lean workforce of five employees in Miami, and rise to $55,000/month in Year 2 as JMS expands to Texas, adding headcount and additional freight/warehouse capacity. This progression demonstrates scalability without excess, as cost increases are tied directly to geographic expansion.
• **Variable Costs:** These represent the direct costs of acquiring, transporting, and handling each box of produce. Estimated at $30.00 per unit, they include purchase from certified growers, freight forwarding, storage, and cold-chain management ensuring FDA/USDA compliance.
• **Price per Unit:** The average expected selling price is $45.00 per box of produce, based on U.S. wholesale benchmarks for Latin American imports.

• **Contribution per Unit:** Subtracting variable costs from sales price yields $15.00 per box, equivalent to a contribution margin of 33.33%, which is consistent with industry standards. This margin reflects JMS's asset-light approach, reliance on 3PLs, and efficiency gains from minimizing spoilage relative to traditional operators.

Calculations & Outcomes

• **Year 1:** Monthly Break-even Units are 2,000, derived by dividing fixed costs of $30,000 by the $15.00 per-unit contribution. This translates into a revenue threshold of $90,000 per month. Projected monthly revenues of approximately $100,000 (annualized at $1.2M) comfortably exceed this requirement. Consequently, JMS operates profitably from inception, validating the startup allocation of $100,000 and eliminating early-stage financial vulnerability.
• **Year 2:** Expansion to Texas increases fixed costs to $55,000, raising the monthly break-even requirement to 3,666.67 boxes. Monthly revenue required rises correspondingly to $165,000. However, the sales forecast projects over $233,000 per month (annualized at $2.8M), resulting in an operating surplus above break-even every month.

Strategic Interpretation

This analysis demonstrates three key strengths:

1. **Early Profitability:** JMS breaks even in its very first year, a rare achievement for new entrants in the U.S. food distribution sector.
2. **Scalability:** The increase in fixed costs between Year 1 and 2 is offset by proportionally greater revenue growth, illustrating that expansion is demand-driven rather than speculative.
3. **Risk Mitigation:** The margin structure ensures that JMS requires fewer than 4,000 boxes per month to cover expanded Year 2 operations, a volume significantly below projected demand. This creates a wide safety margin against market volatility.

Implications for U.S. Operations

The break-even analysis validates JMS Fresh Produce's **capital allocation strategy** and **financial resilience**. It shows that the company has the financial discipline to absorb early expansion costs while scaling responsibly. The results send a strong signal to regulators and stakeholders: JMS neither requires excessive capital reserves to survive, nor does it take on outsized operational risks. Rather, it matches its cost structure to real sales potential, ensuring that growth is sustainable and that profitability compounds year over year.

Such financial discipline is particularly critical in the U.S. fresh produce market, where volatility in prices, perishability, and regulatory compliance costs frequently erode margins. JMS's model, combining lean fixed costs, reliable contribution margins, and phased hub expansion, ensures that it is well positioned to withstand these challenges, while still producing consistent profits and national impact.

6.2.1 Break-even Analysis Table

JMS Fresh Produce - Break-even Analysis

	Year 1	Year 2
Price per Unit (P)	$45.00	$45.00
Variable Cost per Unit (CVu)	$30.00	$30.00
Monthly Fixed Costs (CF)	$30,000.00	$55,000.00
Monthly Units Break-even (boxes)	2,000.00	3,666.67
Monthly Revenue Break-even	$90,000.00	$165,000.00
Contribution per Unit	$15.00	$15.00
Contribution Margin (%)	33.33%	33.33%
Estimated Monthly Fixed Costs	$30,000.00	$55,000.00

6.3 Profit and Loss Assumptions

JMS Fresh Produce projects a measured but scalable revenue trajectory in the United States, growing from 1,200,000 dollars in Year One to 2,800,000 dollars in Year Two, 5,500,000 dollars in Year Three, 9,000,000 dollars in Year Four, and 15,000,000 dollars in Year Five. This path reflects the staged activation of Miami in Year One, expansion to Texas in Year Two, Chicago in Year Three, and New Jersey in Year Five. In Year One, monthly revenues follow mild seasonality between 7.5% and 9.2% of the annual total, beginning at 90,000 dollars in January, rising steadily through the summer to 104,400 dollars in July and August, and peaking at 110,400 dollars in December, which brings the full-year revenue precisely to 1,200,000 dollars.

Gross margin is held constant at 43.0% of net sales across all five years, a policy that yields gross profit of 517,500 dollars in Year One, 1,208,500 dollars in Year Two, 2,372,000 dollars in Year Three, 3,882,000 dollars in Year Four, and 6,468,000 dollars in Year Five.

Cost of Sales is therefore modeled at 57.0% of sales, totaling 682,500 dollars in Year One, 1,591,500 dollars in Year Two, 3,128,000 dollars in Year Three, 5,118,000 dollars in Year Four, and 8,532,000 dollars in Year Five. For transparency, Cost of Sales is split into direct product and inbound costs at 85% of the total and other direct costs at 15%. That split produces direct cost of sales of 580,200 dollars and other costs of 102,300 dollars in Year One; 1,353,400 dollars and 238,100 dollars in Year Two; 2,660,750 dollars and 467,250 dollars in Year Three; 4,353,750 dollars and 764,250 dollars in Year Four; and 7,257,750 dollars and 1,274,250 dollars in Year Five.

Operating expenses scale in a disciplined manner from 481,800 dollars in Year One to and 1,499,636 dollars in Year Five. Year One operating expenses consist of payroll of 278,000 dollars, payroll taxes of 27,800 dollars, depreciation of 6,000 dollars, rent of 60,000 dollars, insurance of 18,000 dollars, marketing of 30,000 dollars, utilities of 12,000 dollars, employee education of 5,000 dollars, professional fees of 20,000 dollars, office and administrative expenses of 15,000 dollars, and remodeling of 10,000 dollars.

From Year Two forward, rent through remodeling apply a five% annual inflation factor, while payroll expands from 278,000 dollars in Year One to 462,000 dollars in Year Two, 684,000

dollars in Year Three, 965,000 dollars in Year Four, and 1,170,000 dollars in Year Five, following the staffing plan tied to hub activations.

This structure reduces operating expenses as a%age of sales from 40.2% in Year One to 24.7% in Year Two, 17.1% in Year Three, 14.0% in Year Four, and 10.0% in Year Five.

Earnings reflect the combined effect of stable gross margin and dilution of fixed overhead. Earnings before interest and taxes rise from 35,700 dollars in Year One to 515,800 dollars in Year Two, 1,431,175 dollars in Year Three, 2,622,000 dollars in Year Four, and 4,968,363.93 dollars in Year Five. With annual depreciation of 6,000 dollars, EBITDA progresses from 41,700 dollars in Year One to 521,800 dollars in Year Two, 1,437,175 dollars in Year Three, 2,628,000 dollars in Year Four, and 4,974,363.93 dollars in Year Five.

A flat planning tax rate of 25% is applied only when the EBIT base is positive, resulting in taxes of 8,925 dollars in Year One, 128,950 dollars in Year Two, 357,793.75 dollars in Year Three, 655,500 dollars in Year Four, and 1,242,090.98 dollars in Year Five.

Net profit follows a healthy and credible progression from 26,775 dollars in Year One, to 386,850 dollars in Year Two, 1,073,381.25 dollars in Year Three, 1,966,500 dollars in Year Four, and 3,726,272.95 dollars in Year Five. Net margin expands from 2.2% in Year One to 13.8% in Year Two, 19.5% in Year Three, 21.9% in Year Four, and 24.8% in Year Five.

Across the five-year period, cumulative net profit equals 7,179,779.20 dollars. The relationship between gross profit and operating expenses illustrates operating leverage: gross profit increases by 5,950,500 dollars from Year One to Year Five, while operating expenses increase by 1,017,836 dollars over the same period, pushing EBITDA margin from 3.5% in Year One to 33.2% in Year Five.

The monthly view of Year One is consistent with the annual model and further demonstrates operational realism. Gross profit per month ranges from 38,812.50 dollars in January to 47,610.00 dollars in December, while monthly operating expenses remain stable at approximately 40,150 dollars, leading to EBIT ranging from negative 1,337.51 dollars in January to positive 7,460.11 dollars in December and annual EBIT of 35,700 dollars.

Taxes are allocated only to months with positive EBIT and sum to 8,925 dollars for the year. Net profit by month ranges from negative 1,337.51 dollars in January to 5,662.43 dollars in December, summing exactly to 26,775 dollars for Year One, which matches the annual result and confirms reconciliation between the monthly and annual statements.

Overall, the Profit and Loss profile demonstrates immediate viability with 1,200,000 dollars of revenue and 26,775 dollars of net income in Year One, rapid strengthening to 2,800,000 dollars

of revenue and 386,850 dollars of net income in Year Two, and sustained scalability to 15,000,000 dollars of revenue and 3,726,272.95 dollars of net income by Year Five.

The model remains audit-ready through constant gross margin at 43.0%, explicit Cost of Sales at 57.0% with a documented 85 and 15% split, transparent inflation on overhead at five% per year, and a uniform 25% tax assumption.

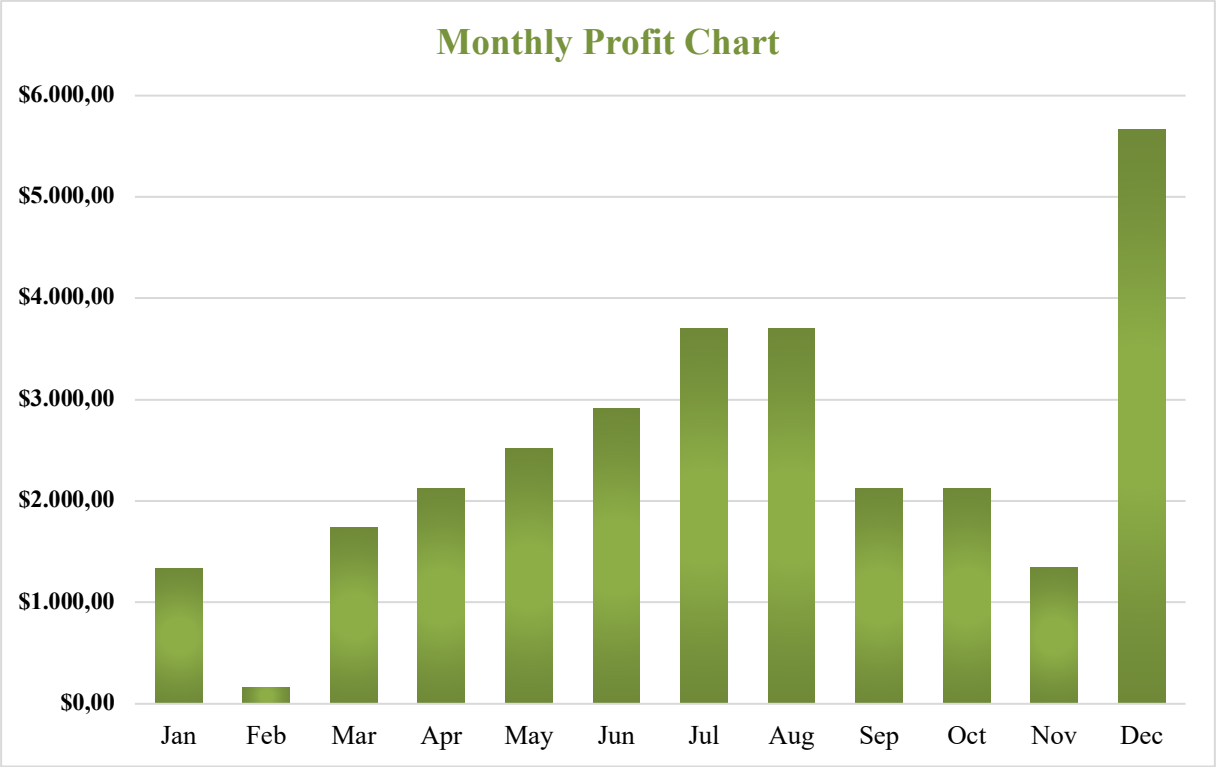
This level of numeric specificity, together with the monthly reconciliation, supports a clear, defensible, and credible financial narrative for U.S. operations.

6.3.1 Annual Profit and Loss Table

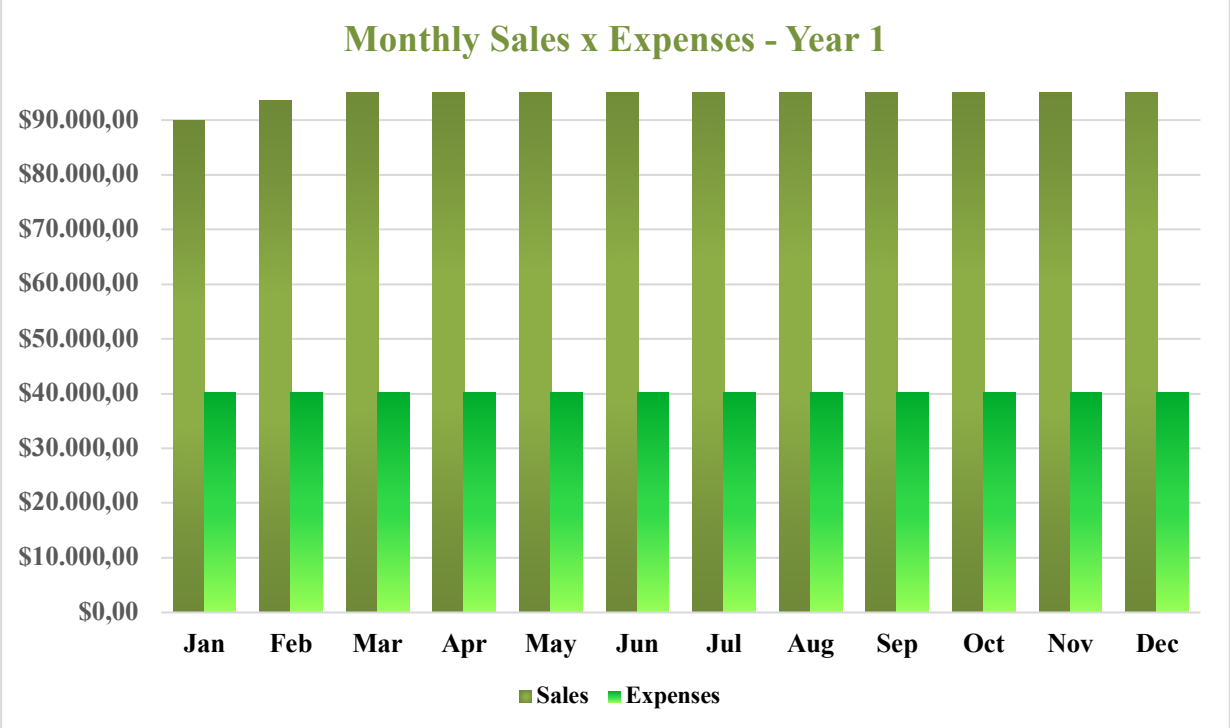
JMS Fresh Produce - Profit & Loss

	Year 1	Year 2	Year 3	Year 4	Year 5
Sales	$1,200,000.00	$2,800,000.00	$5,500,000.00	$9,000,000.00	$15,000,000.00
Direct Cost of Sales	$581,400.00	$1,356,600.00	$2,664,750.00	$4,360,500.00	$7,267,500.00
Other Costs of Sales	$102,600.00	$239,400.00	$470,250.00	$769,500.00	$1,282,500.00
Total Cost of Sales	$684,000.00	$1,596,000.00	$3,135,000.00	$5,130,000.00	$8,550,000.00
Gross Margin	$516,000.00	$1,204,000.00	$2,365,000.00	$3,870,000.00	$6,450,000.00
Gross Margin	43.00%	43.00%	43.00%	43.00%	43.00%
Payroll	$278,000.00	$462,000.00	$684,000.00	$965,000.00	$1,170,000.00
Payroll Taxes	$27,800.00	$46,200.00	$68,400.00	$96,500.00	$117,000.00
Depreciation	$6,000.00	$6,000.00	$6,000.00	$6,000.00	$6,000.00
Rent	$60,000.00	$63,000.00	$66,150.00	$69,457.50	$72,930.38
Insurance	$18,000.00	$18,900.00	$19,845.00	$20,837.25	$21,879.11
Marketing	$30,000.00	$31,500.00	$33,075.00	$34,728.75	$36,465.19
Utilities/Internet/Phone	$12,000.00	$12,600.00	$13,230.00	$13,891.50	$14,586.08
Employees Education	$5,000.00	$5,250.00	$5,512.50	$5,788.12	$6,077.53
Professional Fees	$20,000.00	$21,000.00	$22,050.00	$23,152.50	$24,310.12
Office & Admin	$15,000.00	$15,750.00	$16,537.50	$17,364.38	$18,232.59
Remodeling	$10,000.00	$10,500.00	$11,025.00	$11,576.25	$12,155.06
Total Operating Expenses	$481,800.00	$692,700.00	$945,825.00	$1,264,296.25	$1,499,636.06
Profit Before Interest and Taxes (EBIT)	$34,200.00	$511,300.00	$1,419,175.00	$2,605,703.75	$4,950,363.94
EBITDA	$40,200.00	$517,300.00	$1,425,175.00	$2,611,703.75	$4,956,363.94
Interest Expense	$0.00	$0.00	$0.00	$0.00	$0.00
Taxes Incurred	$8,550.00	$127,825.00	$354,793.75	$651,425.94	$1,237,590.99
Net Other Income	$0.00	$0.00	$0.00	$0.00	$0.00
Net Profit	$25,650.00	$383,475.00	$1,064,381.25	$1,954,277.81	$3,712,772.95
Net Profit/Sales	**2.10%**	**13.70%**	**19.40%**	**21.70%**	**24.80%**

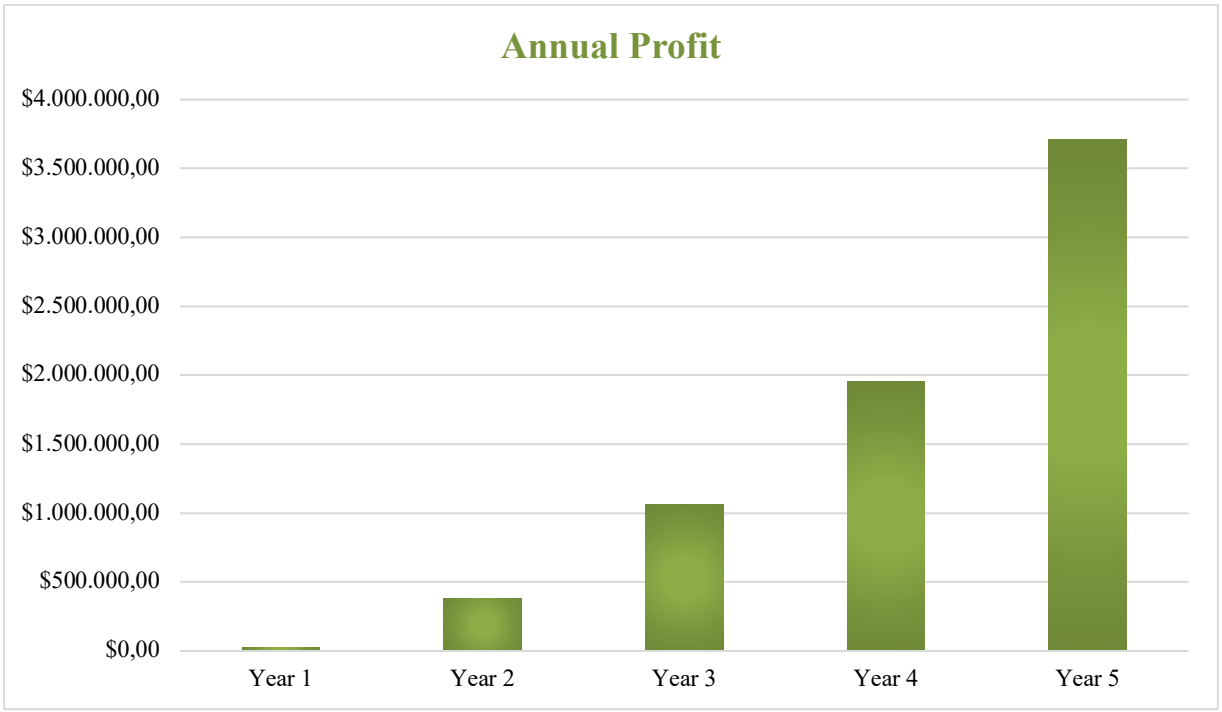
6.3.2 Monthly Profit Chart



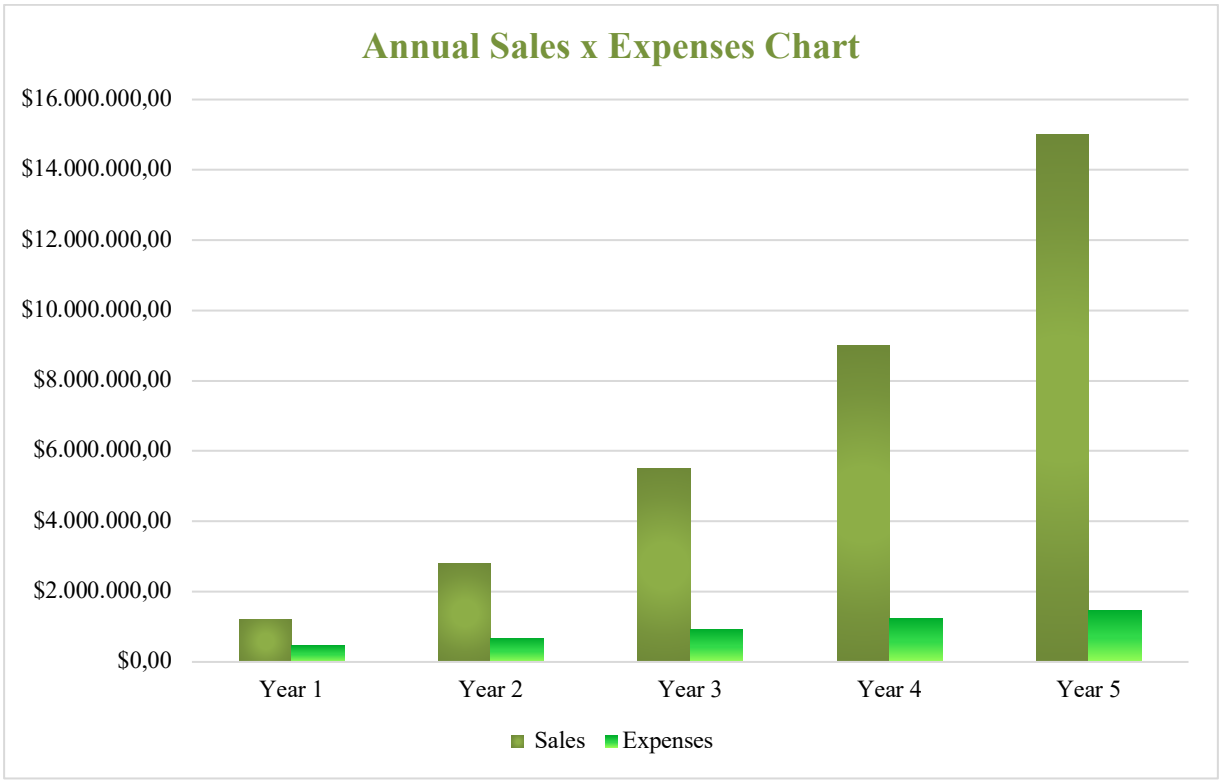
6.3.3 Monthly Sales x Expenses Chart



6.3.4 Annual Profit Chart



6.3.5 Annual Sales x Expenses Chart



6.4 Cash Flow Assumptions

JMS Fresh Produce adopts a conservative, self-sustaining cash flow policy with no reliance on debt, non-operating income, or tax grants. Operating cash is generated from core distribution activities, with collections driven by a 90/10 working capital rule: 90% of each year's sales are received as cash within the same year, and 10% are collected in the following year as receivables. The model excludes non-cash charges (such as depreciation) from cash spending and applies a flat 25% tax on positive annual EBIT. There are no dividends during the projection horizon.

Cash Inflows

All inflows originate from operating revenues in the U.S. fresh produce distribution business. The collection policy is applied consistently year over year.

- Cash Sales (90% of Sales):
  Year 1: 1,080,000.00
  Year 5: 13,500,000.00
- Cash from Receivables (10% of prior-year Sales):
  Year 1: 0.00
  Year 5: 900,000.00
- Subtotal Cash from Operations:
  Year 1: 1,080,000.00
  Year 5: 14,400,000.00

There is no non-operating income, no indirect tax received, and no debt or equity proceeds included in the forecast; therefore, Subtotal Cash Received equals Subtotal Cash from Operations in every year.

Expenditures and Cash Management

Cash outflows include direct cost of sales and cash operating expenses (operating expenses minus depreciation), plus income taxes paid. Depreciation is a non-cash charge and is excluded from cash spending by design.

- Cash Spending (Direct CoS + cash OpEx, excluding Depreciation):
  Year 1: 1,056,000.00
  Year 5: 8,751,386.00
- Bill Payments (Income Taxes Paid):
  Year 1: 8,925.00
  Year 5: 1,242,090.98
- Subtotal Spent on Operations:
  Year 1: 1,064,925.00
  Year 5: 9,993,476.98

There are no non-operating expenses, no indirect taxes paid, no principal repayments, and no capital expenditures or dividends during the projection period; therefore, Subtotal Cash Spent equals Subtotal Spent on Operations in every year.

Net Cash Flow and Cash Balance

Net cash flow reflects the timing of collections (90/10 policy) and disciplined control of cash operating outflows. Positive cash generation expands steadily with scale.

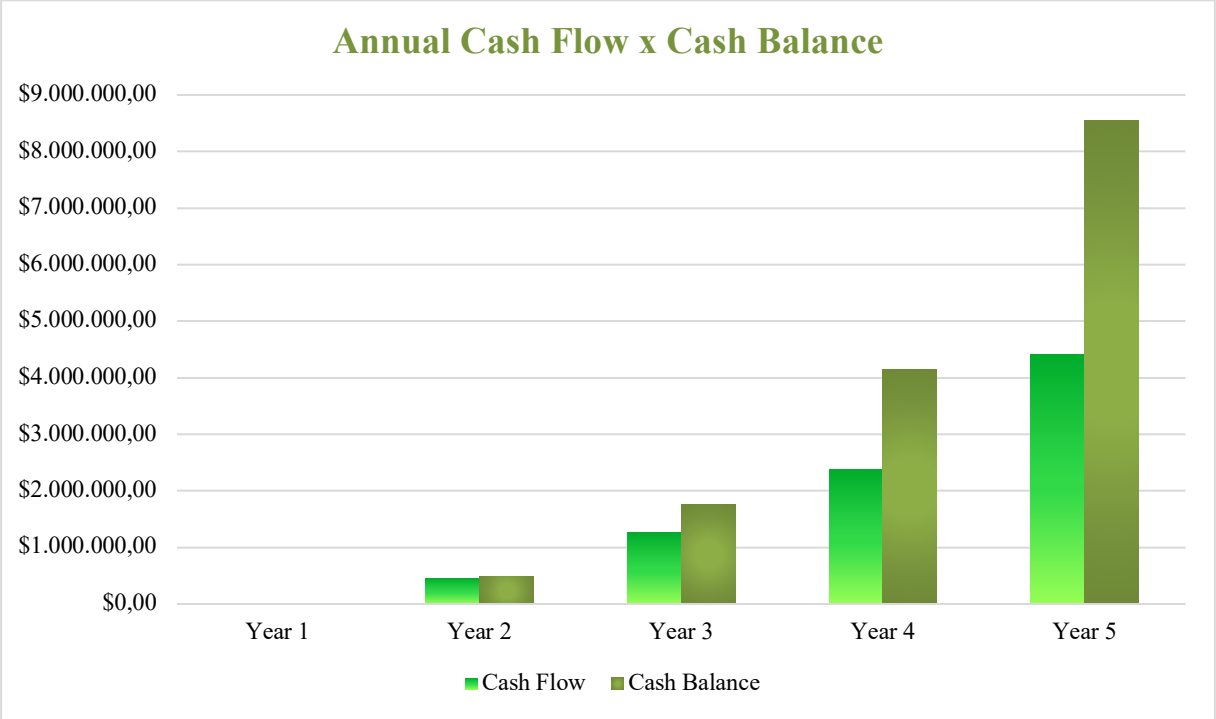
- Net Cash Flow (Subtotal Cash Received − Subtotal Cash Spent):
  Year 1: 15,075.00
  Year 5: 4,406,523.02
- Ending Cash Balance:
  Year 1: 15,075.00
  Year 5: 8,555,929.27

6.4.1 Annual Cash Flow Table

JMS Fresh Produce - Cash Flow

	Year 1	Year 2	Year 3	Year 4	Year 5
Cash Received					
Cash Sales	$1,080,000.00	$2,520,000.00	$4,950,000.00	$8,100,000.00	$13,500,000.00
Cash from Receivables	$0.00	$120,000.00	$280,000.00	$550,000.00	$900,000.00
Subtotal Cash from Operations	$1,080,000.00	$2,640,000.00	$5,230,000.00	$8,650,000.00	$14,400,000.00
Additional Cash Received					
Non-Operating Income	$0.00	$0.00	$0.00	$0.00	$0.00
Sales Tax / VAT / GST Received	$0.00	$0.00	$0.00	$0.00	$0.00
New Current Borrowing	$0.00	$0.00	$0.00	$0.00	$0.00
New Other Liabilities (interest-free)	$0.00	$0.00	$0.00	$0.00	$0.00
New Long-term Liabilities	$0.00	$0.00	$0.00	$0.00	$0.00
Sales of Other Current Assets	$0.00	$0.00	$0.00	$0.00	$0.00
Sales of Long-term Assets	$0.00	$0.00	$0.00	$0.00	$0.00
New Investment Received (Equity)	$0.00	$0.00	$0.00	$0.00	$0.00
Subtotal Cash Received	$1,080,000.00	$2,640,000.00	$5,230,000.00	$8,650,000.00	$14,400,000.00
Expenditures from Operations					
Cash Spending (COS + OpEx excl. Dep)	$1,056,000.00	$2,040,100.00	$3,595,575.00	$5,607,750.00	$8,751,386.00
Bill Payments (Taxes)	$8,925.00	$128,950.00	$357,793.75	$655,500.00	$1,242,090.98
Subtotal Spent on Operations	$1,064,925.00	$2,169,050.00	$3,953,368.75	$6,263,250.00	$9,993,476.98
Non-Operating Expense	$0.00	$0.00	$0.00	$0.00	$0.00
Sales Tax / VAT / GST Paid Out	$0.00	$0.00	$0.00	$0.00	$0.00
Principal Repayment of Current Borrowing	$0.00	$0.00	$0.00	$0.00	$0.00
Other Liabilities Principal Repayment	$0.00	$0.00	$0.00	$0.00	$0.00
Long-term Liabilities Principal Repayment	$0.00	$0.00	$0.00	$0.00	$0.00
Purchase Other Current Assets	$0.00	$0.00	$0.00	$0.00	$0.00
Purchase Long-term Assets	$0.00	$0.00	$0.00	$0.00	$0.00
Dividends	$0.00	$0.00	$0.00	$0.00	$0.00
Subtotal Cash Spent	$1,064,925.00	$2,169,050.00	$3,953,368.75	$6,263,250.00	$9,993,476.98
Net Cash Flow	$15,075.00	$470,950.00	$1,276,631.25	$2,386,750.00	$4,406,523.02
Cash Balance	**$15,075.00**	**$486,025.00**	**$1,762,656.25**	**$4,149,406.25**	**$8,555,929.27**

6.4.2 Annual Net Cash Flow x Cash Balance Chart



6.5 Balance Sheet Assumptions

Asset Growth

•*Current Assets.* Current assets consist exclusively of cash and accounts receivable. Under the 90/10 collection policy, receivables equal 10% of annual sales, while inventory and other current assets remain at zero. Cash rises from **$15,075.00 in Year 1** to **$8,555,929.27 in Year 5**, demonstrating consistent conversion of profits into liquidity. Accounts receivable increase from **$120,000.00 in Year 1** to **$1,500,000.00 in Year 5**, in direct proportion to revenue growth.

• *Long-Term Assets and Depreciation.* The model remains asset-light. To support the depreciation line in the P&L, a notional gross fixed asset of **$6,000.00 per year is assumed, offset by equivalent accumulated depreciation (−$6,000.00 per year). As a result, net long-term assets remain at $0.00** throughout the projection horizon.

• *Total Assets.* Total assets expand from **$135,075.00 in Year 1** to **$10,055,929.27 in Year 5**, driven predominantly by growth in cash and receivables.

Liability Management

• *Current Liabilities.* No accounts payable, tax payables, short-term funding, or other specified current liabilities are assumed. Instead, "Other Current Liabilities" captures operational accruals required for balance sheet integrity. This item grows from **$108,300.00 in Year 1** to **$2,876,150.07 in Year 5**. Taxes are paid during the year, resulting in no end-of-period tax balances.

• *Long-Term Liabilities.* No long-term borrowing is projected for the entire horizon.

• *Total Liabilities.* Total liabilities equal **$108,300.00 in Year 1** and grow to **$2,876,150.07 in Year 5**, consisting solely of operating accruals.

Equity Growth

• *Paid-in Capital.* No new equity injections are modeled; paid-in capital remains at **$0.00** in all years.

• *Retained Earnings.* With positive net income and no dividends distributed, retained earnings accumulate from **$26,775.00 in Year 1** to **$7,179,779.20 in Year 5**, fully funding the expansion.

• *Total Capital (Equity).* As paid-in capital is unchanged, total equity equals retained earnings. Equity rises from **$26,775.00 in Year 1** to **$7,179,779.20 in Year 5**. The accounting identity holds precisely in every year: **Total Assets = Total Liabilities + Total Capital.**

6.5.1 Annual Balance Sheet Table

JMS Fresh Produce - Balance Sheet

	Year 1	Year 2	Year 3	Year 4	Year 5
Assets					
Cash	$15,075.00	$486,025.00	$1,762,656.25	$4,149,406.25	$8,555,929.27
Accounts Receivable	$120,000.00	$280,000.00	$550,000.00	$900,000.00	$1,500,000.00
Inventory	$0.00	$0.00	$0.00	$0.00	$0.00
Other Current Assets	$0.00	$0.00	$0.00	$0.00	$0.00
Total Current Assets	$135,075.00	$766,025.00	$2,312,656.25	$5,049,406.25	$10,055,929.27
Long-term Assets					
Long-term Assets, Gross	$6,000.00	$12,000.00	$18,000.00	$24,000.00	$30,000.00
Accumulated Depreciation	-$6,000.00	-$12,000.00	-$18,000.00	-$24,000.00	-$30,000.00
Total Long-term Assets	$0.00	$0.00	$0.00	$0.00	$0.00
Total Assets	$135,075.00	$766,025.00	$2,312,656.25	$5,049,406.25	$10,055,929.27
Liabilities and Capital					
Accounts Payable	$0.00	$0.00	$0.00	$0.00	$0.00
Taxes Payable	$0.00	$0.00	$0.00	$0.00	$0.00
Short-term Funding	$0.00	$0.00	$0.00	$0.00	$0.00
Other Current Liabilities	$108,300.00	$352,400.00	$825,650.00	$1,595,900.00	$2,876,150.07
Subtotal Current Liabilities	$108,300.00	$352,400.00	$825,650.00	$1,595,900.00	$2,876,150.07
Long-term Liabilities					
Total Liabilities	$108,300.00	$352,400.00	$825,650.00	$1,595,900.00	$2,876,150.07
Paid-in Capital	$0.00	$0.00	$0.00	$0.00	$0.00
Retained Earnings	$26,775.00	$413,625.00	$1,487,006.25	$3,453,506.25	$7,179,779.20
Total Capital	$26,775.00	$413,625.00	$1,487,006.25	$3,453,506.25	$7,179,779.20
Total Liabilities and Capital	$135,075.00	$766,025.00	$2,312,656.25	$5,049,406.25	$10,055,929.27
Net Worth	**$26,775.00**	**$413,625.00**	**$1,487,006.25**	**$3,453,506.25**	**$7,179,779.20**

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Monthly Profit & Loss Table

JMS Fresh Produce - Profit & Loss

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Sales	$90,000.00	$93,600.00	$98,400.00	$99,600.00	$100,800.00	$102,000.00	$104,400.00	$104,400.00	$99,600.00	$99,600.00	$97,200.00	$110,400.00
Direct Cost of Sales	$43,509.38	$45,249.75	$47,570.25	$48,150.38	$48,730.50	$49,310.62	$50,470.88	$50,470.88	$48,150.38	$48,150.38	$46,990.12	$53,371.50
Other Costs of Sales	$7,678.12	$7,985.25	$8,394.75	$8,497.12	$8,599.50	$8,701.88	$8,906.62	$8,906.62	$8,497.12	$8,497.12	$8,292.38	$9,418.50
Total Cost of Sales	$51,187.50	$53,235.00	$55,965.00	$56,647.50	$57,330.00	$58,012.50	$59,377.50	$59,377.50	$56,647.50	$56,647.50	$55,282.50	$62,790.00
Gross Margin	$38,812.50	$40,365.00	$42,435.00	$42,952.50	$43,470.00	$43,987.50	$45,022.50	$45,022.50	$42,952.50	$42,952.50	$41,917.50	$47,610.00
Gross Margin	43.00%	43.00%	43.00%	43.00%	43.00%	43.00%	43.00%	43.00%	43.00%	43.00%	43.00%	43.00%
Payroll	$23,166.67	$23,166.67	$23,166.67	$23,166.67	$23,166.67	$23,166.67	$23,166.67	$23,166.67	$23,166.67	$23,166.67	$23,166.67	$23,166.63
Payroll Taxes	2316.70%	2316.70%	2316.70%	2316.70%	2316.70%	2316.70%	2316.70%	2316.70%	2316.70%	2316.70%	2316.70%	2316.60%
Depreciation	$500.00	$500.00	$500.00	$500.00	$500.00	$500.00	$500.00	$500.00	$500.00	$500.00	$500.00	$500.00
Rent	$5,000.00	$5,000.00	$5,000.00	$5,000.00	$5,000.00	$5,000.00	$5,000.00	$5,000.00	$5,000.00	$5,000.00	$5,000.00	$5,000.00
Insurance	$1,500.00	$1,500.00	$1,500.00	$1,500.00	$1,500.00	$1,500.00	$1,500.00	$1,500.00	$1,500.00	$1,500.00	$1,500.00	$1,500.00
Marketing	$2,500.00	$2,500.00	$2,500.00	$2,500.00	$2,500.00	$2,500.00	$2,500.00	$2,500.00	$2,500.00	$2,500.00	$2,500.00	$2,500.00
Utilities/Internet/Phone	$1,000.00	$1,000.00	$1,000.00	$1,000.00	$1,000.00	$1,000.00	$1,000.00	$1,000.00	$1,000.00	$1,000.00	$1,000.00	$1,000.00
Employees Education	$416.67	$416.67	$416.67	$416.67	$416.67	$416.67	$416.67	$416.67	$416.67	$416.67	$416.67	$416.63
Professional Fees	$1,666.67	$1,666.67	$1,666.67	$1,666.67	$1,666.67	$1,666.67	$1,666.67	$1,666.67	$1,666.67	$1,666.67	$1,666.67	$1,666.63
Office & Admin	$1,250.00	$1,250.00	$1,250.00	$1,250.00	$1,250.00	$1,250.00	$1,250.00	$1,250.00	$1,250.00	$1,250.00	$1,250.00	$1,250.00
Remodeling	$833.33	$833.33	$833.33	$833.33	$833.33	$833.33	$833.33	$833.33	$833.33	$833.33	$833.33	$833.37
Total Operating Expenses	$40,150.01	$40,150.01	$40,150.01	$40,150.01	$40,150.01	$40,150.01	$40,150.01	$40,150.01	$40,150.01	$40,150.01	$40,150.01	$40,149.89
Profit Before Interest and Taxes (EBIT)	-$1,337.51	$214.99	$2,284.99	$2,802.49	$3,319.99	$3,837.49	$4,872.49	$4,872.49	$2,802.49	$2,802.49	$1,767.49	$7,460.11
EBITDA	-$837.51	$714.99	$2,784.99	$3,302.49	$3,819.99	$4,337.49	$5,372.49	$5,372.49	$3,302.49	$3,302.49	$2,267.49	$7,960.11
Interest Expense	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
Taxes Incurred	$0.00	$51.81	$550.62	$675.32	$800.02	$924.73	$1,174.13	$1,174.13	$675.32	$675.32	$425.92	$1,797.68
Net Other Income	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
Net Profit	-$1,337.51	$163.18	$1,734.37	$2,127.17	$2,519.97	$2,912.76	$3,698.36	$3,698.36	$2,127.17	$2,127.17	$1,341.57	$5,662.43
Net Profit/Sales	**1.50%**	**0.20%**	**1.80%**	**2.10%**	**2.50%**	**2.90%**	**3.50%**	**3.50%**	**2.10%**	**2.10%**	**1.40%**	**5.10%**

Monthly Cash Flow Table

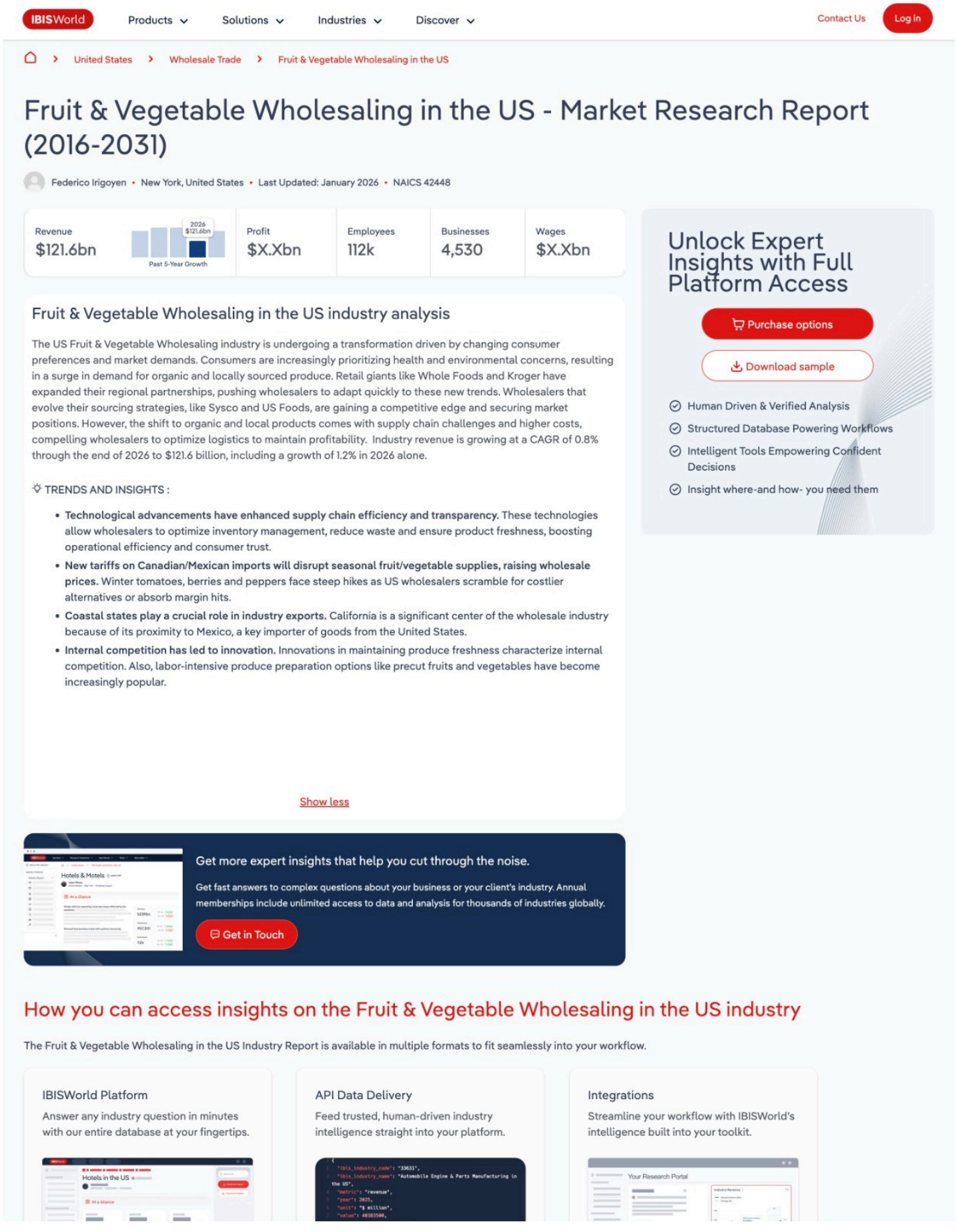
JMS Fresh Produce - Cash Flow

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Cash Received												
Cash Sales	$81,000.00	$84,240.00	$88,560.00	$89,640.00	$90,720.00	$91,800.00	$93,960.00	$93,960.00	$89,640.00	$89,640.00	$87,480.00	$99,360.00
Cash from Receivables	$0.00	$9,000.00	$9,360.00	$9,840.00	$9,960.00	$10,080.00	$10,200.00	$10,440.00	$10,440.00	$9,960.00	$9,960.00	$9,720.00
Subtotal Cash from Operations	$81,000.00	$93,240.00	$97,920.00	$99,480.00	$100,680.00	$101,880.00	$104,160.00	$104,400.00	$100,080.00	$99,600.00	$97,440.00	$109,080.00
Additional Cash Received												
Non-Operating Income	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
Sales Tax / VAT / GST Received	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
New Current Borrowing	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
New Other Liabilities (interest-free)	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
New Long-term Liabilities	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
Sales of Other Current Assets	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
Sales of Long-term Assets	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
New Investment Received (Equity)	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
Subtotal Cash Received	$81,000.00	$93,240.00	$97,920.00	$99,480.00	$100,680.00	$101,880.00	$104,160.00	$104,400.00	$100,080.00	$99,600.00	$97,440.00	$109,080.00
Expenditures from Operations												
Cash Spending (COS + OpEx excl. Dep)	$90,950.00	$93,002.00	$95,738.00	$96,368.00	$96,998.00	$97,790.00	$99,086.00	$99,086.00	$96,368.00	$96,368.00	$95,027.00	$102,470.00
Bill Payments (Taxes)	$0.00	$107.18	$1,163.87	$1,427.67	$1,691.47	$1,955.26	$2,477.86	$2,477.86	$1,427.67	$1,427.67	$899.57	$1,266.43
Subtotal Spent on Operations	$90,950.00	$93,109.18	$96,901.87	$97,795.67	$98,689.47	$99,745.26	$101,563.86	$101,563.86	$97,795.67	$97,795.67	$95,926.57	$103,736.43
Additional Cash Spent												
Non-Operating Expense	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
Sales Tax / VAT / GST Paid Out	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
Principal Repayment of Current Borrowing	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
Other Liabilities Principal Repayment	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
Long-term Liabilities Principal Repayment	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
Purchase Other Current Assets	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
Purchase Long-term Assets	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
Dividends	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
Subtotal Cash Spent	$90,950.00	$93,109.18	$96,901.87	$97,795.67	$98,689.47	$99,745.26	$101,563.86	$101,563.86	$97,795.67	$97,795.67	$95,926.57	$103,736.43
Net Cash Flow	-$9,950.00	$130.82	$1,018.13	$1,684.33	$1,990.53	$2,134.74	$2,596.14	$2,836.14	$2,284.33	$1,804.33	$1,513.43	$5,343.57
Cash Balance	**-$9,950.00**	**-$9,819.18**	**-$8,801.05**	**-$7,116.72**	**-$5,126.19**	**-$2,991.45**	**-$395.31**	**$2,440.83**	**$4,725.16**	**$6,529.49**	**$8,042.92**	**$13,386.49**

Monthly Balance Sheet Table

JMS Fresh Produce - Balance Sheet

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Assets												
Cash	-$1,338.00	$1,641.00	$2,856.00	$4,396.00	$5,901.00	$7,371.00	$9,131.00	$11,049.00	$13,023.00	$14,517.00	$16,050.00	$16,633.00
Accounts Receivable	$9,000.00	$9,360.00	$9,840.00	$9,960.00	$10,080.00	$10,200.00	$10,440.00	$10,440.00	$9,960.00	$9,960.00	$9,720.00	$11,040.00
Inventory	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
Other Current Assets	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
Total Current Assets	$7,662.00	$11,001.00	$12,696.00	$14,356.00	$15,981.00	$17,571.00	$19,571.00	$21,489.00	$22,983.00	$24,477.00	$25,770.00	$27,673.00
Long-term Assets												
Long-term Assets, Gross	$500.00	$1,000.00	$1,500.00	$2,000.00	$2,500.00	$3,000.00	$3,500.00	$4,000.00	$4,500.00	$5,000.00	$5,500.00	$6,000.00
Accumulated Depreciation	-$500.00	-$1,000.00	-$1,500.00	-$2,000.00	-$2,500.00	-$3,000.00	-$3,500.00	-$4,000.00	-$4,500.00	-$5,000.00	-$5,500.00	-$6,000.00
Total Long-term Assets	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
Total Assets	$7,662.00	$11,001.00	$12,696.00	$14,356.00	$15,981.00	$17,571.00	$19,571.00	$21,489.00	$22,983.00	$24,477.00	$25,770.00	$27,673.00
Liabilities and Capital												
Accounts Payable	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
Taxes Payable	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
Short-term Funding	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
Other Current Liabilities	-$3,676.00	-$5,023.00	-$6,348.00	-$7,678.00	-$8,993.00	-$10,200.00	-$10,757.00	-$11,472.00	-$11,644.00	-$11,739.00	-$11,885.00	-$11,756.00
Subtotal Current Liabilities	-$3,676.00	-$5,023.00	-$6,348.00	-$7,678.00	-$8,993.00	-$10,200.00	-$10,757.00	-$11,472.00	-$11,644.00	-$11,739.00	-$11,885.00	-$11,756.00
Long-term Liabilities												
Total Liabilities	-$3,676.00	-$5,023.00	-$6,348.00	-$7,678.00	-$8,993.00	-$10,200.00	-$10,757.00	-$11,472.00	-$11,644.00	-$11,739.00	-$11,885.00	-$11,756.00
Paid-in Capital	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
Retained Earnings	$11,338.00	$16,024.00	$19,044.00	$22,034.00	$24,974.00	$27,771.00	$30,328.00	$32,961.00	$34,627.00	$36,216.00	$37,655.00	$39,429.00
Total Capital	$11,338.00	$16,024.00	$19,044.00	$22,034.00	$24,974.00	$27,771.00	$30,328.00	$32,961.00	$34,627.00	$36,216.00	$37,655.00	$39,429.00
Total Liabilities and Capital	$7,662.00	$11,001.00	$12,696.00	$14,356.00	$15,981.00	$17,571.00	$19,571.00	$21,489.00	$22,983.00	$24,477.00	$25,770.00	$27,673.00
Net Worth	**$11,338.00**	**$16,024.00**	**$19,044.00**	**$22,034.00**	**$24,974.00**	**$27,771.00**	**$30,328.00**	**$32,961.00**	**$34,627.00**	**$36,216.00**	**$37,655.00**	**$39,429.00**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United States
Wholesale Trade
Fruit & Vegetable Wholesaling in the US
Fruit & Vegetable Wholesaling in the US - Market Research Report (2016-2031)
Federico Irigoyen • New York, United States • Last Updated: January 2026 • NAICS 42448
Revenue
$121.6bn
2026
$121.6bn
Past 5-Year Growth
Profit
$X.Xbn
Employees
112k
Businesses
4,530
Wages
$X.Xbn
Fruit & Vegetable Wholesaling in the US industry analysis
The US Fruit & Vegetable Wholesaling industry is undergoing a transformation driven by changing consumer preferences and market demands. Consumers are increasingly prioritizing health and environmental concerns, resulting in a surge in demand for organic and locally sourced produce. Retail giants like Whole Foods and Kroger have expanded their regional partnerships, pushing wholesalers to adapt quickly to these new trends. Wholesalers that evolve their sourcing strategies, like Sysco and US Foods, are gaining a competitive edge and securing market positions. However, the shift to organic and local products comes with supply chain challenges and higher costs, compelling wholesalers to optimize logistics to maintain profitability. Industry revenue is growing at a CAGR of 0.8% through the end of 2026 to $121.6 billion, including a growth of 1.2% in 2026 alone.
TRENDS AND INSIGHTS :
Technological advancements have enhanced supply chain efficiency and transparency. These technologies allow wholesalers to optimize inventory management, reduce waste and ensure product freshness, boosting operational efficiency and consumer trust.
New tariffs on Canadian/Mexican imports will disrupt seasonal fruit/vegetable supplies, raising wholesale prices. Winter tomatoes, berries and peppers face steep hikes as US wholesalers scramble for costlier alternatives or absorb margin hits.
Coastal states play a crucial role in industry exports. California is a significant center of the wholesale industry because of its proximity to Mexico, a key importer of goods from the United States.
Internal competition has led to innovation. Innovations in maintaining produce freshness characterize internal competition. Also, labor-intensive produce preparation options like precut fruits and vegetables have become increasingly popular.
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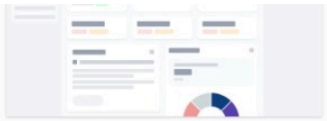

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Competitors

Meat, Beef & Poultry Processing in the US
Meat Markets in the US
Fish & Seafood Markets in the US

Complementors

Vegetable Farming in the US
Canned Fruit & Vegetable Processing in the US
Fruit & Vegetable Markets in the US

International industries

Fruit & Vegetable Wholesaling in Canada
Fruit and Vegetable Wholesaling in Australia
Fruit and Vegetable Wholesaling in New Zealand
Fruit & Vegetable Wholesaling in the UK
Food, Beverage & Tobacco Wholesaling in Ireland

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About this Industry
Performance
Products and Markets
Geographic Breakdown
Competitive Forces
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External Environment
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Top Questions Answered in This

Industry Statistics and Trends

Market size and recent performance (2016-2031)

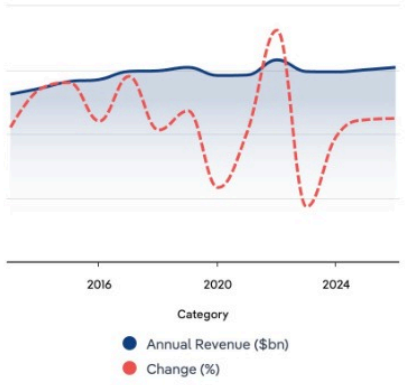
Industry revenue has grown at a CAGR of 0.8 % over the past five years, to reach an estimated $121.6bn in 2026.

TRENDS AND INSIGHTS :

Rising consumer demand for organic and locally sourced produce is reshaping the market

- Demand for organic foods among consumers is on the rise, with certified organic product sales in the United States hitting 71.6 billion dollars in 2024 and increasing by 5.2%, more than twice the overall market growth rate of 2.5%, as reported by the Organic Trade Association.
- Additional trends and insights available with purchase

Fruit & Vegetable Wholesaling in the US
Revenue (2016-2031)



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Industry outlook (2026-2031)

Market size is projected to decline over the next five years.

TRENDS AND INSIGHTS :

Automation and AI will revolutionize wholesale operations

- Expenditure on warehouse automation and AI-driven logistics is rapidly increasing in the food distribution sector, as major distributors such as Sysco and US Foods implement robotic picking and automated storage solutions to enhance case picking, boost order accuracy and manage higher volumes per labor hour.

Biggest companies in the Fruit & Vegetable Wholesaling in the US

Company	Market Share (%)	Revenue	Profit	Profit Margin (%)

There are no companies that hold a market share exceeding 5% in the Fruit & Vegetable Wholesaling in the US industry.

Products & Services Segmentation

Fruit & Vegetable Wholesaling in the US

Products & Services



Fruits X.X% Vegetables X.X% Other products X.X%

IBISWorld Source: IBISWorld

Industry revenue is measured across several distinct product and services lines, including Vegetables, Fruits and Other products. Vegetables is the largest segment of the Fruit & Vegetable Wholesaling in the US.

TRENDS AND INSIGHTS :

Stability in revenue from common fruits despite market fluctuations

- The revenue share from common fruits such as bananas, apples, watermelons, grapes, berries and peaches has remained stable. These staples are crucial in buoying this segment's revenue, as they continue to be popular among consumers because of their nutritional value and affordability.
- More insights available in the full report

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About this industry

Industry definition

Industry operators wholesale a range of fresh fruits and vegetables to supermarkets, delis, restaurants, cafes and institutions such as hospitals and retirement homes. This industry does not include fruit and vegetable processing.

What's included in this industry?

Products and services covered in the Fruit & Vegetable Wholesaling industry in the United States include Fresh fruit wholesaling and Fresh vegetable wholesaling.

Companies

Companies covered in the Fruit & Vegetable Wholesaling industry in the United States include .

Purchase this report to view all major companies in this industry.

Related Terms

Related terms covered in the Fruit & Vegetable Wholesaling industry in the United States include ripening, supply chain and cooperative (co-op)
.

Industry Code

NAICS 2017

NAICS 42448 - Fruit & Vegetable Wholesaling in the US

Performance

Get an indication of the industry's health through historical, current and forward-looking trends in the performance indicators that make or break businesses.

Analyst insights

Technological advancements have enhanced supply chain efficiency and transparency. These technologies allow wholesalers to optimize inventory management, reduce waste and ens...

In this chapter (4)

- Current Performance
- Outlook
- Volatility
- Life Cycle

Key metrics

- Annual Revenue, Recent Growth, Forecast, Revenue Volatility
- Number of Employees, Recent Growth, Forecast, Employees per Business, Revenue per Employee
- Number of Businesses, Recent Growth, Forecast, Employees per Business, Revenue per Business
- Total Profit, Profit Margin, Profit per Business

Charts

- Revenue, including historical (2016-2025) and forecast (2026-2031)
- Employees, including historical (2016-2025) and forecast (2026-2031)
- Businesses, including historical (2016-2025) and forecast (2026-2031)
- Profit, including historical (2016-2026)
- Industry Volatility vs. Revenue Growth
- Industry Life Cycle

Detailed analysis

- Trends in supply, demand and current events that are driving current industry performance
- Expected trends, economic factors and ongoing events that drive the industry's outlook
- Key success factors for businesses to overcome volatility
- How contribution to GDP, industry saturation, innovation, consolidation, and technology and systems influence the industry's life cycle phase.

Products and Markets

Learn about an industry's products and services, markets and trends in international trade.

Analyst insight

New tariffs on Canadian/Mexican imports will disrupt seasonal fruit/vegetable supplies, raising wholesale prices. Winter tomatoes, berries and peppers face steep hikes as US ...

In this chapter

- Products & Services
- Major Markets

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- Product innovation level

Charts

- Products & services segmentation in 2026
- Major market segmentation in 2026

Detailed analysis

- Trends impacting the recent performance of the industry's various segments
- Innovations in the industry's product or service offering, specialization or delivery method
- Key factors that successful businesses consider in their offerings
- Buying segments and key trends influencing demand for industry products and services

Geographic Breakdown

Discover where business activity is most concentrated in an industry and the factors driving these trends to find opportunities and conduct regional benchmarking.

Analyst insights

Coastal states play a crucial role in industry exports. California is a significant center of the wholesale industry because of its proximity to Mexico, a key importer of goo...

In this chapter (1)

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- Share of revenue, establishment, wages and employment in each state
- Share of population compared to establishments in each region in 2026

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- Number and share of establishments in each state in 2026
- Number and share of revenue each state accounts for in 2026
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- Number and share of employees in each state in 2026

Detailed analysis

- Geographic spread of the industry across North America, and trends associated with changes in the business landscape
- Key success factors for businesses to use location to their advantage

Competitive Forces

Get data and insights on what's driving competition in an industry and the challenges industry operators and new entrants may face, with analysis built around Porter's Five Forces framework.

Analyst insights

Internal competition has led to innovation. Innovations in maintaining produce freshness characterize internal competition. Also, labor-intensive produce preparation options ...

In this chapter (4)

- Concentration
- Barriers to Entry
- Substitutes
- Buyer & Supplier Analysis

Key metrics

- Industry concentration level
- Industry competition level and trend
- Barriers to entry level and trend
- Substitutes level and trend
- Buyer power level and trend
- Supplier power level and trend

Charts

- Market share concentration among the top 4 suppliers from 2021-2026
- Supply chain including upstream supplying industries and downstream buying industries, flow chart

Detailed analysis

- Factors impacting the industry's level of concentration, such as business distribution, new entrants, or merger and acquisition activity.
- Key success factors for businesses to manage the competitive environment of the industry.
- Challenges that potential industry entrants face such as legal, start-up costs, differentiation, labor/capital intensity and capital expenses.
- Key success factors for potential entrants to overcome barriers to entry.
- Competitive threats from potential substitutes for the industry's own products and services.
- Key success factors for how successful businesses can compete with substitutes.
- Advantages that buyers have to keep favorable purchasing conditions.
- Advantages that suppliers have to maintain favorable selling conditions.
- Key success factors for how businesses can navigate buyer and supplier power.

Companies

There are no companies that hold a market share exceeding 5% in the Fruit & Vegetable Wholesaling in the US industry.

Analyst insights

Industry leaders have diverse options. Leading wholesalers offer much more than just fruits and vegetables. Sysco and US Foods, the two most prominent companies in the indust...

External Environment

Understand the demographic, economic and regulatory factors that shape how businesses in an industry perform.

Analyst insights

The industry is beset by heavy regulation at the federal and state levels. The Food and Drug Administration (FDA) outlines standards for growing, transporting and selling pro...

In this chapter

- External Drivers
- Regulation & Policy
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- Assistance level and trend

Charts

- Regulation & Policy historical data and forecast (2016-2031)
- Assistance historical data and forecast (2016-2031)

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- Major types of regulations, regulatory bodies, industry standards or specific regulations impacting requirements for industry operators
- Key governmental and non-governmental groups or policies that may provide some relief for industry operators.

Financial Benchmarks

View average costs for industry operators and compare financial data against an industry's financial benchmarks over time.

Analyst insights

Purchases are the most significant industry expense. Over the past five years, the volatile prices of fresh fruit and vegetables have made profitability difficult.

In this chapter

- Cost Structure
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Key Statistics

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Including values and annual change:

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- IVA (2016-2031)
- Establishments (2016-2031)
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- Employment (2016-2031)
- Exports (2016-2031)
- Imports (2016-2031)
- Wages (2016-2031)

Top Questions Answered

Unlock comprehensive answers and precise data upon purchase. View purchase options.

What is the market size of the Fruit & Vegetable Wholesaling industry in the United States in 2026?

The market size of the Fruit & Vegetable Wholesaling industry in the United States is $121.6bn in 2026.

How many businesses are there in the Fruit & Vegetable Wholesaling industry in the United States in 2026?

There are 4,530 businesses in the Fruit & Vegetable Wholesaling industry in the United States, which has grown at a CAGR of 0.6 % between 2021 and 2026.

How may import tariffs affect the Fruit & Vegetable Wholesaling industry in the United States?

The Fruit & Vegetable Wholesaling industry in the United States is unlikely to be materially impacted by import tariffs with imports accounting for a low share of industry revenue.

How may export tariffs affect the Fruit & Vegetable Wholesaling industry in the United States?

The Fruit & Vegetable Wholesaling industry in the United States is unlikely to be materially impacted by export tariffs with exports accounting for a low share of industry revenue.

Has the Fruit & Vegetable Wholesaling industry in the United States grown or declined over the past 5 years?

The market size of the Fruit & Vegetable Wholesaling industry in the United States has been growing at a CAGR of 0.8 % between 2021 and 2026.

What is the forecast growth of the Fruit & Vegetable Wholesaling industry in the United States over the next 5 years?

Over the next five years, the Fruit & Vegetable Wholesaling industry in the United States is expected to decline.

What does the Fruit & Vegetable Wholesaling industry in the United States include?

Fresh fruit wholesaling and Fresh vegetable wholesaling are part of the Fruit & Vegetable Wholesaling industry in the United States.

How competitive is the Fruit & Vegetable Wholesaling industry in the United States?

The level of competition is high and steady in the Fruit & Vegetable Wholesaling industry in the United States.

Methodology

How are IBISWorld reports created?

IBISWorld has been a leading provider of trusted industry research for over 50 years to the most successful companies worldwide. With offices in Australia, the United States, the United Kingdom, Germany and China, we are proud to have local teams of analysts that conduct research, data analysis and forecasting to produce data-driven industry reports.

Our analysts start with official, verified and publicly available sources of data to build the most accurate picture of each industry. Analysts then leverage their expertise and knowledge of the local markets to synthesize trends into digestible content for IBISWorld readers. Finally, each report is reviewed by one of IBISWorld's editors, who provide quality assurance to ensure accuracy and readability.

IBISWorld relies on human-verified data and human-written analysis to compile each standard industry report. We do not use generative AI tools to write insights, although members can choose to leverage AI-based tools within the platform to generate additional analysis formats.

What data sources do IBISWorld analysts use?

Each industry report incorporates data and research from government databases, industry-specific sources, industry contacts, and our own proprietary database of statistics and analysis to provide balanced, independent and accurate insights.

Key data sources in the US include:

- US Census Bureau
- US Bureau of Labor Statistics
- US International Trade Commission

Analysts also use industry specific sources to complement catch-all sources, although their perspective may focus on a particular organization or representative body, rather than a clear overview of all industry operations. However, when balanced against other perspectives, industry-specific sources provide insights into industry trends.

These sources include:

- Industry and trade associations
- Industry federations or regulators
- Major industry players annual or quarterly filings

Finally, IBISWorld's global data scientists maintain a proprietary database of macroeconomic and demand drivers, which our analysts use to help inform industry data and trends. They also maintain a database of statistics and analysis on thousands of industries, which has been built over our more than 50-year history and offers comprehensive insights into long-term trends.

How does IBISWorld forecast its data?

IBISWorld's analysts and data scientists use the sources above to create forecasts for our proprietary datasets and industry statistics. Depending on the dataset, they may use regression analysis, multivariate analysis, time-series analysis or exponential smoothing techniques to project future data for the industry or driver. Additionally, analysts will leverage their local knowledge of industry operating and regulatory conditions to impart their best judgment on the forecast model.

IBISWorld prides itself on being a trusted, independent source of data, with over 50 years of experience building and maintaining rich datasets and forecasting tools. We are proud to be the keystone source of industry information for thousands of companies across the world.

Learn more about our methodology and data sourcing on the Help Center.

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Morbidity and Mortality Weekly Report (*MMWR*)

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Adults Meeting Fruit and Vegetable Intake Recommendations — United States, 2019

Weekly / January 7, 2022 / 71(1);1–9

Print

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View suggested citation

Summary

What is already known about this topic?

The percentage of U.S. adults meeting fruit and vegetable intake recommendations is low.

What is added by this report?

In 2019, 12.3% and 10.0% of surveyed adults met fruit and vegetable intake recommendations, respectively. Meeting fruit intake recommendations was highest among Hispanic adults (16.4%) and lowest among males (10.1%). Meeting vegetable intake recommendations was highest among adults aged ≥51 years (12.5%) and lowest among adults with low income (6.8%).

What are the implications for public health practice?

States can use this information to tailor efforts to populations at high risk (e.g., men, young adults, and adults with lower income) and to implement enhanced interventions, policies, and programs that help persons increase fruit and vegetable consumption to support immune function and prevent chronic diseases.

Article Metrics

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3600

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X (96)
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Podcasts (5)
Mendeley (429)

252

252 Total citations
162 Recent citations
68 Field Citation Ratio
21 Relative Citation Ratio

The 2020–2025 Dietary Guidelines for Americans* advise incorporating more fruits and vegetables into U.S. residents' diets as part of healthy dietary patterns. Adults should consume 1.5–2 cup-equivalents of fruits and 2–3 cup-equivalents of vegetables daily.† A healthy diet supports healthy immune function (*1*) and helps to prevent obesity, type 2 diabetes, cardiovascular diseases, and some cancers (*2*); having some of these conditions can predispose persons to more severe illness and death from COVID-19 (*3*). CDC used the most recent 2019 Behavioral Risk Factor Surveillance system (BRFSS) data to estimate the percentage of states' adult population who met intake recommendations overall and by sociodemographic characteristics for 49 states and the District of Columbia (DC). Overall, 12.3% of adults met fruit recommendations, ranging from 8.4% in West Virginia to 16.1% in Connecticut, and 10.0% met vegetable recommendations, ranging from 5.6% in Kentucky to 16.0% in Vermont. The prevalence of meeting fruit intake recommendations was highest among Hispanic adults (16.4%) and lowest among males (10.1%); meeting vegetable intake recommendations was highest among adults aged ≥51 years (12.5%) and lowest among those living below or close to the poverty level (income to poverty ratio [IPR] <1.25) (6.8%). Additional policies§ and programs that will increase access to fruits and vegetables in places where U.S. residents live, learn, work, and play, might increase consumption and improve health.

Tables

Table 1

Table 2

Table 3

Related Materials

PDF [698K]

BRFSS is an annual, state-based, random-digit–dialed telephone survey of health-related behaviors representative of noninstitutionalized adults aged ≥18 years in the United States and participating territories.¶ Since 1989, BRFSS has collected information on respondents' frequency of fruit and vegetable consumption. The current module assesses the number of times per day, week, or month a respondent consumed whole fruit, 100% fruit juice, salads, fried potatoes, other potatoes, and other vegetables during the past 30 days. In 2019, New Jersey data did not meet the minimum requirements for inclusion** and were excluded. Among 418,268 respondents to the current BRFSS, 8,458 residents of Guam and Puerto Rico were excluded, because the scoring algorithms were derived from the National Health and Nutrition Examination Survey (NHANES), which excludes territories, as were 59,589 respondents who did not answer one or more questions in the fruit and vegetable module, 1,347 with implausible reported values of fruit or vegetable intake (>16 times and >23 times per day, respectively), 54,306 who did not report income, and two who did not report race. The resulting analytic sample included 294,566 (70%) participants. Among states included in the analysis, the median state response rate was 49.4% and ranged from 37.3% to 73.1%.††

Previously developed scoring algorithms were used to estimate the percentage of each state's population who met fruit and vegetable intake recommendations. Development of the methodology (*4*) and application of the prediction algorithm have been previously reported.§§ Twenty-four–hour dietary recall data from 2013–2016 NHANES were used to fit age- and sex-specific logistic regression models that estimate probabilities of meeting recommendations as functions of reported daily frequency of consumption, race/ethnicity, and IPR, adjusting for day-to-day variation (*4*). Consistent with previous studies (*4,5*), analyses accounted for the complex survey design and nonresponse, and balanced repeated replication was used to calculate standard errors and 95% CIs with SAS (version 9.4; SAS Institute). T-tests were used to compare differences by sociodemographic groups with Stata (version 17.0; StataCorp). This activity was reviewed by CDC and was conducted consistent with applicable federal law and CDC policy.¶¶

In 2019, the median frequency of reported fruit intake was once per day; this was consistent across all jurisdictions (Table 1). The median frequency of reported vegetable intake was 1.6 times per day, ranging from 1.5 times per day in Louisiana, Mississippi, Nevada, and New Mexico to 1.9 times per day in Maine and Vermont.

intake recommendations, ranging from 5.6% in Kentucky to 16.0% in Vermont.

Fruit intake (Table 2) and vegetable intake (Table 3) varied by sociodemographic characteristics. Overall, a higher proportion of women met both fruit and vegetable recommendations (14.5% and 12.4%, respectively) than did men (10.1% and 7.6%, respectively); a similar pattern was observed across most states. A significantly higher proportion of adults aged ≥51 years (12.5%) met vegetable recommendations compared with younger adults aged 18–30 years (7.1%) and 31–50 years (8.7%). This pattern was also observed in 37 states. A significantly higher proportion of Hispanic adults (16.4%) met fruit intake recommendations compared with those who were non-Hispanic White overall (11.1%); this pattern was observed in 14 states (Table 2). Overall, a significantly lower proportion of non-Hispanic Black adults (6.9%) met vegetable intake recommendations than did their non-Hispanic White counterparts (10.1%); however, this pattern was statistically significant in only three states (California, Massachusetts, and Nevada). Overall, a significantly higher proportion of adults living in households with the highest income category met vegetable intake recommendations (12.2%) than did adults living in middle income households (7.7%) and with the lowest income categories (6.8%); patterns were similar in most states.

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Discussion

In 2019, fruit and vegetable intake among U.S. adults remained low, with only approximately one in 10 adults meeting either recommendation; differences were found by state, age, sex, race/ethnicity, and household income. Consistent with previous analyses of BRFSS data (*4*,*5*), a higher percentage of women than men met recommendations for fruit and vegetable intake, and larger disparities were observed in vegetable intake than fruit intake by age groups and household income. Results were also consistent with earlier findings (*5*) that higher percentages of Hispanic than non-Hispanic White adults met fruit intake recommendations while lower percentages of non-Hispanic Black than non-Hispanic White adults met vegetable intake recommendations. In 2015, intake was also low: 12.2% of respondents met fruit intake recommendations and 9.3% met vegetable intake recommendations (*5*); however, direct comparisons between current findings to those of 2015 cannot be made because of changes in methodology.***

Perceived barriers to fruit and vegetable consumption include cost, as well as limited availability and access (*6*–*8*). For some persons, such barriers might have worsened during the COVID-19 pandemic, related to economic and supply chain disruptions that could further limit ability to access healthier foods (*9*). Tailored intervention efforts to increase fruit and vegetable intake are needed to reduce age, sex, racial/ethnic, and income disparities in meeting fruit and vegetable intake recommendations among U.S. adults. States and communities can take actions by supporting food policy councils (community-based coalitions often supporting a specific community such as households with incomes below the federal poverty level or persons from racial and ethnic minority groups) to build a more sustainable food system,††† supporting community retail programs to attract grocery stores and supermarkets to underserved communities to improve community food quality§§§ and increase healthy food access, promoting participation in federal nutrition assistance programs,¶¶¶ and implementing nutrition incentive and produce prescription programs**** that provide resources for persons to purchase fruits and vegetables. Additional efforts might include the use of nutrition standards, organizational food service guidelines,†††† and farm-to-institution approaches to ensure that culturally preferred fruit and vegetable offerings are available in work sites, hospitals, park and recreation centers, food banks and pantries, restaurants, and other locations (*10*). Education and social marketing can also help to ensure awareness of the recommended amounts of fruits and vegetables to consume and how to incorporate fruits and vegetables into meals and snacks.§§§§ Finally, conditions in which persons are born, live, learn, work, play, worship, and age, known as social determinants of health, affect health and influence the opportunities available to practice healthy behaviors. Ensuring that all persons, at all times, have physical, social, and economic access to enough foods, including fruits and vegetables that are safe, high quality, and meet their dietary needs and food preferences, requires multisectoral and multilevel collaboration.¶¶¶¶

The findings of this report are subject to at least five limitations. First, self-reported dietary behaviors are subject to recall and social desirability biases whereby different demographic groups might overestimate and others underestimate dietary intake.***** Second, BRFSS includes only noninstitutionalized adults; therefore, findings cannot be generalized to the entire U.S. adult population. In addition, U.S. territories were excluded because of the NHANES scoring algorithm. Third, using the algorithms to estimate intake might have resulted in measurement error. However, previous analyses showed that applying prediction equations to BRFSS frequency data yielded estimates comparable with national estimates that used more accurate 24-hour recalls (*4*). Fourth, 14% (59,589) of participants had missing fruit and vegetable data, and these respondents tended to be older and have a lower income. However, the percentage of missing data on fruit and vegetable and respondent characteristics are similar to that in previous studies (*4*,*5*). Finally, 16% (54,306) of participants had missing income data, but the estimated percentage of persons meeting recommendations was similar when missing income was imputed based on age, sex, and race/ethnicity.

Too few U.S. residents consume the recommended amounts of fruits and vegetables. Following a dietary pattern that includes sufficient fruits and vegetables can help protect against some chronic conditions that are among the leading causes of mortality in the United States (*2*); some of these conditions are also associated with more severe illness from COVID-19 (*3*). For most states, the BRFSS module is the only source of uniform, state-level dietary data for adults, and this information often provides critical metrics for state chronic disease plans. States can use the findings to guide their programs, communications and social marketing, and policies to support improving fruit and vegetable access and intake. Continued efforts to increase fruit and vegetable consumption by improving access and affordability in diverse community and institutional settings will help mitigate health disparities among U.S. residents.

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Acknowledgments

Survey participants, state BRFSS coordinators.

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* https://www.dietaryguidelines.gov/sites/default/files/2020-12/Dietary_Guidelines_for_Americans_2020-2025.pdf

† Appropriate for adults who engage in <30 minutes of moderate physical activity; more active adults might be able to consume more while staying within calorie needs. https://www.myplate.gov/eat-healthy/fruits ; https://www.myplate.gov/eat-healthy/vegetables

§ https://www.healthypeople.gov/sites/default/files/NWS_ExecutiveSummary_2018-10.03.pdf

¶ https://www.cdc.gov/brfss/

** https://www.cdc.gov/brfss/annual_data/2019/pdf/overview-2019-508.pdf

†† https://www.cdc.gov/brfss/annual_data/2019/pdf/2019-sdqr-508.pdf

§§ https://www.cdc.gov/nutrition/data-statistics/data-users-guide.html

¶¶ 45 C.F.R. part 46.102(l)(2), 21 C.F.R. part 56; 42 U.S.C. Sect. 241(d); 5 U.S.C. Sect. 552a; 44 U.S.C. Sect. 3501 et seq.

*** https://www.cdc.gov/nutrition/data-statistics/using-the-new-BRFSS-modules.html

††† https://www.foodpolicynetworks.org/

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¶¶¶ https://www.nal.usda.gov/legacy/fnic/usda-nutrition-assistance-programs

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TABLE 1. State-specific median frequency of fruit and vegetable intake among adults aged ≥18 years and percentage of respondents meeting federal fruit and vegetable recommendations — Behavioral Risk Factor Surveillance System, 49 states* and District of Columbia, 2019

Return

Jurisdiction	Sample size	Median daily intake frequency		% of respondents (95% CI) meeting recommendations	
		Fruit	Vegetable	Fruit	Vegetable

~~Overall~~	~~294,566~~	~~1.0~~	~~1.6~~	~~12.3 (11.2–13.3)~~	~~10.0 (9.3–11.3)~~
Alabama	4,990	1.0	1.6	10.3 (8.7–12.0)	6.7 (5.1–8.3)
Alaska	2,138	1.0	1.7	12.2 (9.5–15.0)	11.4 (8.8–14.0)
Arizona	6,149	1.0	1.6	14.8 (12.6–16.9)	12.8 (10.5–15.0)
Arkansas	3,571	1.0	1.6	11.6 (9.6–13.6)	10.8 (8.7–13.0)
California	8,894	1.0	1.6	13.6 (11.9–15.2)	11.3 (9.6–13.0)
Colorado	6,740	1.0	1.7	12.4 (10.7–14.1)	10.4 (8.7–12.2)
Connecticut	6,228	1.0	1.7	16.1 (14.2–18.0)	14.1 (12.1–16.1)
Delaware	2,684	1.0	1.7	13.4 (10.9–15.8)	9.1 (7.0–11.2)
District of Columbia	1,873	1.0	1.8	14.5 (11.8–17.1)	12.8 (10.3–15.3)
Florida	11,389	1.0	1.7	12.4 (10.6–14.2)	10.5 (8.6–12.5)
Georgia	5,017	1.0	1.7	11.2 (9.3–13.1)	8.9 (6.9–10.8)
Hawaii	6,279	1.0	1.6	11.9 (10.2–13.6)	12.2 (10.3–14.1)
Idaho	3,847	1.0	1.7	10.3 (8.5–12.0)	9.7 (7.6–11.7)
Illinois	4,565	1.0	1.6	12.9 (11.1–14.6)	8.9 (7.2–10.7)
Indiana	5,845	1.0	1.6	13.0 (11.3–14.7)	10.5 (8.7–12.3)
Iowa	7,460	1.0	1.6	10.6 (9.1–12.1)	7.3 (5.8–8.8)
Kansas	8,297	1.0	1.7	10.9 (9.5–12.4)	9.8 (8.1–11.4)
Kentucky	4,743	1.0	1.6	8.8 (7.1–10.4)	5.6 (4.1–7.2)
Louisiana	3,324	1.0	1.5	11.2 (9.2–13.2)	7.3 (5.7–8.9)
Maine	7,902	1.0	1.9	11.9 (10.1–13.7)	10.9 (8.9–12.9)
Maryland	12,464	1.0	1.6	13.5 (11.9–15.2)	9.9 (8.2–11.5)
Massachusetts	5,209	1.0	1.7	13.4 (11.6–15.3)	10.5 (8.6–12.3)
Michigan	8,031	1.0	1.6	11.1 (9.5–12.7)	7.2 (5.7–8.8)
Minnesota	11,732	1.0	1.6	12.7 (11.1–14.2)	8.8 (7.2–10.4)
Mississippi	3,651	1.0	1.5	10.5 (8.6–12.5)	7.7 (6.0–9.4)
Missouri	5,299	1.0	1.6	8.7 (7.2–10.2)	7.4 (5.6–9.2)
Montana	5,073	1.0	1.7	10.0 (8.4–11.5)	9.6 (7.8–11.3)
Nebraska	12,557	1.0	1.6	10.7 (9.2–12.1)	8.0 (6.4–9.6)
Nevada	2,086	1.0	1.5	8.6 (6.9–10.3)	7.4 (5.5–9.3)
New Hampshire	4,043	1.0	1.7	12.9 (11.0–14.8)	12.3 (10.2–14.5)
New Mexico	4,638	1.0	1.5	11.5 (9.7–13.3)	9.2 (7.2–11.1)
New York	9,181	1.0	1.7	15.3 (13.5–17.1)	14.2 (12.3–16.0)
North Carolina	2,971	1.0	1.7	11.0 (9.2–12.8)	9.5 (7.6–11.5)
North Dakota	4,394	1.0	1.6	9.8 (8.0–11.7)	7.3 (5.6–9.1)

Ohio	9,616	1.0	1.6	9.5 (8.0–11.0)	7.4 (5.8–9.0)
Oklahoma	3,958	1.0	1.6	8.7 (7.2–10.2)	6.9 (5.2–8.5)
Oregon	4,303	1.0	1.7	12.9 (11.1–14.7)	12.2 (10.3–14.1)
Pennsylvania	5,150	1.0	1.6	10.6 (9.0–12.3)	8.4 (6.7–10.1)
Rhode Island	4,002	1.0	1.7	14.8 (12.6–17.0)	13.4 (11.1–15.8)
South Carolina	5,050	1.0	1.6	11.9 (10.2–13.7)	10.2 (8.4–12.0)
South Dakota	4,762	1.0	1.6	10.3 (8.1–12.5)	7.4 (5.4–9.5)
Tennessee	4,289	1.0	1.7	11.0 (9.2–12.8)	9.2 (7.3–11.1)
Texas	8,260	1.0	1.6	13.8 (11.7–15.8)	11.9 (9.8–14.0)
Utah	9,011	1.0	1.6	11.5 (10.0–13.1)	8.3 (6.8–9.8)
Vermont	4,530	1.0	1.9	15.3 (13.1–17.6)	16.0 (13.6–18.4)
Virginia	7,268	1.0	1.7	12.2 (10.4–13.9)	9.6 (7.9–11.4)
Washington	9,604	1.0	1.7	12.6 (11.0–14.2)	11.9 (10.1–13.7)
West Virginia	4,117	1.0	1.6	8.4 (6.8–9.9)	6.9 (5.3–8.6)
Wisconsin	3,881	1.0	1.6	11.6 (9.7–13.5)	7.6 (5.9–9.3)
Wyoming	3,501	1.0	1.7	9.4 (7.7–11.2)	8.4 (6.4–10.5)

* New Jersey data did not meet the minimum requirements for inclusion in the 2019 aggregate data set and were excluded.

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TABLE 2. State-specific percentage of respondents meeting federal fruit intake recommendations, by sex, age, race/ethnicity, and income-to-poverty ratio — Behavioral Risk Factor Surveillance System, 49 states* and District of Columbia, 2019

Return

	% (95% CI)										
	Sex		Age group, yrs			Race/Ethnicity†			IPR		
Jurisdiction	Male	Female (Ref)	18–30	31–50	≥51 (Ref)	Black	Hispanic	White (Ref)	<1.25	1.25–3.49	>3.49 (Ref)
National	**10.1§ (8.5–11.6)**	**14.5 (13.1–15.8)**	**10.2 (7.7–12.6)**	**13.2 (11.4–14.9)**	**12.6 (11.1–14.1)**	**12.9 (11.1–14.7)**	**16.4§ (14.4–18.5)**	**11.1 (10.1–12.2)**	**12.8 (11.2–14.4)**	**10.9§ (9.6–12.3)**	**12.9 (11.5–14.2)**
Alabama	9.2 (6.6–11.7)	11.4 (9.4–13.4)	9.5 (4.9–14.2)	11.9 (9.2–14.6)	9.5 (7.6–11.4)	12.9§ (9.7–16.0)	17.3 (6.2–28.4)	9.1 (7.5–10.7)	12.0 (8.5–15.4)	8.0§ (6.0–10.0)	11.3 (9.1–13.5)
Alaska	9.5§ (6.3–12.7)	15.4 (11.2–19.6)	13.6 (4.6–22.6)	10.9 (7.0–14.8)	12.9 (9.8–15.9)	—¶	—¶	11.2 (8.8–13.6)	16.2 (6.1–26.4)	8.4§ (4.7–12.0)	13.4 (10.1–16.7)
Arizona	12.7 (9.7–15.8)	16.8 (13.9–19.7)	13.8 (8.4–19.2)	15.6 (11.8–19.5)	14.5 (11.9–17.1)	19.3 (10.2–28.4)	17.8 (13.3–22.2)	13.1 (11.0–15.3)	19.6 (13.9–25.4)	11.7 (8.8–14.6)	15.1 (12.4–17.7)
Arkansas	10.7 (7.7–13.7)	12.5 (9.9–15.0)	10.3 (5.1–15.5)	12.0 (8.4–15.6)	12.0 (9.7–14.3)	13.1 (7.8–18.4)	18.6 (9.3–27.9)	10.8 (8.9–12.7)	11.1 (7.5–14.7)	10.5 (7.8–13.2)	12.9 (10.0–15.8)
California	11.3§ (8.9–	15.8 (13.7–	9.5§ (6.3–12.8)	15.1 (12.2–	14.5 (12.2–	11.2 (7.5–	16.3§ (13.8–18.8)	12.3 (10.5–	13.9 (11.3–	13.4 (10.8–	13.5 (11.4–

Colorado	10.7§ (8.2–13.1)	14.1 (11.9–16.3)	9.8 (6.1–13.6)	14.4 (11.3–17.4)	12.0 (9.8–14.1)	12.7 (7.1–18.2)	15.3 (12.0–18.5)	11.6 (9.9–13.4)	10.8 (7.9–13.7)	10.3§ (8.0–12.5)	13.6 (11.5–15.7)
Connecticut	13.6§ (10.9–16.3)	18.6 (15.9–21.2)	15.0 (10.0–20.0)	15.8 (12.5–19.1)	16.7 (14.3–19.2)	15.7 (11.0–20.5)	19.8 (15.0–24.7)	15.7 (13.6–17.8)	17.3 (12.8–21.9)	14.4 (11.5–17.2)	16.6 (14.3–18.9)
Delaware	11.3 (7.6–15.0)	15.2 (12.2–18.2)	10.3 (4.2–16.3)	15.3 (10.7–19.9)	13.2 (10.4–16.1)	15.3 (9.7–21.0)	21.8§ (13.0–30.6)	11.4 (9.1–13.6)	14.0 (9.5–18.5)	13.6 (9.2–17.9)	13.1 (10.3–15.9)
District of Columbia	11.8 (7.7–16.0)	16.9 (13.7–20.0)	7.2§ (2.3–12.0)	17.9 (13.2–22.5)	16.2 (12.6–19.8)	15.0 (11.3–18.8)	15.3 (8.3–22.3)	13.8 (10.4–17.2)	14.8 (8.7–20.9)	14.8 (9.8–19.8)	14.3 (11.3–17.4)
Florida	10.2§ (7.7–12.7)	14.5 (12.1–17.0)	10.8 (6.6–15.0)	13.8 (10.4–17.2)	12.1 (9.7–14.4)	14.5 (9.7–19.2)	15.7§ (11.6–19.8)	10.7 (9.1–12.4)	13.5 (9.8–17.2)	12.3 (9.5–15.1)	12.1 (9.8–14.4)
Georgia	9.6 (6.7–12.6)	12.7 (10.4–14.9)	9.7 (4.8–14.5)	12.8 (9.5–16.0)	10.6 (8.3–12.9)	11.1 (7.9–14.3)	19.6§ (12.6–26.5)	10.0 (8.1–12.0)	12.4 (8.9–15.9)	9.4 (6.7–12.1)	11.8 (9.3–14.3)
Hawaii	9.3§ (7.1–11.6)	14.4 (11.9–16.9)	11.3 (7.2–15.4)	13.0 (9.8–16.1)	11.3 (9.0–13.5)	7.6 (1.9–13.4)	16.7 (12.2–21.1)	13.1 (10.7–15.5)	14.7 (10.7–18.6)	11.6 (8.7–14.4)	11.5 (9.5–13.5)
Idaho	8.2§ (5.7–10.7)	12.3 (9.9–14.8)	8.1 (3.8–12.4)	10.3 (7.4–13.1)	11.4 (8.9–13.9)	—¶	11.8 (6.9–16.6)	10.0 (8.2–11.9)	11.6 (7.5–15.7)	8.5 (6.4–10.7)	11.2 (8.7–13.7)
Illinois	10.1§ (7.6–12.6)	15.5 (13.1–17.8)	10.8 (6.6–15.0)	12.5 (9.7–15.4)	14.1 (11.7–16.6)	13.6 (9.6–17.6)	16.3§ (12.7–20.0)	11.9 (10.0–13.7)	13.7 (10.1–17.4)	11.2 (8.7–13.7)	13.5 (11.3–15.7)
Indiana	11.1§ (8.7–13.6)	14.9 (12.7–17.1)	11.3 (7.3–15.4)	14.3 (11.3–17.2)	12.8 (10.7–14.9)	15.9 (11.4–20.5)	18.7§ (12.9–24.6)	12.3 (10.6–14.0)	13.2 (9.9–16.5)	10.8§ (8.6–12.9)	14.5 (12.2–16.7)
Iowa	7.7§ (5.6–9.7)	13.4 (11.4–15.5)	8.2 (4.5–12.0)	10.8 (8.4–13.2)	11.5 (9.5–13.6)	13.5 (7.0–20.1)	16.7§ (11.8–21.6)	10.1 (8.7–11.6)	9.5 (6.7–12.4)	9.3 (7.3–11.3)	11.4 (9.6–13.2)
Kansas	8.7§ (6.7–10.7)	13.1 (11.1–15.1)	8.5 (5.2–11.8)	12.1 (9.6–14.6)	11.2 (9.3–13.1)	11.9 (7.7–16.2)	13.2 (9.3–17.2)	10.5 (9.1–12.0)	9.6 (6.6–12.5)	9.1§ (7.3–11.0)	12.3 (10.4–14.2)
Kentucky	6.7§ (4.5–9.0)	10.8 (8.5–13.1)	8.1 (3.7–12.5)	8.8 (6.1–11.4)	9.1 (6.8–11.3)	14.2 (6.4–22.0)	17.7§ (8.3–27.1)	8.0 (6.5–9.5)	10.2 (6.2–14.2)	6.6 (4.4–8.9)	9.6 (7.6–11.7)
Louisiana	10.6 (7.5–13.8)	11.8 (9.5–14.0)	10.8 (5.4–16.2)	11.7 (8.5–14.9)	11.0 (8.7–13.4)	13.8§ (9.9–17.6)	18.2 (8.9–27.5)	9.2 (7.4–11.1)	12.7 (9.0–16.5)	9.7 (6.7–12.8)	11.5 (8.9–14.0)
Maine	9.3§ (6.7–11.9)	14.5 (12.0–17.0)	10.3 (4.8–15.7)	12.9 (9.8–16.1)	11.9 (9.8–14.0)	—¶	27.5 (9.9–45.1)	11.7 (10.0–13.5)	8.0§ (5.3–10.7)	9.3§ (6.9–11.6)	14.5 (12.1–17.0)
Maryland	10.8§ (8.4–13.1)	16.1 (13.9–18.3)	12.4 (8.1–16.7)	13.8 (11.1–16.5)	13.8 (11.7–16.0)	13.9 (11.1–16.7)	18.0§ (13.3–22.7)	12.8 (11.1–14.6)	14.3 (10.7–17.8)	11.9 (9.5–14.3)	14.1 (12.1–16.1)
Massachusetts	11.9 (9.2–14.7)	14.9 (12.5–17.3)	10.6 (6.2–15.0)	15.6 (12.2–18.9)	13.1 (10.7–15.5)	12.0 (7.0–17.0)	15.6 (11.2–20.0)	13.5 (11.5–15.4)	12.8 (8.8–16.7)	12.2 (9.4–15.0)	14.0 (11.8–16.2)

Michigan	8.0§ (5.8–10.1)	14.2 (12.0–16.5)	7.8§ (4.2–11.4)	11.5 (8.8–14.2)	12.2 (10.1–14.4)	13.7 (9.8–17.5)	11.0 (6.8–15.1)	10.8 (9.2–12.4)	11.1 (8.0–14.2)	9.2§ (7.2–11.2)	12.1 (10.1–14.1)
Minnesota	9.7§ (7.7–11.8)	15.6 (13.4–17.8)	9.4§ (5.9–12.8)	12.3 (9.8–14.8)	14.3 (12.1–16.6)	13.1 (8.7–17.6)	15.4 (11.1–19.7)	12.6 (11.0–14.1)	14.2 (10.7–17.6)	9.8§ (7.9–11.6)	13.6 (11.8–15.5)
Mississippi	9.2 (6.0–12.5)	11.7 (9.5–13.9)	12.0 (5.6–18.4)	11.2 (8.4–14.0)	9.3 (7.2–11.3)	12.3§ (9.1–15.6)	—¶	8.3 (6.5–10.0)	9.4 (6.6–12.3)	9.7 (7.0–12.5)	11.8 (8.9–14.8)
Missouri	6.6§ (4.5–8.7)	10.7 (8.7–12.8)	6.0 (2.7–9.4)	9.5 (7.0–12.1)	9.3 (7.3–11.3)	11.1 (7.2–14.9)	10.0 (4.1–15.9)	8.2 (6.7–9.6)	8.0 (5.1–10.8)	6.7§ (4.9–8.5)	10.1 (8.1–12.1)
Montana	8.1§ (5.9–10.2)	12.0 (9.8–14.2)	6.2§ (2.8–9.7)	10.9 (8.1–13.7)	11.0 (8.9–13.0)	—¶	12.8 (5.5–20.0)	9.7 (8.2–11.3)	8.7 (5.9–11.4)	8.3§ (6.3–10.4)	11.6 (9.5–13.7)
Nebraska	8.3§ (6.2–10.4)	13.1 (11.1–15.1)	9.2 (5.6–12.9)	10.6 (8.2–13.1)	11.4 (9.4–13.3)	13.5 (7.5–19.5)	14.9§ (11.4–18.4)	10.2 (8.8–11.7)	10.3 (7.7–12.8)	9.3 (7.3–11.2)	11.6 (9.7–13.5)
Nevada	7.6 (5.1–10.1)	9.7 (7.4–12.0)	5.5 (2.1–9.0)	9.8 (6.7–12.9)	8.9 (6.4–11.4)	8.4 (4.0–12.9)	11.7 (7.8–15.5)	8.1 (6.2–10.0)	9.9 (5.7–14.1)	8.2 (5.5–10.9)	8.5 (6.4–10.6)
New Hampshire	10.1§ (7.5–12.7)	15.7 (12.9–18.5)	10.8 (5.4–16.1)	11.7 (8.5–15.0)	14.4 (11.9–16.9)	—¶	—¶	12.8 (10.9–14.7)	8.5§ (5.3–11.7)	12.4 (9.5–15.2)	13.8 (11.4–16.2)
New Mexico	8.7§ (6.4–11.1)	14.3 (11.8–16.9)	7.6 (3.8–11.5)	13.5 (10.1–16.9)	11.9 (9.6–14.1)	12.6 (0.5–24.7)	13.5 (10.7–16.3)	8.9 (7.1–10.7)	13.8 (10.3–17.2)	10.0 (7.4–12.7)	11.6 (9.2–13.9)
New York	13.5§ (10.8–16.2)	17.1 (14.8–19.4)	12.8 (8.5–17.1)	15.6 (12.6–18.7)	16.3 (13.8–18.7)	15.9 (12.0–19.7)	18.6 (14.9–22.3)	14.1 (12.2–16.0)	17.7 (13.8–21.6)	14.9 (12.2–17.6)	14.8 (12.6–17.0)
North Carolina	9.3 (6.6–12.0)	12.7 (10.3–15.0)	10.2 (5.4–15.0)	12.5 (9.3–15.6)	10.2 (8.0–12.5)	10.1 (7.0–13.1)	13.4 (8.7–18.1)	10.8 (8.8–12.8)	8.1§ (5.3–10.9)	10.4 (7.3–13.5)	12.1 (9.9–14.4)
North Dakota	7.3§ (4.9–9.6)	12.8 (10.0–15.5)	8.4 (3.9–12.9)	9.5 (6.5–12.6)	10.9 (8.6–13.2)	—¶	16.5 (6.3–26.8)	9.3 (7.6–11.0)	11.5 (6.1–16.8)	7.0§ (4.9–9.2)	11.0 (8.7–13.3)
Ohio	7.6§ (5.4–9.7)	11.3 (9.4–13.3)	7.6 (3.6–11.6)	10.1 (7.6–12.6)	9.9 (8.1–11.7)	11.0 (7.2–14.7)	20.4§ (10.6–30.2)	8.7 (7.3–10.2)	7.6§ (5.3–10.0)	8.4 (6.4–10.5)	10.8 (8.8–12.8)
Oklahoma	7.0§ (4.8–9.2)	10.2 (8.2–12.2)	8.8 (4.6–13.0)	8.8 (6.3–11.3)	8.5 (6.6–10.4)	8.5 (4.0–12.9)	12.9 (7.6–18.2)	8.3 (6.8–9.9)	7.9 (5.0–10.8)	7.5 (5.4–9.6)	9.8 (7.7–11.9)
Oregon	10.1§ (7.8–12.5)	15.6 (13.1–18.2)	10.4 (6.2–14.6)	13.2 (10.3–16.2)	13.7 (11.1–16.3)	—¶	13.3 (9.2–17.4)	13.3 (11.4–15.2)	11.6 (7.9–15.2)	11.4 (8.9–13.9)	14.1 (11.8–16.4)
Pennsylvania	8.1§ (5.9–10.2)	13.1 (10.8–15.5)	8.3 (4.4–12.3)	12.1 (9.0–15.1)	10.5 (8.4–12.6)	13.7 (9.5–17.8)	15.5 (9.6–21.4)	9.8 (8.2–11.5)	10.4 (6.5–14.3)	8.5§ (6.3–10.6)	11.8 (9.7–13.8)
Rhode Island	12.8 (9.7–16.0)	16.7 (13.8–19.6)	10.9 (5.8–16.1)	16.7 (12.5–20.9)	15.2 (12.6–17.8)	15.5 (8.5–22.6)	16.7 (10.7–22.7)	14.1 (11.9–16.3)	14.6 (10.1–19.0)	12.6 (9.4–15.8)	15.8 (13.0–18.5)
South Carolina	10.3 (7.7–12.9)	13.5 (11.1–15.9)	10.2 (6.0–14.5)	13.5 (10.1–16.9)	11.6 (9.5–13.8)	15.1§ (11.5–18.7)	16.9 (6.6–27.2)	10.4 (8.7–12.1)	12.7 (9.1–16.3)	11.0 (8.2–13.8)	12.3 (10.0–14.5)

South Dakota	8.3 (5.1–11.4)	12.5 (9.5–15.4)	7.6 (2.2–13.0)	10.6 (6.9–14.2)	11.4 (8.5–14.3)	—¶	23.1 (7.5–38.8)	9.7 (7.7–11.8)	12.1 (5.9–18.4)	8.1 (5.2–11.0)	11.3 (8.5–14.1)
Tennessee	9.9 (7.1–12.7)	12.2 (10.0–14.4)	10.1 (5.3–14.9)	10.6 (7.7–13.5)	11.8 (9.5–14.2)	11.6 (7.8–15.4)	15.3 (6.1–24.5)	10.7 (8.8–12.6)	10.5 (7.4–13.5)	9.5 (6.9–12.1)	12.3 (9.7–14.8)
Texas	11.5§ (8.6–14.4)	16.2 (13.4–18.9)	13 (8.1–17.9)	14.5 (11.2–17.8)	13.6 (10.8–16.5)	12.8 (8.1–17.4)	17.5§ (13.7–21.4)	11.0 (9.1–12.9)	15.1 (10.8–19.4)	13.2 (9.7–16.7)	13.7 (11.2–16.2)
Utah	8.5§ (6.4–10.7)	14.6 (12.6–16.7)	8.0§ (4.6–11.3)	12.5 (10.0–15.0)	12.9 (10.7–15.1)	8.6 (1.6–15.6)	15.4§ (11.7–19.1)	10.9 (9.4–12.5)	10.2 (7.0–13.4)	10.1 (8.1–12.2)	12.5 (10.6–14.4)
Vermont	11.5§ (8.6–14.3)	19.1 (15.8–22.3)	10.8 (5.2–16.5)	17.0 (12.8–21.3)	16.0 (13.4–18.7)	—¶	13.9 (3.4–24.5)	15.4 (13.2–17.6)	11.1§ (7.0–15.3)	12.2§ (9.2–15.1)	18.0 (15.0–21.0)
Virginia	9.1§ (6.7–11.5)	15.2 (12.8–17.6)	11.2 (6.5–15.8)	13.0 (10.0–15.9)	12.1 (9.9–14.3)	14.0 (10.6–17.3)	16.6§ (11.6–21.7)	10.9 (9.2–12.6)	11.5 (8.2–14.8)	9.5§ (7.3–11.8)	13.6 (11.3–15.9)
Washington	10.1§ (7.9–12.3)	15.1 (12.9–17.3)	9.7 (6.0–13.3)	13.2 (10.5–16.0)	13.4 (11.2–15.6)	14.2 (8.1–20.4)	16.1 (12.3–19.9)	12.4 (10.8–14.1)	12.0 (8.9–15.2)	11.6 (9.4–13.9)	13.0 (11.1–14.9)
West Virginia	6.1§ (4.2–8.1)	10.6 (8.3–12.9)	8.5 (3.8–13.3)	8.7 (6.0–11.4)	8.0 (6.4–9.7)	13.4 (3.1–23.7)	—¶	8.1 (6.6–9.6)	8.3 (5.4–11.2)	6.9 (5.0–8.9)	9.7 (7.5–12.0)
Wisconsin	7.7§ (5.4–9.9)	15.5 (12.7–18.4)	7.9 (3.3–12.5)	12.2 (8.9–15.5)	12.7 (10.2–15.2)	7.9 (2.3–13.4)	13.5 (6.4–20.6)	11.4 (9.6–13.3)	10.0 (6.0–13.9)	10.8 (7.9–13.6)	12.4 (10.1–14.6)
Wyoming	7.2§ (4.7–9.6)	11.8 (9.4–14.2)	6.8 (2.4–11.2)	9.3 (6.3–12.4)	10.7 (8.4–13.0)	—¶	12.1 (6.4–17.8)	9.0 (7.3–10.7)	8.9 (5.0–12.7)	8.0 (5.7–10.3)	10.4 (8.1–12.7)

Abbreviations: IPR = income-to-poverty ratio; Ref = referent group.

* New Jersey data did not meet the minimum requirements for inclusion in the 2019 aggregate data set and were excluded.

† Black and White persons are non-Hispanic; Hispanic persons could be of any race. Other racial/ethnic groups were not reported because of small sample sizes but were included in overall estimates and estimates by other demographic characteristics.

§ $p<0.05$ for t-test comparing differences by demographic groups to the Ref.

¶ Sample sizes <50 were considered unstable and were not reported.

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TABLE 3. State-specific percentage of respondents meeting federal vegetable intake recommendations by sex, age, race/ethnicity, and

Income-to-poverty ratio — Behavioral Risk Factor Surveillance System, 49 states* and District of Columbia, 2019

Jurisdiction	% (95% CI)										
	Sex		Age group, yrs			Race/Ethnicity†			IPR		
	Men	Women (Ref)	18–30	31–50	≥51 (Ref)	Black	Hispanic	White (Ref)	<1.25	1.25–3.49	>3.49 (Ref)
National	**7.6§ (5.8–9.4)**	**12.4 (10.6–14.3)**	**7.1§ (5.0–9.3)**	**8.7 (6.5–10.8)**	**12.5 (10.3–14.6)**	**6.9§ (5.2–8.6)**	**11.0 (9.3–12.6)**	**10.1 (8.4–11.8)**	**6.8§ (5.0–8.5)**	**7.7§ (5.9–9.4)**	**12.2 (10.5–14.0)**
Alabama	5.6 (3.5–7.7)	7.7 (5.6–9.8)	5.3 (3.0–7.5)	6.2 (4.0–8.5)	7.6 (5.4–9.9)	5.0 (1.7–8.3)	10.5 (7.2–13.8)	7.1 (3.8–10.4)	4.4§ (2.0–6.8)	4.3§ (1.9–6.6)	9.4 (7.0–11.7)
Alaska	9.6 (6.1–13.0)	13.5 (10.0–16.9)	10.3 (6.4–14.2)	8.7 (4.8–12.6)	14.6 (10.7–18.4)	—¶	—¶	11.5 (6.9–16.1)	9.5 (6.2–12.8)	9.1 (5.8–12.4)	12.9 (9.6–16.2)
Arizona	10.4§ (7.2–13.5)	15.2 (12.1–18.3)	11.2 (8.0–14.3)	11.6 (8.5–14.8)	14.3 (11.2–17.4)	8.4 (3.9–13.0)	14.5 (9.9–19.0)	12.5 (7.9–17.1)	8.9§ (5.7–12.2)	10.9 (7.7–14.1)	15.2 (11.9–18.4)
Arkansas	9.0 (6.0–12.1)	12.6 (9.5–15.6)	10.6 (7.8–13.4)	9.5 (6.7–12.3)	12.0 (9.2–14.8)	11.2 (0–23.3)	12.1 (0–24.2)	10.4 (0–22.6)	9.6 (6.6–12.6)	9.5 (6.4–12.5)	12.7 (9.7–15.7)
California	7.9§ (5.3–10.5)	14.7 (12.1–17.3)	7.9§ (4.9–10.8)	9.7 (6.7–12.6)	14.7 (11.7–17.6)	6.7§ (3.9–9.5)	10.1 (7.3–12.9)	12.0 (9.1–14.8)	7.3§ (5.0–9.7)	9.7§ (7.3–12.0)	13.6 (11.3–16.0)
Colorado	7.9§ (5.2–10.6)	13.0 (10.3–15.7)	8.1§ (5.1–11.1)	8.7 (5.7–11.7)	13.2 (10.2–16.2)	6.7 (3.0–10.4)	9.5 (5.8–13.2)	10.7 (7.0–14.4)	6.0§ (3.7–8.3)	8.2§ (5.9–10.5)	12.1 (9.8–14.4)
Connecticut	11.0§ (8.0–13.9)	17.2 (14.2–20.1)	10.2§ (7.2–13.2)	11.7 (8.7–14.7)	17.1 (14.2–20.1)	9.7 (5.6–13.7)	13.4 (9.4–17.5)	14.8 (10.7–18.8)	9.7§ (7.1–12.3)	11.0§ (8.4–13.6)	16.2 (13.6–18.8)
Delaware	6.6§ (3.6–9.7)	11.3 (8.3–14.4)	4.2§ (1.0–7.5)	7.9 (4.6–11.2)	11.8 (8.5–15.1)	5.4 (0–12.3)	7.4 (0.6–14.3)	10.0 (3.1–16.9)	4.7§ (1.7–7.8)	5.4§ (2.3–8.5)	11.6 (8.5–14.7)
District of Columbia	10.5 (7.1–14.0)	14.9 (11.5–18.3)	10.6 (6.9–14.2)	12.4 (8.8–16.1)	15.1 (11.4–18.7)	7.9 (1.3–14.4)	12.2 (5.7–18.8)	15.9 (9.4–22.4)	4.7§ (1.4–8.0)	7.8§ (4.5–11.0)	15.8 (12.5–19.1)
Florida	8.1§ (5.3–10.9)	12.9 (10.1–15.7)	8.5 (5.5–11.6)	8.5 (5.4–11.6)	12.5 (9.5–15.6)	8.5 (4.6–12.4)	11.2 (7.3–15.1)	10.7 (6.8–14.6)	7.0§ (3.9–10.1)	7.9§ (4.8–11.0)	13.5 (10.4–16.6)
Georgia	6.4§ (3.7–9.1)	11.2 (8.5–13.9)	7.1 (4.1–10.1)	7.3 (4.4–10.3)	11.0 (8.0–14.0)	7.1 (2.3–11.9)	6.6 (1.7–11.4)	10.0 (5.1–14.8)	6.7 (3.8–9.6)	6.9 (4.0–9.8)	10.7 (7.8–13.7)
Hawaii	9.7§ (6.9–12.6)	14.6 (11.8–17.5)	8.7§ (5.8–11.6)	11.4 (8.5–14.3)	14.0 (11.1–16.9)	9.2 (7.2–11.2)	17.5§ (15.5–19.5)	13.4 (11.4–15.4)	11.2 (8.7–13.7)	9.4§ (6.9–12.0)	13.6 (11.1–16.2)
Idaho	7.4§ (4.5–10.4)	11.9 (9.0–14.9)	6.9§ (3.6–10.2)	7.4§ (4.1–10.7)	12.9 (9.6–16.3)	—¶	11.4 (7.6–15.2)	9.7 (5.9–13.5)	6.8§ (4.0–9.7)	7.4§ (4.6–10.3)	12.1 (9.2–15.0)
Illinois	6.2§ (3.8–8.7)	11.5 (9.0–14.0)	5.6§ (2.8–8.5)	7.7 (4.9–10.6)	11.4 (8.6–14.3)	5.5 (1.9–9.1)	8.6 (5.0–12.2)	9.5 (6.0–13.1)	6.3§ (3.9–8.7)	5.2§ (2.8–7.6)	11.4 (8.9–13.8)

Indiana	8.3§ (5.7–10.9)	12.8 (10.2–15.3)	8.1§ (5.3–10.9)	9.7 (6.9–12.5)	12.4 (9.6–15.1)	6.6 (0.7–12.5)	10.8 (4.9–16.7)	10.8 (4.9–16.7)	8.6§ (5.9–11.2)	7.7§ (5.1–10.4)	13.0 (10.3–15.6)
Iowa	5.0§ (2.7–7.4)	9.6 (7.2–11.9)	5.0§ (2.4–7.5)	5.5§ (3.0–8.1)	9.7 (7.2–12.3)	7.2 (3.7–10.7)	8.5 (4.9–12.0)	7.3 (3.8–10.8)	4.8§ (2.8–6.9)	5.4§ (3.4–7.5)	8.7 (6.7–10.8)
Kansas	7.1§ (4.5–9.6)	12.4 (9.9–15.0)	6.6§ (3.9–9.3)	8.5 (5.8–11.2)	12.3 (9.6–15.0)	5.8 (2.5–9.2)	9.2 (5.9–12.6)	10.0 (6.6–13.3)	6.1§ (3.7–8.4)	8.0§ (5.6–10.3)	11.7 (9.3–14.0)
Kentucky	4.0§ (1.6–6.3)	7.3 (5.0–9.6)	4.0 (1.4–6.6)	4.5 (1.9–7.1)	7.3 (4.7–9.9)	2.2 (0–5.9)	8.1 (4.4–11.8)	5.9 (2.2–9.6)	3.0§ (0.8–5.2)	3.6§ (1.4–5.9)	7.8 (5.5–10.0)
Louisiana	5.9 (3.7–8.1)	8.7 (6.5–10.9)	4.4§ (1.8–7.0)	6.1§ (3.5–8.7)	9.8 (7.2–12.4)	5.0 (0.8–9.3)	11.0 (6.8–15.3)	7.8 (3.6–12.1)	5.0§ (2.5–7.4)	5.3§ (2.9–7.8)	9.6 (7.2–12.1)
Maine	7.8§ (5.1–10.5)	14.0 (11.2–16.7)	8.3§ (5.6–11.1)	9.0§ (6.2–11.7)	13.0 (10.3–15.8)	—¶	18.6§ (14.6–22.6)	10.9 (6.8–14.9)	6.6§ (3.6–9.6)	7.3§ (4.3–10.3)	14.2 (11.2–17.2)
Maryland	6.6§ (4.1–9.2)	12.9 (10.3–15.4)	6.5§ (3.8–9.3)	7.3§ (4.5–10.0)	13.2 (10.5–15.9)	7.5 (3.9–11.1)	12.7 (9.0–16.3)	10.1 (6.5–13.8)	6.2§ (4.0–8.4)	6.8§ (4.6–9.0)	11.8 (9.6–14.0)
Massachusetts	8.1§ (5.3–10.8)	12.7 (10.0–15.4)	6.2§ (3.1–9.2)	8.6§ (5.6–11.6)	13.7 (10.7–16.7)	6.0§ (3.1–8.9)	8.9 (5.9–11.8)	11.1 (8.2–14.0)	5.6§ (3.2–8.0)	6.9§ (4.5–9.3)	12.5 (10.1–14.9)
Michigan	4.9§ (2.5–7.2)	9.6 (7.3–12.0)	4.8§ (2.3–7.3)	5.4§ (2.9–7.9)	9.5 (7.0–12.0)	4.8 (2.1–7.6)	12.7§ (9.9–15.4)	7.2 (4.5–10.0)	4.5§ (2.4–6.7)	5.0§ (2.9–7.2)	9.1 (7.0–11.3)
Minnesota	6.1§ (3.7–8.6)	11.5 (9.1–13.9)	5.7§ (3.0–8.4)	6.8§ (4.1–9.5)	11.7 (9.0–14.4)	5.5 (2.1–9.0)	8.6 (5.1–12.1)	8.8 (5.3–12.3)	6.7§ (4.7–8.8)	5.9§ (3.8–7.9)	10.3 (8.2–12.4)
Mississippi	6.3 (4.0–8.6)	8.9 (6.6–11.2)	4.9§ (2.2–7.5)	7.2 (4.5–9.8)	9.5 (6.8–12.1)	5.8 (1.4–10.2)	—¶	8.9 (4.4–13.3)	3.5§ (0.7–6.2)	6.6§ (3.9–9.4)	10.7 (8.0–13.5)
Missouri	5.5§ (3.0–8.0)	9.3 (6.8–11.8)	4.9§ (2.2–7.6)	6.4 (3.7–9.1)	9.4 (6.6–12.1)	4.5 (0–9.5)	9.2 (4.3–14.2)	7.6 (2.7–12.6)	4.2§ (1.7–6.8)	5.7§ (3.1–8.2)	9.3 (6.8–11.8)
Montana	8.5 (6.0–11.1)	10.6 (8.1–13.2)	7.7 (5.1–10.3)	8.9 (6.3–11.5)	10.7 (8.1–13.4)	—¶	16.6§ (13.4–19.9)	9.5 (6.2–12.7)	7.2§ (4.7–9.8)	7.2§ (4.6–9.7)	12.0 (9.4–14.5)
Nebraska	5.8§ (3.4–8.1)	10.2 (7.9–12.6)	5.9§ (3.4–8.5)	6.2§ (3.6–8.8)	10.3 (7.7–12.9)	5.8 (2.1–9.5)	7.1 (3.4–10.8)	8.1 (4.4–11.8)	5.1§ (2.8–7.4)	5.3§ (3.0–7.6)	10.3 (8.0–12.7)
Nevada	5.6§ (2.8–8.3)	9.5 (6.7–12.2)	5.8 (2.9–8.8)	5.9 (3.0–8.9)	9.4 (6.4–12.3)	5.4§ (3.2–7.5)	6.4 (4.3–8.6)	9.0 (6.8–11.1)	4.2§ (1.5–6.8)	5.5§ (2.9–8.1)	9.5 (6.8–12.1)
New Hampshire	9.6§ (6.4–12.9)	15.1 (11.8–18.3)	10.3§ (7.1–13.5)	9.2§ (6.1–12.4)	15.0 (11.8–18.2)	—¶	—¶	12.0 (7.1–17.0)	6.5§ (3.5–9.4)	8.4§ (5.4–11.3)	14.9 (12.0–17.8)
New Mexico	6.8§ (4.1–9.6)	11.5 (8.7–14.3)	4.8§ (1.9–7.6)	8.6 (5.8–11.5)	11.6 (8.7–14.5)	4.3 (0.1–8.4)	9.7 (5.6–13.9)	8.4 (4.2–12.6)	8.1 (5.3–10.9)	7.2§ (4.4–10.0)	11.3 (8.4–14.1)
New York	10.9§	17.4	8.9§ (5.9	13.3 (10.4	17.3 (14.3	10.4	13.4 (8.8	14.3	11.2§	12.8	15.8

	(8.1–13.7)	(14.6–20.2)	11.8)	16.3)	20.2)	(5.8–15.0)	18.0)	(9.7–18.9)	(8.7–13.7)	(10.3–15.4)	(13.2–18.3)
North Carolina	7.6 (4.7–10.5)	11.4 (8.6–14.3)	7.4§ (4.3–10.6)	7.6§ (4.5–10.8)	12.1 (9.0–15.2)	8.0 (4.5–11.6)	7.1 (3.5–10.6)	10.3 (6.7–13.9)	4.8§ (2.0–7.5)	7.0§ (4.2–9.8)	12.2 (9.5–15.0)
North Dakota	5.4§ (2.6–8.2)	9.5 (6.7–12.4)	6.0 (3.3–8.7)	5.5§ (2.8–8.1)	9.6 (6.9–12.3)	—¶	8.6 (3.6–13.7)	6.9 (1.9–12.0)	5.5§ (3.1–7.9)	4.2§ (1.8–6.6)	9.2 (6.8–11.6)
Ohio	5.7§ (3.5–8.0)	9.1 (6.8–11.3)	4.8§ (2.4–7.2)	6.6 (4.2–9.0)	9.2 (6.8–11.6)	5.6 (2.2–9.0)	13.0§ (9.6–16.4)	7.3 (3.9–10.7)	4.5§ (2.1–6.8)	5.4§ (3.1–7.7)	9.7 (7.3–12.0)
Oklahoma	5.7 (3.5–8.0)	7.9 (5.6–10.1)	4.6§ (2.0–7.2)	6.1 (3.5–8.7)	8.5 (5.9–11.1)	5.4 (2.5–8.3)	7.4 (4.5–10.3)	7.0 (4.1–9.9)	3.4§ (0.8–6.0)	4.7§ (2.2–7.3)	9.6 (7.0–12.1)
Oregon	9.4§ (6.5–12.3)	14.9 (12.0–17.9)	9.1§ (6.0–12.2)	10.4§ (7.3–13.5)	14.8 (11.8–17.9)	—¶	8.9 (3.8–13.9)	12.3 (7.2–17.3)	7.7§ (5.1–10.4)	10.0§ (7.4–12.7)	14.4 (11.8–17.1)
Pennsylvania	5.8§ (3.2–8.4)	10.9 (8.3–13.6)	5.4§ (2.7–8.1)	7.1 (4.4–9.7)	10.5 (7.8–13.1)	5.7 (2.3–9.2)	10.6 (7.1–14.0)	8.5 (5.0–11.9)	6.5§ (4.2–8.8)	4.7§ (2.4–7.0)	10.7 (8.4–13.0)
Rhode Island	9.3§ (5.7–13.0)	17.4 (13.7–21.0)	9.9§ (6.9–13.0)	12.0 (8.9–15.1)	15.8 (12.7–18.9)	8.6 (1.4–15.8)	8.7 (1.4–15.9)	13.9 (6.7–21.2)	8.2§ (5.3–11.0)	12.6 (9.7–15.5)	14.9 (12.0–17.8)
South Carolina	8.2§ (5.6–10.8)	12.0 (9.4–14.7)	8.5 (5.8–11.2)	8.3§ (5.5–11.0)	12.3 (9.6–15.0)	7.6 (2.3–13.0)	13.6 (8.2–18.9)	10.6 (5.2–15.9)	6.2§ (3.6–8.8)	7.6§ (5.0–10.3)	12.9 (10.2–15.5)
South Dakota	5.9 (2.9–8.8)	9.1 (6.2–12.1)	4.6§ (1.4–7.9)	6.5 (3.2–9.8)	9.6 (6.3–12.8)	—¶	14.5 (8.9–20.1)	7.0 (1.4–12.6)	7.2 (4.4–9.9)	4.5§ (1.7–7.2)	9.3 (6.5–12.0)
Tennessee	7.6 (4.9–10.2)	10.8 (8.2–13.5)	6.9§ (4.0–9.8)	7.6 (4.7–10.5)	11.4 (8.5–14.3)	5.8 (0.1–11.5)	11.5 (5.8–17.2)	9.6 (3.9–15.3)	6.7§ (3.9–9.5)	6.8§ (4.0–9.5)	11.7 (8.9–14.5)
Texas	10.2 (7.5–12.9)	13.6 (11.0–16.3)	8.8§ (5.2–12.5)	11.3 (7.7–14.9)	14.4 (10.8–18.0)	7.6 (2.8–12.4)	12.7 (7.9–17.5)	12.7 (7.9–17.5)	7.8§ (4.9–10.7)	10.6 (7.7–13.5)	14.1 (11.2–17.0)
Utah	6.3§ (4.0–8.5)	10.4 (8.1–12.7)	5.1§ (2.2–8.1)	7.3§ (4.4–10.2)	11.8 (8.9–14.8)	5.2 (2.1–8.4)	9.0 (5.9–12.2)	8.2 (5.1–11.4)	5.4§ (3.4–7.4)	5.9§ (3.9–8.0)	10.0 (8.0–12.1)
Vermont	10.8§ (7.1–14.5)	21.0 (17.3–24.7)	13.3§ (10.1–16.6)	13.7§ (10.4–17.0)	18.5 (15.2–21.7)	—¶	7.9 (0.6–15.2)	16.2 (8.9–23.5)	11.6§ (8.3–14.8)	12.9§ (9.6–16.2)	18.6 (15.3–21.9)
Virginia	7.1§ (4.4–9.7)	12.1 (9.5–14.8)	5.9§ (2.9–8.9)	8.0§ (5.0–11.0)	12.7 (9.7–15.7)	6.9 (3.8–10.0)	10.5 (7.4–13.6)	10.4 (7.3–13.5)	4.3§ (1.9–6.8)	6.6§ (4.1–9.0)	12.2 (9.8–14.7)
Washington	9.2§ (6.5–11.9)	14.6 (11.9–17.3)	6.7§ (3.8–9.7)	11.1 (8.1–14.0)	14.9 (11.9–17.9)	10.3 (7.3–13.2)	13.5 (10.5–16.4)	11.9 (8.9–14.8)	8.9§ (6.6–11.2)	9.4§ (7.1–11.7)	13.3 (11.0–15.6)
West Virginia	4.9§ (2.5–7.2)	9.0 (6.7–11.4)	3.5§ (1.3–5.7)	4.7§ (2.4–6.9)	7.5 (5.3–9.7)	4.9 (2.0–7.9)	—¶	7.0 (4.0–10.0)	4.8§ (2.2–7.4)	5.1§ (2.5–7.6)	9.7 (7.2–12.3)
Wisconsin	5.0§ (2.5–	10.1 (7.6–12.7)	5.7§ (3.1–8.2)	7.2 (4.7–9.8)	9.1 (6.6–11.7)	5.5 (1.1–	8.4 (4.0–12.8)	7.6 (3.2–12.0)	6.0 (3.6–	5.0§ (2.6–7.5)	9.3 (6.8–11.7)

Wyoming	5.3§ (2.1–8.5)	11.8 (8.6–14.9)	7.8§ (4.9–10.7)	7.6§ (4.7–10.5)	11.0 (8.1–13.9)	—¶	9.0 (3.9–14.1)	8.4 (3.3–13.5)	4.1§ (1.3–7.0)	6.1§ (3.2–8.9)	10.6 (7.7–13.4)

Abbreviations: IPR = income-to-poverty ratio; Ref = referent group.

* New Jersey data did not meet the minimum requirements for inclusion in the 2019 aggregate data set and were excluded.

† Black and White persons are non-Hispanic; Hispanic persons could be of any race. Other racial/ethnic group not reported because of small sample sizes but were included in overall estimates and estimates by other demographic characteristics.

§ $p<0.05$ for t-test comparing differences by demographic groups to the Ref.

¶ Sample sizes <50 were considered unstable and were not reported.

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Effect of the food production chain from farm practices to vegetable processing on outbreak incidence

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Abstract

The popularity in the consumption of fresh and fresh-cut vegetables continues to increase globally. Fresh vegetables are an integral part of a healthy diet, providing vitamins, minerals, antioxidants and other health-promoting compounds. The diversity of fresh vegetables and packaging formats (spring mix in clamshell container, bagged heads of lettuce) support increased consumption. Unfortunately, vegetable production and processing practices are not sufficient to ensure complete microbial safety. This review highlights a few specific areas that require greater attention and research. Selected outbreaks are presented to emphasize the need for science-based 'best practices'. Laboratory and field studies have focused on inactivation of pathogens associated with manure in liquid, slurry or solid forms. As production practices change, other forms and types of soil amendments are being used more prevalently. Information regarding the microbial safety of fish emulsion and pellet form of manure is limited. The topic of global climate change is controversial, but the potential effect on agriculture cannot be ignored. Changes in temperature, precipitation, humidity and wind can impact crops and the microorganisms that are associated with production environments. Climate change could potentially enhance the ability of pathogens to survive and persist in soil, water and crops, increasing human health risks. Limited research has focused on the prevalence and behaviour of viruses in pre and post-harvest environments and on vegetable commodities. Globally, viruses are a major cause of foodborne illnesses, but are seldom tested for in soil, soil amendments, manure and crops. Greater attention must also be given to the improvement in the microbial quality of seeds used in sprout production. Human pathogens associated with seeds can result in contamination of sprouts intended for human consumption, even when all appropriate 'best practices' are used by sprout growers.

Introduction

Consumption of fresh vegetables has dramatically increased globally with the advent of new technologies. The wide selection of products from bagged salads to fresh-cut fruits now makes consumption of fresh fruits and vegetables by consumers affordable, easy and a tasty adventure. In 1998, a typical grocery store in the United States carried 345 produce items compared with just 173 in 1987 (Dimitri *et al*.,). Consumption of fresh produce is part of a healthy diet, but pathogen contamination of fresh produce has resulted in serious public health consequences. Outbreaks in recent years have been linked to tomatoes, spinach, lettuce and seed sprouts. There is no exclusion when it comes to fresh vegetables that can be contaminated by foodborne pathogens.

Globally, the number of outbreaks and cases of foodborne illness associated with the consumption of contaminated produce continues to escalate (Critzer and Doyle, ; Teplitski *et al*., ; Hoelzer *et al*.,). Fresh and fresh-cut vegetables are not processed in ways that will effectively eliminate human pathogens. The types of human pathogens that can be associated with produce are varied and may include bacteria (*Escherichia coli* O104:H4, *Listeria monocytogenes*, *Salmonella*), viruses (hepatitis A virus, norovirus) and parasites (*Cryptosporidium parvum*, *Cyclospora cayetanensis*). The sources of those pathogens and other microbes traverses the continuum from farm to plate and includes contaminated agricultural water, soil amendments, contaminated harvesting equipment, field workers, processing plants and retail handling.

The improper handling prior to and during processing can compromise the safety of a product. Although, the growth of pathogens including *L. monocytogenes*, *E. coli* O157:H7 and *Salmonella* will be limited or prevented by cooling crops to 4°C or less, their persistence in crop produce has been reported. The fate of *Salmonella* and *E. coli* O157:H7 on cilantro, basil, chive and other fresh herbs during refrigerated (4°C) storage was investigated (Hsu *et al*.,). Initial populations of both pathogens decreased rapidly, but the pathogens

survived for at least 24 days of storage. Others have reported the ability of *E. coli* O157:H7 to grow on damaged spinach leaves held at 8°C, generally considered the minimum temperature for growth of that pathogen (Khalil and Frank,). Developed and developing countries face challenges in developing and implementing measures that will improve the microbial safety of vegetables.

Regulations

Establishment of new guidelines and regulations for vegetable processing and handling should bring about improvements in the microbial safety of fresh vegetables. Globally, considerable attention has been focused on the safety of fresh and fresh-cut fruits. In the United States, the Food Safety Modernization Act (FSMA) now requires the US Food and Drug Administration (USFDA) to establish science-based minimal standards for the safe production and harvesting of those types of raw fruits and vegetables (e.g. lettuce, tomatoes and cantaloupes) for which standards are necessary to minimize the risk to human health, including death. The 'standards' will focus on microbiological hazards because illnesses attributed to chemical and physical hazards associated with the consumption of fresh and fresh-cut produce are rare (Food and Drug Administration,).

Consumers in developed countries desire products year-round, regardless of the growing season of those commodities. In order to fulfil those demands, companies source products from throughout the world. The production and processing practices in developing countries may not achieve appropriate safety levels placing consumers within that country and throughout the world at risk of illness through export of those commodities. In the United States, under FSMA, foreign suppliers are required to meet the same standards as domestic producers. This also includes foreign farms that meet the criteria of 'covered farms' that grow, harvest, pack or hold covered produce for import into the United States. Meeting the standards outlined will likely be costly and may limit the ability of some developing countries to comply, impeding exports of fresh fruits and vegetables to the United States. Similar to the United States, the European Union and other developed countries have elaborate standards and guidelines to enhance the safety of food produced domestically and imported food (Jaud *et al*.,). Human health problems arise when best practices are not used throughout the farm-to-plate continuum, regardless of where the food is produced.

Vegetable contamination along the food production chain

Vegetables can become contaminated with human pathogens at multiple points along the farm-to-table production/supply chain (Matthews,). The microbial safety of produce is a concern; in the United States, between 1996 and 2010, approximately 23% of total outbreaks of foodborne illness were produce related. Bacterial agents (e.g. *Salmonella, L. monocytogenes* and *E. coli* O157:H7) were associated with 86.5% of outbreaks followed by parasites (11.6%) and viruses (1.9%). Outbreaks were associated with a variety of domestic and imported vegetables; however, the majority of the outbreaks were linked with sprouts and leafy greens. Using standard vegetable-processing practices, it is not possible to completely inactivate human pathogens that may contaminate a commodity. Because vegetables are often consumed raw and minimally processed, the potential human health risks increase (Beuchat, ; Olaimat and Holley,). Clear strategies must be developed to identify sources of pathogens, and steps must be done to prevent contamination of vegetables throughout the production chain (Doyle and Erickson,). Sources of vegetable contamination will be partitioned to pre-harvest (focused on soil amendments, irrigation water, climate change and geographical location) and post-harvest (harvesting, handling and processing). Current knowledge to future strategies to improve the microbial safety of fresh and fresh-cut vegetables will be discussed.

Pre-harvest

Potential sources of pathogen contamination in pre-harvest include soil, wildlife faeces, soil amendments, agricultural water, reconstituted fungicide and insecticides, dust, wild or domestic animals, field workers, and harvesting equipment (Beuchat, ; Matthews,). Pathogenic bacteria mainly associated with produce outbreaks such as *E. coli* O157:H7, *Salmonella* and *L. monocytogenes* are known to be shed into the environment through animal hosts (Ivanek *et al*., ; Franz and van Bruggen,). Research has demonstrated the long-term survival of enteric pathogens in agricultural waters, soil amendments and soil (Franz *et al*., ; Scott

et al., ; Franz and van Bruggen,). Studies are now being conducted under field conditions, rather than in a greenhouse, potentially providing a better understanding of how enteric pathogens behave in a production environment (Matthews,).

Manure and soil amendments

Research demonstrates that animal manure used as soil amendments may contain viruses, parasites or bacteria that represent a human health concern. The faeces of wild life must also be considered. Application of manure as a soil amendment would be broadcast as a solid, semi-solid or liquid throughout the field, whereas faeces from wildlife would be introduced at distinct locations. In a large outbreak of *E. coli* O157:H7 associated with spinach in the United States, environmental investigation revealed through molecular typing that isolates from faeces of feral swine matched the outbreak strain (Jay *et al*.,). Methods to prevent wildlife intrusion of a field can be costly and of limited effect. Fencing off a production field is costly, often not practical, and if not done correctly, wild pigs and other animals can burrow under the fence. Field workers can monitor field intrusion through detection of animal tracks and disruption of crops. Practical cost appropriate methods are needed to mitigate this source of crop contamination.

Pellet forms of manure (e.g. chicken manure pellets) are widely used as a soil amendment. Pelletizing the manure reduces offensive odour and facilitates storage and transport (Chen and Jiang,). Not surprisingly, chicken litter can harbour a diverse range of pathogens (*Campylobacter*, *Clostridium*, *Salmonella* and *Staphylococcus*), and if not properly treated prior to field application, can result in crop contamination (Ngodigha and Owen, ; Silva *et al*., ; Chinivasagam *et al*.,). During manufacture of manure pellets, a thermal process is performed; however, few studies have been conducted to validate whether the process inactivates microbes of human health concern. Process validation studies would facilitate development of standardized practices that would increase the microbial safety of pellet forms of manure.

The use of fish emulsion applied to agricultural production fields as a means to increase soil nitrogen has increased in popularity. There are a number of methods to prepare the fish emulsion some of which include a thermal process. Similar to the concern with pelletized manure, research to validate the inactivation of human pathogens (bacteria, viruses) by the process is essential.

Irrigation water

Irrigation is considered as one of the most important transmission modes of enteric human pathogens to vegetable crops (Park *et al*.,). Monitoring of presence or absence of human pathogens or testing of indicator microorganisms is done to determine the satisfactoriness of agricultural waters applied to crops (Gerba,). In developing countries, untreated sewage water is often used for irrigation of vegetables. The sampling of ready-to-eat (RTE) salads composed of raw vegetables in Pachuca-City, Hidalgo, Mexico, where most locally consumed vegetables are irrigated with untreated sewage water, found faecal coliforms (99%), *E. coli* (85%) and diarrheagenic *E. coli* (7%) associated with the 130 salad samples tested (Castro-Rosas *et al*.,). The World Health Organization recommends that the level of faecal coliforms in wastewater be used for produce irrigation not exceeding 1000 colony-forming units (cfu) or most probable number (MPN) MPN 100 ml^{-1} (World Health Organization/Food and Agriculture Organization,). The results underscore that the use of untreated wastewater in crop production results in poor microbiological quality of RTE salads, which can present a human health risk.

River water used for irrigation can also harbour microorganism that cause human illness. Counts of faecal coliforms and *E. coli* in river water used in vegetable irrigation in South Africa were up to 1.6×10^6 cfu 100 ml^{-1} and 3.5×10^5 cfu 100 ml^{-1} respectively (Gemmell and Schmidt,). A study of pond and tidal creek water in Australia found water samples positive for genes suggesting the presence of *E. coli* O157, *Campylobcter jejuni* and *Salmonella* (Ahmed *et al*.,). *Salmonella* were isolated from 57 of 72 (79.2%) surface water samples collected in Georgia, USA (Haley *et al*.,). In Canada, *E. coli* O157:H7 and *Salmonella* were detected in samples of river and canal water (Gannon *et al*.,). The strain of *Salmonella* Newport linked to an outbreak of tomato-associated salmonellosis was isolated from pond water used for irrigating tomatoes linked to the outbreak (Greene *et al*.,). Regardless of whether vegetable production is occurring in a developed or

developing country, water used for irrigation must be of suitable microbiological quality. In-line systems to treat irrigation water immediately prior to field application are available. In-line or similar methods to treat irrigation water that are cost-effective and suitable for use in remote locations are needed.

The risk of microbiological contamination of the edible portion of a crop is directly impacted by the method of irrigation: surface furrow, subsurface drip or overhead sprinkler. Research confirms that sprinkle irrigation compared with furrow and subsurface drip increased the risk of crop contamination (Fonseca *et al*., reviewed by Matthews,). Greenhouse and laboratory studies showed that *E. coli* O157:H7 persisted for 20 days on lettuce leaves that were spray irrigated and that repeated irrigation with contaminated water increased level of the pathogen on the edible portion of the lettuce (Solomon *et al*., ;). Van der Linden and colleagues () demonstrated that overhead sprinkle irrigation was associated with increased enteric pathogen contamination of butterhead lettuce. Repeated spray irrigation with a low dose (approximately 3.5 log CFU ml^{-1}) of *E. coli* O157:H7 resulted in internalization of the pathogen in spinach and parsley leaves, but not in lettuce leaves (Erickson *et al*.,). The pathogen persisted for 2 days post-exposure, suggesting that irrigation immediately prior to harvest presents an increased microbiological risk. The establishment of appropriate guidelines for pre-harvest application of irrigation water is difficult, considering the spectrum of results from research studies addressing the issue (Matthews,).

Climate change and geographical location

The issue of climate change associated with food safety has received increased attention (Miraglia *et al*., ; Lake *et al*.,). Fresh vegetables are cultivated and harvested under diverse climatic and geographical conditions. When discussing microbial safety of vegetables environmental conditions influenced through climatic change or geographic region should be considered because such changes can influence genetic, phenotypic and physiological characteristics of microbes that typically contaminate vegetables in the field (Liu *et al*.,). Changes in annual temperature and precipitation patterns have been observed worldwide (Meehl *et al*.,). The global average temperature has gradually increased since the earliest observations (Camuffo and Bertolin,). Based on climate-modelling studies, the amount of precipitation is projected to increase in some areas (e.g. tropical and high latitude regions) and decrease in other areas (e.g. Central and Southern Europe, Central North America, Central America and Mexico and Southern Africa), which implies that the characteristics of climate change may vary geographically (Intergovenmental Panel on Climate Change (IPCC),).

The transfer, prevalence and survival of enteric pathogens in soil amendments, soil, agricultural water and on crops may individually or collectively be influenced by climate change or geographic location (Liu *et al*.,). The survival of *E. coli* O157 and *Salmonella* in manure and soil decreased as ambient temperature increased (Mukherjee *et al*., ; Semenov *et al*., ; Danyluk *et al*.,). Persistence of *E. coli* O157:H7 and *S.* Typhimurium in manure and manure-amended soil under tropical climatic conditions was shown to be shorter compared with survival time previously observed in temperate regions (Ongeng *et al*.,). Survival of *E. coli* O157:H7 in leafy green producing soils in California differed from those in Arizona, which could be attributed to different soil characteristics (salinity, assimilable organic carbon and total nitrogen) within the geographic locations (Ma *et al*.,). Increased intensity of precipitation may enhance survival of pathogens in soil and manure by increasing moisture content (Warriner *et al*.,). Greater intensity of rain events may lead to vegetable contamination with pathogens by splashing manure and soil particles onto edible portions of the crop or by broadcasting pathogens throughout the field during flooding events (Cevallos-Cevallos *et al*.,). Internalization of *S.* Typhimurium by lettuce was shown to be facilitated under experimental conditions of extreme weather such as storms (heavy rainfall) and drought (Ge *et al*.,). Seasonality has been demonstrated to affect microbial populations and survival of pathogens associated with vegetables (Ailes *et al*., ; Oliveira *et al*.,) and abundance of pathogens or faecal coliforms in irrigation water sources (Haley *et al*., ; Abakpa *et al*.,). Collectively, these studies indicate that a wide range of climatic and geographic variables must be considered when developing strategies to enhance the microbial safety of crops in the field. A ‘one-size fits all’ approach will not work.

Viruses and the pre-harvest environment

The fate of viruses in water, manure, soil and pre-harvest contamination of crops is largely unknown. Research addressing the issue is grossly lacking as highlighted in a comprehensive review on sources of viruses and viral contamination of crops (Wei and Kniel,). Viruses being shed from human and animal faeces may contaminate soils, water and manure. Viruses associated with leakage from septic tanks, run-off from animal lagoons, or that survive manure treatment may contaminate vegetable production fields and consequently crops. Manure management systems provide liquid, slurry, semi-solid or solid manure that can be applied to agricultural land. Unfortunately, these systems do not completely eliminate viruses (Wei and Kniel,). Because the infectious dose of some viruses is 10–100 particles, pre-harvest contamination of vegetable crops with viruses presents a significant human health concern.

Harvesting/post-harvest practices and contamination

Harvesting practices and handling prior to processing

Cross-contamination of vegetables can occur during harvest through contact with harvesting equipments, knives, workers' hands or gloves and containers such as bins, boxes and buckets (Matthews,). Field trimming and coring of lettuce during harvest has been widely adopted because it reduces costs of shipping and waste disposal. However, the practice of core removal can bring tissue damage and additional human handling, which increases microbial infiltration through the cut edges, microbial growth and opportunities of lettuce contamination (Food and Agriculture Organization/World Health Organization,). Taormina and colleagues () reported that coring knives can transfer *E. coli* O157:H7 to lettuce heads after contact with pathogen-contaminated soil. Coring knives can also be contaminated with enteric pathogens through contact with workers' gloves. Machine harvesting has been increasingly used, but it can increase the chance for surface contact exposure (Fallon *et al*.,). Lawn mower-type machines commercially used in harvesting baby spinach can introduce microbial hazards, including foodborne pathogens, to the raw product by contact with contaminated soil or manure (Buchholz *et al*.,). Accordingly, harvesting tools and machines should be kept clean through periodic washing and sanitizing to prevent the risk of cross-contamination.

Pathogens that may be present on hands can be transferred to vegetables or food contact surfaces (Todd *et al*., ;). Bidirectional transfer of *S.* Typhimurium between bare/gloved hands and green bell pepper was demonstrated (Jimenez *et al*.,). The study showed that an effective log reduction of *S.* Typhimurium on hands could be achieved using a combination of hand washing and application of an alcohol-based hand gel. To minimize the risk of cross-contamination by hands or gloves, appropriate hand-washing and bathroom facilities should be provided at work sites, without creating a potential hazard for contamination of nearby crops.

Harvested vegetables can be contaminated as the result of improper handling during storage and transportation. Baby greens are harvested into bins, and before transport to the processing facility, the bins are often directly placed onto soil and stacked on the top of other bins, which can permit transfer of contaminants during stacking (Matthews,). A change in practices is required, emphasizing that bins should not be placed on the ground nor stacked after filled.

Rapid cooling of vegetables after harvest is a significant factor for quality maintenance. Cooling vegetables to refrigeration temperature (4°C or less) will decrease not only the rate of respiration and the ripening process, but also the growth of enteric pathogens (Buchholz *et al*., ; Matthews,). Several methods of pre-cooling are available and are used depending on commodity. Methods include room cooling (e.g. tomatoes), forced air cooling (e.g. tomatoes and peppers), hydrocooling (e.g. leafy greens, carrots, asparagus) and vacuum cooling (e.g. leafy greens, pepper) (US Department of Agriculture/Agricultural Research Service,). Hydrocooling and vacuum cooling are commonly used in rapid cooling for leafy greens by showering the product with cold water and surface water evaporation respectively (Buchholz *et al*.,). Those cooling processes may lead to commodity cross-contamination or internalization of pathogens. Li and colleagues ()

reported that the vacuum cooling facilitates infiltration of *E. coli* O157:H7 into lettuce. Refrigerated storage limits prevent the growth of some foodborne pathogens; however, most are capable of survival during cold storage (Koseki and Isobe, ; Hsu *et al*., ; Khalil and Frank,).

Processing (cutting, washing/sanitizing and packaging/storing)

Processing operations provide many opportunities for cross-contamination because cutting, washing and sanitizing, packaging, and storing are involved. Cutting of vegetables releases exudates-containing nutrients that can aid in the growth of enteric pathogens (Lynch *et al*., ; Matthews,). Tissue damage associated with cutting and shredding of lettuce resulted in an increase in the population of *E. coli* O157:H7, likely related to release of latex from the cut surface (Brandl,). Investigators have evaluated the persistence or transfer of viruses in food processing and preparation environments (Fallahi and Mattison, ; Stals *et al*., ; Wang *et al*.,). Norovirus and hepatitis A virus were transferred from contaminated produce (e.g. tomato, cucumber and carrot) to utensils (knives and graters) after cutting and grating (Wang *et al*.,).

Washing of vegetables removes soil and other debris and has the added benefit of reducing microbial load (Gil *et al*.,). Wash water of unsatisfactory microbial quality or not treated with a sanitizer can serve as a vehicle for dispersion of microorganisms (Holvoet *et al*.,). Washing was the primary vehicle for the homogenous spread of *Salmonella* Enteritidis to fresh-cut vegetables during processing (Pérez-Rodríguez *et al*.,). Chlorine-based sanitizers are widely used in the fresh produce industry because of their relatively low cost. The potential impact of chlorine-based sanitizers on human health and the release of hazardous by-products into the environment have hastened the research for alternative, safe and cost-effective sanitizers. Optimization of equipment design and processing practices for washing and sanitizing are essential for increasing microbial reduction and ensuring microbial safety of fresh vegetables (Matthews,).

Unfavourable conditions during packaging and storage contribute to the growth and survival of spoilage and pathogenic microorganisms on vegetables (Capozzi *et al*., ; Caleb *et al*.,). The growth of pathogens (*E. coli* O157:H7, *Salmonella* and *L. monocytogenes*) increased on shredded lettuce stored at abuse temperature (25°C) under modified atmosphere packaging conditions (Oliveira *et al*.,). The populations of *Salmonella* and *L. monocytogenes* increased on RTE vegetables (e.g. arugula, collard greens, escarole and spinach) held at abuse temperature (15°C) (Sant'Ana *et al*.,). Change in packaging conditions or storage temperature has been reported to influence expression of virulence factors of pathogens (Carey *et al*., ; Sharma *et al*.,). An increase in expression of *E. coli* O157:H7 virulence genes, *eae*, *stx2* and *iha* were observed in cells that were associated with lettuce held under abuse storage temperature and near-ambient air atmosphere conditions (Sharma *et al*.,). Collectively, contamination with pathogenic microbes and increased spoilage microbial load on a product can occur during post-harvest processing of vegetables if best practices are not employed.

Outbreaks – The source of contamination

Identifying the point or source of contamination for a given outbreak is difficult at best, and for most outbreaks, the specific vehicle or source of contamination is not determined (Table). The complexity of a given product's journey from field to consumer makes identifying the point of contamination difficult and is exacerbated when the products come from foreign sources. Several outbreaks are presented to underscore the importance of the implementation of effective production and processing practices to provide healthy and microbiologically safe vegetables to the consumer.

Table 1.

Selected foodborne outbreaks linked to vegetables

Year	Implicated vehicle	Aetiology	Number of cases (hospitalization %)	Finding during environmental investigation
2014	Raw clover sprouts	*E. coli* O121	18 (44)	Unsanitary condition
2013	Ready-to-eat-salad	*E. coli* O157:H7	33 (32)	There were 5 of 10 samples from the surrounding areas of the harvest field that were positive for *E. coli* O157:H7, but do not match the outbreak strain
	Fresh produce (salad mix and cilantro)	*Cyclospora*	631 (8)	*Cyclospora* were not detected from environmental samples
	Cucumbers	*S.* Saintpaul	84 (28)	Investigation is still going on
2012	Spinach and spring mix	*E. coli* O157:H7	33 (46)	Source of contamination has not been identified yet
	Raw clover sprouts	*E. coli* O26	29 (33)	Potentially contaminated seeds
2011	Romaine lettuce	*E. coli* O157:H7	60 (67)	Contamination source was not identified
	Alfalfa and spicy sprouts	*S.* Enteritidis	25 (30)	Samples did not yield *Salmonella*, but observed unsanitary conditions
2010	Alfalfa sprouts	*Salmonella* I 4,(5),12:i:-	140 (24)	Unsanitary condition, one environmental (water run-off) sample yielded outbreak strain
	Alfalfa sprouts	*S.* Newport	44 (19)	Contaminated seeds
	Shredded romaine lettuce	*E. coli* O145	33 (40)	No deficiencies in the producer's good agricultural practices found – O145 outbreak strain was not detected
2009	Alfalfa sprouts	*S.* Saintpaul	235 (3)	Contaminated seeds
2008	Raw produce (jalapeño peppers, serrano peppers, tomatoes)	*S.* Saintpaul	1442 (20)	Irrigation water
2006	Tomatoes	*S.* Typhimurium	190 (22)	Contamination source was not determined

Year	Implicated vehicle	Aetiology	Number of cases (hospitalization %)	Finding during environmental investigation
	Iceberg lettuce	*E. coli O157:H7*	71 (75)	No identifiable risk factors were observed
	Fresh bagged spinach	*E. coli* O157:H7	205 (57)	Samples from faeces of cattle and wild pigs and water at ranch were matched to the outbreak strain

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Sprouts

In the United States, during the period from 2006 to 2014, 16 of 68 multistate foodborne outbreaks were linked to vegetables (CDC,). Seed sprouts were the implicated vehicle in nearly 38% (6 of 16) of those outbreaks. Contaminated seeds or unsanitary conditions of the production facility are often the cause of sprout contamination. Investigation on the 2010 *Salmonella enterica* serotype 4,5,12:i: – alfalfa sprout outbreak identified an environmental sample (water run-off) that was indistinguishable from the outbreak strain (CDC,). During inspection of the production facility, several unsanitary conditions were observed (Food and Drug Administration,). Hazardous conditions included but were not limited to: run-off water (sample was positive for the outbreak strain) from the compost area flowing into a drain near the entrance of the production greenhouse; an employee entered the compost site to dump production waste and returned to the production area without change of clothing, boots nor passage through a footbath with sanitizer; a cart used for transport of sprout trays was moved through the compost area by employees and not cleaned nor disinfected prior to entry back into the sprout-growing area; and no documentation to demonstrate that the seed-sanitizing method used was equivalent to the use of 20 000-ppm calcium hypochlorite recommended by the USFDA. Implementation of measures designed to limit or prevent contamination and cross-contamination of sprouts likely would have prevented the outbreak.

The large 2011 *E. coli* O104:H4 outbreak that was centred in Germany resulted in more than 4000 illnesses, over 850 cases of haemolytic uremic syndrome and 54 deaths (Frank *et al*.,). The outbreak was linked to the consumption of fenugreek sprouts; the epidemiological investigation suggested that the seeds were contaminated with a pathogen that grew during sprout production. Methods designed to improve the microbial quality of seeds are required. Present recommendations indicating the soaking of seeds in a high concentration of sanitizer are not completely in effect.

A recent multistate outbreak of Shiga toxin-producing *E. coli* O121 infections was linked to consumption of raw clover sprouts (CDC,). Even though no outbreak strain was isolated in the facility, FDA inspectors found unsanitary conditions in the facility, including: rusty and corroded water system; condensate dripping directly into the vats containing growing sprouts; inappropriate use of pitchfork and tennis rackets and cracked, damaged and chipped food contact surface (Food and Drug Administration,).

In 2010, a *Salmonella* Newport outbreak was linked to consumption of alfalfa sprouts (CalFERT,). The sprout producer implemented practices based on USFDA guidelines, such as storage of seeds under dry conditions and sanitizing seeds with calcium hypochlorite. Sanitation standard operating procedures were implemented correctly. Footbaths containing quaternary ammonia solution were placed at the entrance of each processing room. All records were daily documented and maintained. No violation nor unsanitary condition was observed. Moreover, environmental swabs, sprout products and germinating seed samples were negative for *Salmonella*. The outbreak *Salmonella* Newport strain was isolated from some seed samples. Contaminated seed was considered as a source of this outbreak.

Tomatoes and leafy greens

Tomatoes and leafy greens have been linked to a number of well-publicized foodborne outbreaks in the United States and globally. A multistate outbreak of *S.* Saintpaul resulted in more than 1400 infected people and serves to underscore how complicated it can be to delineate the commodity involved and the source of contamination of an outbreak (CDC,). Tomatoes were initially suspected as the vehicle of the outbreak; however, the epidemiological investigation by Centers for Disease Control and Prevention (CDC) and FDA ultimately revealed that the main cause were jalapeño and serrano peppers contaminated with *S.* Saintpaul (Klontz *et al*.,). The failure to initially identify peppers as the outbreak vehicle of *S.* Saintpaul resulted in huge economic loss to tomato growers. Behravesh and colleagues () found that 86% of cases were associated with eating salsa, guacamole and a raw jalapeño pepper garnish at Mexican-style restaurants. Further investigation revealed that the jalapeño peppers were contaminated prior to arrival at the restaurant (Mody *et al*.,). Traceback investigations included farms, packing operations and products imported to Mexico, Florida and Texas. Jalapeño peppers received by an importer in Texas from a packing facility in Mexico were tested positive for the outbreak strain (Behravesh *et al*.,). The outbreak strain was isolated from irrigation water, and serrano peppers on one of the farms where jalapeño peppers involved in the outbreak were grown. Mody and colleagues () concluded that agricultural water was one possible source of contamination and highlighted that water should be protected from animal and waste run-off.

Water as a vehicle for contamination of crops in the field was highlighted in the investigation of the 2006 *E. coli* O157:H7 outbreak associated with pre-bagged spinach. Change in the level of groundwater and ground-surface water was noted as contributing factors in the contamination of crops linked to the outbreak (CDC,). Potential access of cattle and wild pigs to a nearby river was proposed as an additional risk factor in water contamination with *E. coli* O157:H7. Monitoring the satisfactoriness of agricultural waters prior to field application is essential.

In 2013, a multistate outbreak of *E. coli* O157:H7 was linked to RTE salad (CDC,). The traceback investigation linked romaine lettuce from a farm in California as the vehicle for the outbreak. The outbreak resulted in the recall of approximately 181 620 pounds of RTE salad mix (Food and Drug Administration,). The FDA and The California Department of Public Health (CDPH) conducted an environmental investigation of the farm and found that 5 of 10 soil and water samples from the harvest field and in near proximity of the farm were positive for *E. coli* O157:H7, but not the outbreak strain. Investigators also indicated that two cattle operations in close proximity to the harvest fields may serve as source of contamination and advised the implementation of measures for the prevention of cross-contamination from those operations.

Since the mid-1990s, foodborne cyclosporiasis cases in North America have steadily increased (Kozak *et al*.,). In the United States, cyclosporiasis was linked to the consumption of *Cyclospora*-contaminated fresh raspberries, mesclun lettuce and basil (Ho *et al*.,). In 2013, a large *Cyclospora* outbreak was associated with salad mix and cilantro (Food and Drug Administration,). A total of 631 cases were identified from 25 states, and 8% of infected people were hospitalized. The packing facility's employees and restrooms were initially considered as potential sources of *C. cayetanensis*, but were later ruled out. The USFDA conducted an environmental assessment that included harvest crews, ranch workers, onsite sanitary facilities, irrigation water and field samples from five ranches. One potential cross-contamination point was identified as associated with the portable sanitary facilities. The hand-washing faucet, a hose–spigot style handle, should be touched before and after washing hands by field workers. However, all of the approximately 835 product, water and environmental samples tested were negative for *Cyclospora*.

Conclusion

There is a need for continued research to support development of ‘best practices’ for production and processing of fresh and fresh-cut vegetables to improve the microbial quality and safety of those commodities. Soil amendments can serve as a source of pathogens that cause human illness. Research has focused on solid, slurry and liquid manure types and the effects of manure collection and management

systems in pathogen survival. Research is lacking on the microbial safety of fish emulsion and pellet forms of manure (e.g. chicken manure pellets) used as soil amendments. During manufacture, a thermal process may be used, but studies to validate whether pathogens of human importance are inactivated are lacking.

Epidemiological investigations of foodborne illness outbreaks linked to consumption of fresh vegetables often implicate agricultural water as a source of contamination. Comparison of the three methods of irrigation confirmed (overhead sprinkler, subsurface drip or surface furrow) that sprinkle irrigation increased the risk for crop contamination. The literature provides no clear results in, for example, pathogen survival and the appropriate period between a final irrigation event and crop harvest. Improvement in testing and monitoring methods of agricultural waters and development of effective cost-appropriate systems to treat irrigation water prior to crop contact are needed.

A review of the literature indicates that there is a need for greater research on viruses and seed sprout production. Monitoring of soil amendments and agriculture water seldom includes testing for viruses or validation that the treatment processes inactivate viruses. Globally, seed sprouts have been linked to devastating outbreaks of foodborne illnesses. In many outbreaks, the source of contamination was traced to the seeds. Novel seed production and processing methods appropriate for use by conventional and organic producers are needed to improve the microbial safety of sprouts.

Conflict of interest

None declared.

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Artificial intelligence in food system: Innovative approach to minimizing food spoilage and food waste

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ABSTRACT

Globally, about one-third of all food produced for human consumption is lost or wasted, compounding issues of food security, economic inefficiency, and environmental harm. Artificial Intelligence (AI) presents transformative potential to mitigate these losses by enhancing food spoilage predictions and optimizing supply chain management. This paper examines the deployment of AI technologies such as machine learning models, predictive analytics, and advanced algorithm in predicting food spoilage with high accuracy, thereby reducing food waste substantially. Key innovations highlighted include early detection systems for spoilage indicators, dynamic algorithms for optimal storage conditions, and predictive models for waste forecasting based on real-time environmental data. A review of case studies, including AI-driven solutions from Shelf Engine and Afresh, shows a 14.8 % reduction in food waste per store, with an associated reduction of 26,705 tons of CO_2 emissions. Similarly, IKEA achieved a 30 % reduction in kitchen food waste within one year using AI-powered monitoring systems. Despite these successes, challenges in data collection, model training, and the integration of AI into existing food management systems persist. These include issues related to data quality, legacy system compatibility, and regulatory barriers. The paper concludes with actionable recommendations for future research, urging interdisciplinary collaboration to develop standardized data protocols, enhance real-time monitoring capabilities, and address the ethical implications of AI adoption in the food sector. By advancing these strategies, AI's full potential in curbing global food waste can be realized.

1. Introduction

The World Food Programme (WFP) reports that one-third of food produced worldwide for human consumption is wasted at various stages of the food supply chain [1]. This waste is enough to feed two billion people, a critical fact given that 30 % of the world's population currently experiences moderate to severe food insecurity, and over 900 million people face severe food shortages [2]. Food waste not only exacerbates these issues but also affects food availability by influencing market demand and supply dynamics, which in turn can drive up prices during periods of scarcity. Furthermore, food waste contributes to broader societal issues by intensifying economic disparities. Those who are wealthier can better afford food, thus widening the gap between social classes. In addition, the environmental impact of food waste is significant, as decomposing waste emits harmful pollutants. To address these multifaceted problems, solutions to reduce food waste are essential. Artificial Intelligence (AI) has emerged as a potent tool in this regard, particularly through its ability to predict food spoilage before it

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happens, potentially reducing waste significantly. By leveraging AI, there is potential to improve the sustainability of the global food supply chain, presenting a pathway to a more stable and equitable future.

Every year, approximately 1.3 billion tons of food are wasted worldwide, resulting in financial losses estimated at US$1 trillion [3]. Table 1 offers a detailed summary of food waste distribution and its primary causes throughout various stages of the supply chain. Chauhan et al. [4] identify that approximately 24 % of food waste occurs at the production and post-harvest stages, attributed mainly to inefficient agricultural practices and inadequate storage facilities, respectively. In addition, 17 % of waste arises during transportation, often due to improper handling and adverse environmental conditions. At the retail level, 20 % of food is wasted due to overstocking and stringent cosmetic standards. However, the consumption stage accounts for the most significant loss, 35 %, predominantly influenced by consumer behaviors such as excessive purchasing.

The economic impact of food waste is profound, encompassing not only the direct loss of food value but also indirect costs including healthcare expenses, pollution, and waste management [9]. These economic repercussions vary based on household and national economic status, with wealthier entities generally wasting more food at the consumer level, whereas poorer households and developing countries experience higher losses post-harvest [10].

Food waste not only highlights the disparities between affluent and impoverished populations by affecting their respective food access and security [11] but also imposes substantial environmental costs. The cultivation of food demands extensive use of critical resources such as land and water, which are squandered when the food is not consumed [6]. In addition, the disposal and decomposition of wasted food contribute significantly to environmental degradation, emitting an equivalent of 3.3 Gt of carbon dioxide annually [6]. These environmental and economic impacts underline the urgent need for strategic interventions to mitigate food waste at all levels of the supply chain.

This paper seeks to review the broader impacts of AI applications on reducing economic losses due to food waste and minimizing environmental damage through more effective resource management and waste reduction strategies. We aim to address the following research questions.

RQ 1: How can artificial intelligence (AI) technologies be applied to predict and reduce food spoilage across different stages of the food supply chain?
RQ 2: What are the challenges associated with integrating AI into existing food management systems, and how can these challenges be overcome to improve the efficiency and effectiveness of food spoilage prevention?
RQ 3: What potential does AI hold for improving economic and environmental sustainability in the food supply chain through enhanced spoilage prediction and waste reduction?

Table 1
Overview of food waste by stage in the supply chain.

Stage	Percentage of Total Waste	Key Factors Contributing to Waste
Production	24 %	Inefficient farming techniques, natural disasters
Post-Harvest	24 %	Poor storage facilities, lack of proper infrastructure
Transportation and Retail	17 %	Inadequate transportation methods, delays, exposure to unsuitable environments Overstocking, cosmetic standards, improper handling
Consumption	35 %	Over-purchasing, lack of planning, poor consumer habits

Source: Adapted from Chauhan et al. [4], WFP [3], Xue et al. [5].

These questions investigate the deployment of AI tools such as machine learning models and predictive analytics in enhancing the accuracy of food spoilage predictions, which could lead to significant reductions in food waste. We explore the obstacles related to data collection, model training, and the practical integration of AI technologies into the food industry's operational frameworks, emphasizing the need for standardized data and interoperable systems.

This study provides a holistic analysis of AI applications across multiple stages of the food supply chain, integrating real-time monitoring, predictive modeling, and decision-support systems. Unlike previous studies, this research explores how AI can dynamically adapt to real-world complexities, including fluctuating food demand, variable storage conditions, and multi-stakeholder interactions. The study presents a novel framework for AI-driven food spoilage detection and waste reduction, leveraging machine learning, IoT, and blockchain technologies to enhance decision-making and efficiency.

2. Methodology

2.1. Research approach

A comprehensive literature review was conducted to establish a foundational understanding of AI applications in minimizing food waste. To ensure a broad yet rigorous examination of existing research, multiple databases were utilized, including PubMed (for studies related to food systems), Google Scholar (to access a wide range of scholarly articles, including grey literature), and Scopus (for interdisciplinary research coverage).

2.2. Search strategy

The search strategy incorporated Boolean operators (AND, OR, NOT) to refine results and improve relevance. Keywords included "AI in food systems", "food spoilage prediction", "machine learning in food waste management", "supply chain optimization", and "AI-driven food sustainability".

2.3. Eligibility criteria

Articles were selected based on the following criteria.

- Inclusion Criteria: Relevance to AI-driven food waste reduction, publication in peer-reviewed journals, and the presence of empirical data or robust theoretical frameworks.
- Exclusion Criteria: Studies lacking methodological rigor or those that did not directly address the application of AI in food waste reduction.

The review primarily covered research published between 2020 and 2024 to capture recent advancements, with an emphasis on the latest studies up to May 2024. This approach ensured that the paper's analysis was grounded in the most current and relevant findings

3. AI innovations in predicting food spoilage

The integration of AI, along with other Industrial 4.0 technologies like big data and Internet of Things (IoT), is anticipated to significantly enhance the food supply chain. According to Romanello and Veglio [12], these technologies are set to improve food quality and safety, boost environmental sustainability, and increase operational efficiency across all stages of the food supply chain. AI is utilized in various phases such as crop monitoring and early pest detection during the planting and production stages, storage monitoring post-harvest, routing optimization in transportation, inventory management in retail, and expiry tracking at the consumption stage. This comprehensive application of AI not only addresses quality and efficiency but also plays a crucial role in reducing food spoilage and waste, offering a potential solution to a persistent

global issue. Fig. 1 outlines the various stages of the food supply chain and the specific applications of AI and other technologies at each stage to enhance efficiency and reduce waste.

In the food supply chain, AI technologies play a critical role across various stages to ensure efficiency and food safety. At the production stage, AI is employed for crop monitoring, pathogen detection in agriculture, and detecting microorganisms in poultry farms, aiming to enhance the quality and yield of agricultural products by preventing diseases and pests [13,14]. For instance, deep learning models have been successfully implemented in crop disease detection, significantly improving early identification and prevention strategies [15]. Moreover, AI-driven spectral imaging techniques have demonstrated high accuracy in detecting pathogens in poultry farms, improving biosecurity measures [16]. During the post-harvest stage, AI aids in monitoring storage environments and sanitizing processing equipment to reduce losses from spoilage and contamination [17]. Studies show that AI-integrated IoT systems enable real-time monitoring of storage conditions, helping to predict and prevent spoilage [18,19].

In transportation, AI applications like routine optimization, temperature control, and cold-chain break analysis ensure perishable goods are transported efficiently and remain unspoiled, particularly vital for temperature-sensitive products [20]. Research indicates that AI-powered predictive analytics enhance cold-chain logistics, minimizing temperature fluctuations that compromise food quality [21]. At the retail level, AI supports inventory management and food safety training to manage stock effectively and ensure compliance with food safety standards. AI-based demand forecasting techniques have improved inventory optimization, reducing food waste in bakeries [22]. Additionally, AI-driven training systems enhance food safety compliance by providing interactive learning modules for food handlers [23,24]. Finally, during consumption, AI helps identify unsafe foods through analysis of online review comments and tracking expiration dates, thus assisting consumers in avoiding spoiled or unsafe products. Sentiment analysis of online reviews has proven effective in detecting foodborne illness outbreaks, allowing for timely intervention [25]. Moreover, AI-powered smart labeling systems aid consumers in tracking product freshness and expiration dates, reducing household food waste [26]. Overall, Fig. 1 highlights the interconnected role of advanced technologies in optimizing each stage of the food supply chain, aiming to minimize waste and enhance food safety from production to consumption. These technological interventions not only aim to increase the efficiency of these processes but also contribute to sustainability by reducing the environmental impact associated with food waste and spoilage.

4. AI for early detection

Food spoilage results from various factors including the presence of pathogens, chemical and biochemical reactions, physical damage, and enzymatic activities. These factors alter the pH, nutritional content, taste, texture, color, and water activity of food, making it unsafe or unpleasant for consumption [27]. AI and machine learning technologies offer promising solutions to mitigate food waste by predicting spoilage with high accuracy before it occurs. These machine-learning models are trained on extensive datasets that include information about food characteristics, ideal storage conditions, and signs of spoilage [28]. These advanced models not only predict the shelf life of food items but also use environmental data such as humidity, temperature, and ventilation to recommend optimal storage conditions, thus preventing spoilage. In microbiology, AI is also repurposed for the early detection of pathogens in food, contributing to food safety by predicting and reducing the risks of foodborne illnesses [29].

Further, AI and big data (characterized by high volume, velocity, and variety of information) play crucial roles in identifying early warning signs of food safety risks during production, such as harmful algal blooms affecting seafood or fungal growth in crops, which could lead to mycotoxin formation. Big data technologies, including machine learning algorithms, cloud computing, and predictive analytics, process vast amounts of real-time data from diverse sources such as IoT sensors, satellite imaging, and microbiological analysis to detect contamination patterns, optimize food distribution, and improve risk assessment in food safety. These technologies enable the food industry to effectively monitor and assess quality and safety in real-time, ensuring product integrity and consumer health [30]. These AI-enabled systems have been effectively implemented in various practical scenarios, such as the US FDA's use of AI to detect problematic seafood imports and vegetable growers using AI to manage crop risks based on environmental factors [31,32]. AI does not only enhance food safety but also reduces food waste by allowing for more precise management of food quality and safety risks throughout the supply chain.

5. AI for optimizing food storage and distribution

AI technology enhances food preservation by predicting and preventing spoilage, aligning closely with sustainable agricultural practices. Notably, a machine learning model described by Sonwani et al. [33] assesses whether fruits and vegetables are stored under optimal conditions by analyzing images of produce under varying temperature and humidity settings using convolutional neural networks (CNNs). This model not only predicts the shelf life of these items but also supports the development of intelligent inventory systems that minimize waste through real-time adjustments of storage conditions. The model uses image recognition algorithms to detect subtle visual cues of spoilage such as color change and texture degradation and pairs this data with environmental sensors to refine predictions of produce deterioration. Additionally, AI's predictive analytics are utilized to anticipate consumer demand patterns, allowing for better alignment of food production with consumption, thus reducing the likelihood of overproduction [34]. Recurrent neural networks (RNNs), such as Long Short-Term Memory (LSTM) models, are employed to recognize seasonal

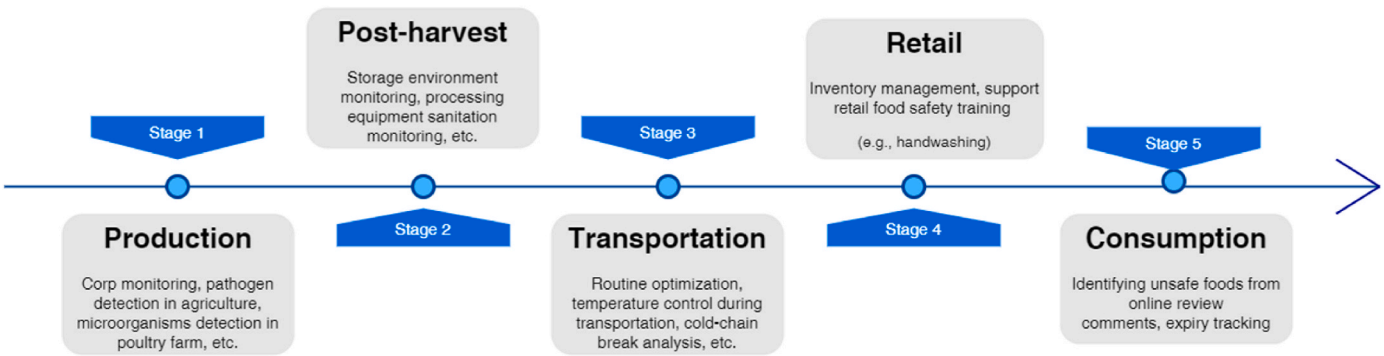

Fig 1. AI application in food supply chain.

fluctuations and forecast future demand, allowing for better alignment of food production with consumption, thus reducing the likelihood of overproduction [35]. These capabilities extend throughout the supply chain, ensuring proper storage conditions are maintained by adjusting factors such as temperature and humidity in real-time. AI also facilitates the efficient redistribution of food to areas with high demand, such as shelters, by integrating logistics optimization algorithms that prioritize deliveries based on freshness and need.

AI also plays a crucial role in managing microbiological risks during storage, transportation, and consumption, by analyzing environmental conditions and identifying patterns that could lead to foodborne illnesses. [24]. Predictive models based on support vector machines (SVMs) or random forests can flag potential risk factors by correlating storage conditions with microbiological data to anticipate outbreaks of spoilage or contamination [24]. These models not only improve food safety but also reduce waste due to spoilage and contamination.

Beyond food safety, AI applications offer significant environmental and economic benefits. For instance, Bhatia et al. [6] report that AI implementation in food management has notably reduced CO_2 emissions, with one case showing an annual reduction of 26,705 tons. Economically, AI-driven forecasting tools, such as demand prediction models and dynamic pricing algorithms, have proven effective in the grocery sector, reducing costs related to unsold inventory and disposal while boosting profitability. The Pacific Coast Food Waste Commitment [8] cites an average profit increase of 14.8 % per store following the adoption of AI technologies for inventory management (see Table 2). These advancements highlight the multifaceted benefits of AI, underscoring its impact on both environmental sustainability and economic efficiency in the food industry.

6. Challenges in implementing AI for food spoilage prediction

Implementing AI for predicting food spoilage presents substantial challenges, primarily stemming from the need for diverse, high-quality data essential for training effective predictive models. Data collection involves accumulating detailed information on variables such as temperature, humidity, storage conditions, and microbial activity. However, acquiring extensive and representative datasets is often difficult due to the variability across different food types, storage conditions, and spoilage processes, as highlighted by Anwar et al. [36]. Each type of food has unique properties and degradation paths, requiring specifically tailored datasets for accurate modeling [37].

Moreover, ensuring the quality and consistency of the data collected is a significant challenge. Data sources vary widely, ranging from sensor outputs and manual observations to historical records, each offering differing levels of accuracy and reliability [38]. Issues such as errors, biases, or missing entries in these datasets can severely impact the performance of AI models, leading to flawed predictions and unreliable outcomes [39].

Another obstacle is the standardization of data collected from disparate sources. The food industry lacks universally accepted protocols for data collection, which complicates efforts to standardize data, a crucial step for developing robust AI applications [38]. These challenges underscore the complexities involved in deploying AI for food spoilage prediction and highlight the need for concerted efforts to improve data quality and standardization in this field. Table 3 provides a summary of key challenges and potential solutions in implementing AI for food spoilage prediction.

Table 2
Financial and environmental impact of AI in food waste reduction.

Impact Type	Quantitative Benefit	Reference Case
Reduction in CO_2 Emissions	Reduction of 26,705 tons annually	Case Study involving AI implementation in retail grocery [8]
Cost Savings	Decrease in costs associated with food disposal and unsold inventory	Grocery retail sector through AI forecasting tools [7]
Increased Profitability	The average increase in profits by 14.8 % per store	AI-enhanced inventory management in multiple stores [8]

Sources: Bhatia et al. [6] for environmental impact figures, and Ciccullo et al. [7] and Pacific Coast Food Waste Commitment [8] for financial benefits.

The integration of AI in food spoilage prediction faces significant hurdles, not least of which is data accessibility and sharing. Ethical concerns about data privacy, proprietary interests, and adherence to regulatory standards frequently obstruct the free exchange of valuable data resources [53]. The reliance on expansive and diverse sets of training data, sourced from various devices such as sensors, cell phones, and cameras, introduces additional complexities related to data security and the potential exposure of sensitive personal information [40]. Moreover, collaborative projects often encounter obstacles in formulating data-sharing agreements, adhering to legal frameworks, and reconciling stakeholder concerns over data ownership and intellectual property rights [41].

To navigate these challenges, implementing strategies for data standardization, fostering open data platforms, and cultivating partnerships is essential. This includes harmonizing data formats, ontologies, and metadata to ensure consistency and interoperability across diverse sources [54]. Open data initiatives, which promote transparency and protect privacy through anonymization and encryption, are crucial in this context [39]. Moreover, collaboration among industry stakeholders, academic researchers, and regulatory authorities is vital to facilitate data sharing, establish best practices, and address the legal and ethical dimensions of data utilization [55].

A notable example of an innovative solution to these issues is the decentralized privacy-preserving technology used by Gorji et al. [40]. This approach leverages federated learning alongside new fluorescence imaging technology and two deep learning models to detect invisible residues on food preparation equipment and surfaces, classifying them as clean or contaminated. This model operates without the need to share data across clients or store data on a centralized server, thus enhancing client data privacy and addressing one of the critical challenges in deploying AI in food safety applications.

As AI and machine learning models become more prevalent in the field of food spoilage, issues of bias in these technologies have also come to the forefront. Ruben, Emilio, and Javier [42] highlight that biases can manifest at various stages of the AI development pipeline, from data collection to model training and deployment. During the data collection and labeling phase, biases may arise if the dataset is incomplete, non-representative, or if different annotators interpret labels inconsistently, leading to skewed outputs from AI algorithms. Similarly, biases can occur in the model training phase if the data is unbalanced or if the model architecture is ill-equipped to handle diverse inputs.

Moreover, it is crucial to continuously monitor and test AI models with a variety of inputs post-deployment to detect and mitigate biases. Thomas et al. [48] note that such biases can exacerbate existing social inequalities if biased data reinforce pre-existing prejudices. This issue is illustrated by Supriya [43], who observed that AI models can display discriminatory patterns against people of color, a problem that often goes unrecognized when the training data itself harbors biases such as out-group homogeneity. These biases not only distort the outputs but also perpetuate and intensify social inequalities and discrimination. Therefore, addressing these biases is essential for ensuring fairness and equity in AI applications within food safety and beyond.

The conceptual framework illustrating sources of bias in AI deployment within food systems (Fig. 2) critically underscores the multifaceted nature of biases that may compromise the accuracy, fairness, and applicability of AI-driven food spoilage prediction models. Data-related biases, such as incomplete or skewed datasets, can arise from over-reliance on historical sales records that fail to capture emerging consumption trends, leading to inaccurate demand forecasting. Algorithmic

Table 3
Summary of key challenges and solutions in implementing AI for food spoilage prediction.

Category	Challenge	Description	References
Data Collection	Diverse, High-Quality Data	Difficult to collect comprehensive data on temperature, humidity, microbial activity across food types.	Anwar et al. [36], Deng et al. [37]
	Data Variability	Different food types require tailored datasets, making data collection complex.	Anwar et al. [36]
	Data Quality Issues	Inaccurate or missing data from sources like sensors or records affect AI predictions.	Wang et al. [38], Voulodimos et al. [39]
	Data Standardization	Lack of universal protocols for data collection complicates consistency.	Wang et al. [38]
Data Accessibility & Sharing	Privacy & Security Concerns	Ethical and legal barriers hinder data sharing, especially sensitive personal data.	Qian et al. [24], Gorji et al. [40]
	Legal & Regulatory Barriers	Intellectual property and legal concerns block data sharing agreements.	Houser and Bagby [41]
	Decentralized Data Solutions	Federated learning can address privacy issues by keeping data decentralized.	Gorji et al. [40]
Bias in AI Models	Data-Related Biases	Skewed or incomplete datasets result in biased predictions.	Ruben et al. [42]
	Algorithmic Biases	Overemphasis on certain factors (e.g., temperature) reduces prediction accuracy.	Ruben et al. [42]
	Operational & Human Biases	Subjective decisions based on intuition affect AI model deployment.	Supriya [43]
Integration & Operations	Legacy System Compatibility	Difficulty integrating AI with existing food management systems.	Patel et al. [44]
	Organizational & Workforce Barriers	Training staff and adapting workflows for AI adoption can be challenging.	Richey et al. [45]
	Financial Constraints	High initial costs and maintenance expenses create financial barriers.	Rejeb et al. [46]
Regulatory & Legal Barriers	Lack of Regulatory Frameworks	AI technologies face regulatory gaps in food safety standards and assessment.	Thakkar et al. [47]
	Data Harmonization	Need for standardized data formats for international collaboration.	Mu et al. [31], Thakkar et al. [47]
Ethical & Fairness Issues	Bias Amplification	AI models may perpetuate societal biases if trained on biased data.	Thomas et al. [48], Supriya [43]
	Ensuring Fairness	Continuous monitoring of AI models is needed to detect and correct emerging biases.	Thomas et al. [48]
Strategies for Solutions	Standardizing Data Protocols	Develop universal protocols for data collection (e.g., FoodON) to improve data consistency.	Dooley et al. [49]
	Active Learning & Synthetic Data	Use active learning and synthetic data to fill gaps and reduce bias.	Shorten and Khoshgoftaar [50]
	Federated Learning	Implement federated learning to protect data privacy while training models.	Sheller et al. [51]
	Continuous Model Monitoring	Use fairness-aware algorithms to monitor and correct biases in deployed AI models.	Mehrabi et al. [52]

biases emerge when AI models disproportionately weight specific spoilage factors such as temperature fluctuations while neglecting variables like microbial growth, thereby reducing predictive robustness. Operational and human biases further exacerbate inefficiencies, as decision-makers may either overtrust or disregard AI recommendations based on subjective intuition, potentially undermining the system's efficacy. Moreover, external constraints, including regulatory inconsistencies and economic disparities, hinder equitable AI adoption, particularly among small-scale retailers who may lack the financial resources to implement sophisticated predictive analytics. For instance, while large grocery chains can leverage AI-driven demand forecasting tools to optimize inventory management, smaller vendors relying on traditional methods could face increased food waste due to less precise stock adjustments. Addressing these biases necessitates a comprehensive approach that integrates diverse datasets, refines algorithmic transparency, and ensures equitable access to AI technologies across the food supply chain, ultimately fostering a more sustainable and efficient food management ecosystem.

To address challenges in AI-driven food spoilage prediction, targeted strategies must be implemented to enhance data standardization, mitigate bias, and improve integration. First, establishing universal data collection protocols is essential for ensuring consistency and comparability across different datasets. Standardized ontologies, such as the FoodON framework [49], can facilitate interoperability and improve data quality. Additionally, techniques like active learning and synthetic data generation can help compensate for gaps in real-world datasets, reducing bias and improving model generalization [50]. To address ethical concerns surrounding data sharing, federated learning where AI models are trained across decentralized devices without sharing raw data has been successfully used in medical imaging and can be adapted to food safety applications [51]. Moreover, ongoing monitoring of AI models using adversarial testing and fairness-aware algorithms can detect and correct biases that emerge post-deployment [52]. Industry collaborations, including partnerships between regulatory agencies, food producers, and technology developers, can also foster the adoption of best practices and regulatory frameworks that balance innovation with ethical considerations [56]. Implementing these solutions will not only enhance the accuracy and fairness of AI models but also support a more sustainable and equitable food supply chain.

Achieving high accuracy, integrity, and reliability in AI models is critical for their effective application in predicting food spoilage. This requires comprehensive training datasets that encompass a variety of food types, storage conditions, and spoilage factors. Jarray et al. [57] emphasize the importance of improving data collection methodologies, advancing feature selection techniques, and refining algorithmic approaches to boost prediction accuracy. Additionally, real-world validation of AI models is vital to ensure their robustness and applicability across different operational environments. This validation process involves rigorous testing in actual settings to evaluate model performance, pinpoint limitations, and adjust algorithms as necessary ([57]; Wang

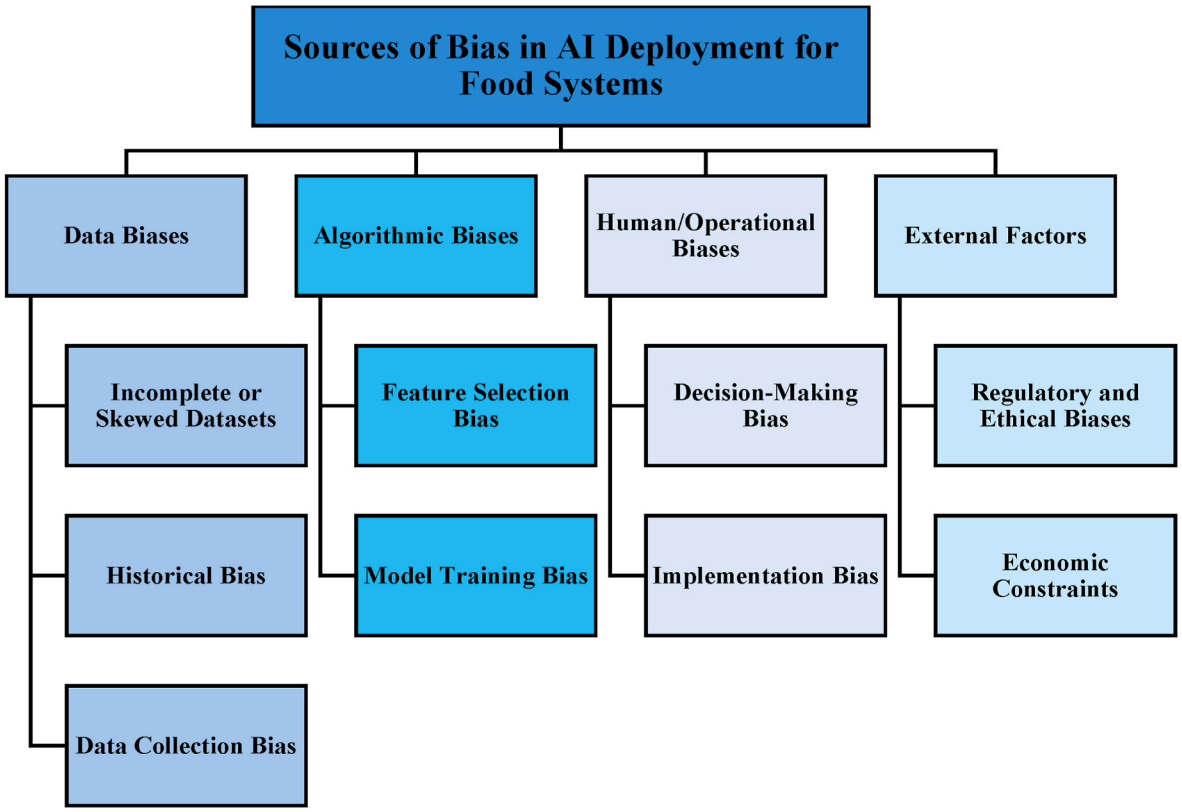

Fig 2. Sources of bias in AI deployment for food systems.

et al., 2021).

Integrating AI technologies into existing food management and supply chain systems also presents significant challenges. Technological issues such as compatibility with legacy systems, interoperability concerns, and the necessity for specialized infrastructure to support AI implementations are notable barriers [44]. Furthermore, operational hurdles include the need to adapt existing workflows and processes to integrate AI insights seamlessly, requiring organizational commitment, workforce training, and change management strategies [45]. Financial obstacles also arise, including substantial initial investment costs, ongoing maintenance expenses, and uncertain returns on investment [46].

Additionally, the regulatory landscape is yet to fully adapt to the integration of AI, with a current lack of appropriate scientific knowledge and assessment practices within regulatory agencies to effectively address the challenges posed by AI technologies [47]. To facilitate international collaboration and data exchange, researchers suggest harmonizing data formats and establishing cooperative platforms and databases, which could help mitigate some of these challenges [31,47]. These efforts are crucial for harnessing AI's potential in improving food safety and reducing waste effectively.

7. Case studies: success stories of AI in reducing food waste

The integration of AI technologies in the grocery retail sector represents a pivotal strategy for reducing food waste, enhancing operational efficiency, and mitigating environmental impacts [7]. These AI systems utilize sophisticated algorithms to process extensive datasets—including sales records, historical trends, and external influences like weather patterns and seasonal variations—to accurately predict consumer demand [58]. This capability allows retailers to optimize inventory levels and minimize over-ordering, thus reducing the incidence of unsold or spoiled products and, consequently, shrinkage and food waste. According to the Pacific Coast Food Waste Commitment [8], the financial advantages of avoiding disposal of unsold inventory and reducing shrinkage highlight the effectiveness of AI in boosting profitability while addressing food waste.

Further emphasizing the operational benefits, AI automates labor-intensive tasks such as ordering and restocking, leading to increased efficiency and cost reductions. Successful pilot programs and the subsequent broader implementation of AI solutions across multiple stores demonstrate the scalability and effectiveness of these technologies in the grocery retail industry.

Several case studies illustrate the concrete impact of AI in reducing food waste. For example, retailers using AI solutions from Shelf Engine and Afresh saw an average food waste reduction of 14.8 % per store, achieving not only reduced shrinkage and higher profits but also labor efficiency improvements that offset the costs of AI implementation [8]. Moreover, these initiatives prevented 26,705 tons of CO_2 emissions from reaching landfills, underscoring the significant environmental benefits. Another case study involving Winnow Solutions and IKEA showed that deploying AI to monitor and analyze food waste in IKEA's kitchens led to a 30 % reduction in food waste within just one year [59]. These examples demonstrate the potential of AI-driven solutions to predict food spoilage, optimize inventory management, and foster sustainable practices, significantly mitigating food waste across various settings.

8. AI/machine learning models for food spoilage prediction

Building on the case studies and successful applications of AI in reducing food waste, it is important to explore the underlying machine learning (ML) AI models that power food spoilage prediction and inventory management. The deployment of these AI models varies depending on the nature of the data, the complexity of the environment, and the specific objectives of the food system [60]. Understanding the strengths, limitations, and real-world applications of these models is critical to advancing AI's role in mitigating food waste.

Supervised learning models, such as Random Forest (RF), SVM, and

Artificial Neural Networks (ANN), play a foundational role in food spoilage prediction. By learning from historical, labelled data, these models help predict spoilage patterns based on variables like temperature, humidity, and microbiological conditions. For instance, RF is particularly adept at managing heterogeneous datasets, making it a solid choice for diverse food products [61]. However, its reliance on large, labelled datasets and difficulty with high-dimensional data highlight the challenges that can arise in real-world applications. SVM models, which excel at binary classification tasks [62], could be useful for distinguishing between fresh and spoiled food. They work by finding the optimal hyperplane that separates the two classes, making them suitable for such applications but can be computationally intensive for large-scale deployments. To address these challenges, researchers have explored various strategies to enhance the efficiency of SVMs. For instance, a study by Pouladzadeh et al. [63] discusses the use of SVMs in food recognition applications, which is a crucial step in calorie estimation. ANN models, especially deep learning networks, have shown great promise in detecting subtle spoilage indicators from complex datasets, such as hyperspectral imaging data, but come with higher computational costs and data requirements [64,65].

In contrast, unsupervised learning models, including K-Means Clustering and Principal Component Analysis (PCA), offer potential in anomaly detection and food spoilage prediction. These models do not require labelled data and can identify outliers in environmental conditions that may lead to spoilage. K-Means clustering, for example, helps segment food products based on spoilage characteristics, facilitating better inventory management [66]. However, challenges arise in handling non-spherical data distributions [67]. PCA, useful for dimensionality reduction, enhances computational efficiency but may overlook important spoilage indicators when critical features are discarded [68].

Deep learning models, including CNN and RNN, have revolutionized the prediction of food spoilage by analyzing image and time-series data. CNNs are particularly useful for visual quality assessments, such as detecting microbial contamination in fresh produce using hyperspectral imaging, enabling early detection of spoilage [69]. On the other hand, RNNs, particularly LSTM networks, excel in analyzing time-dependent data, such as temperature and humidity trends in cold storage facilities, predicting spoilage risks with high temporal accuracy [70,71]. Despite their advantages, CNNs and RNNs require large, labelled datasets and substantial computational resources, making them more challenging to implement for smaller-scale operations.

Reinforcement learning (RL) models, such as Deep Q-Networks (DQN), optimize inventory management by adjusting order patterns based on spoilage risks and demand fluctuations [72,73]. By dynamically learning the best decision-making strategies, RL can reduce food waste while maximizing profitability. Hybrid approaches, which integrate AI models with IoT sensors, provide real-time monitoring and enable adaptive control over food storage conditions. For instance, combining LSTM with IoT-based temperature sensors significantly enhances spoilage prediction accuracy by accounting for real-time environmental changes [74]. However, RL models require significant training time and continuous real-world feedback, presenting challenges for immediate scalability.

Despite the promising results demonstrated in case studies, the use of AI technologies to reduce food waste is not without its limitations and challenges. AI models heavily rely on large, high-quality datasets, which may not always be available, especially for smaller businesses with limited historical data. The initial costs of implementing AI systems, along with ongoing computational and maintenance requirements, can also be prohibitive. Additionally, while these technologies are scalable for large operations, their complexity and resource demands may make them difficult to apply in smaller-scale environments. Furthermore, AI solutions are often dependent on real-time data inputs, such as sensor readings, which can be vulnerable to inaccuracies or malfunctions. Issues related to model selection, computational efficiency, and potential job displacement also add to the complexity of widespread AI adoption in the food sector.

9. Future directions and research opportunities in AI for food spoilage prediction

Future research in AI and food spoilage prediction is poised to advance along several integrated and strategic paths to enhance the effectiveness and application of these technologies:

Technological advancements: Research efforts should focus on improving AI algorithms for better accuracy and reliability in predicting food spoilage. This involves developing advanced deep-learning models that can process and analyze complex datasets to pinpoint subtle spoilage indicators with greater precision.

Integration with emerging technologies: Investigating the synergies between AI and emerging technologies like the IoT and blockchain is crucial. IoT sensors offer continuous monitoring of environmental conditions and food quality parameters, feeding real-time data into AI algorithms for sharper spoilage predictions [75]. Similarly, blockchain technology enhances traceability and transparency within the food supply chain, aiding in the effective tracking of food products and enabling timely interventions to prevent spoilage [68]. This transparency enables AI systems to process data with greater precision tracking variables such as temperature fluctuations, humidity levels, and transit times which are critical to predicting spoilage [75]. By guaranteeing the integrity and availability of data throughout the entire food supply chain, blockchain facilitates the timely identification of spoilage risks and vulnerabilities. As a result, AI models can generate more reliable predictions and inform decision-making processes that lead to waste reduction, particularly by minimizing the risk of overstocking or mishandling perishable goods [33].

Multi-modal data fusion: The fusion of diverse data sources—including sensory, chemical, and microbiological data—into AI models can significantly enrich predictive accuracy and offer a deeper understanding of the mechanisms behind food spoilage. This comprehensive approach is essential for capturing the full spectrum of factors that influence spoilage.

Real-time monitoring and adaptive control: Developing AI systems equipped with real-time monitoring and adaptive control capabilities can enable proactive management of food storage conditions. By leveraging predictive insights, these systems can dynamically adjust variables such as storage environments, packaging materials, and distribution logistics to minimize waste and maximize food safety and quality [33].

Collaborative research initiatives: Fostering interdisciplinary collaborations among food scientists, data scientists, engineers, and industry stakeholders will accelerate the pace of innovation in AI applications for food spoilage prediction. Such collaborative efforts can harness diverse expertise and resources to tackle complex challenges and develop viable, sustainable solutions for managing food waste [76].

By focusing on these areas, researchers and industry practitioners can significantly advance the capabilities of AI in reducing food waste, with profound implications for both the economy and the environment.

10. Conclusion

AI has emerged as a transformative force in the battle against food waste and spoilage, unlocking new avenues for enhancing food safety and sustainability across the global supply chain. By harnessing advanced algorithms and real-time data analytics, AI enables the early detection of spoilage, optimizes inventory management, and significantly reduces waste through more accurate demand forecasting. The results are not just theoretical; companies like IKEA, Shelf Engine and Afresh have already demonstrated significant reduction in food waste per store, directly translating to meaningful environmental impacts, including the prevention of thousands of tons of CO_2 emissions. These

underscore AI's practical applicability and the potential for large-scale improvements in food systems.

The unique contribution of this study lies in its demonstration of AI's capacity to drive tangible, measurable change across both operational efficiencies and environmental outcomes. The results provide clear evidence that AI can revolutionize food waste management, offering solutions that not only reduce waste but also contribute to a more secure and sustainable global food supply. The ability to optimize resources, minimize waste, and reduce carbon footprints is essential for meeting the world's growing food demands while mitigating environmental harm.

To unlock AI's full potential, however, requires overcoming key challenges, such as data quality, model training, and integration with existing systems. Addressing these obstacles demands a collaborative effort among technologists, researchers, policymakers, and industry stakeholders. The integration of AI with complementary technologies like IoT and big data offers additional opportunities to create a smarter, more efficient food system. Future research must focus on overcoming the barriers of data privacy, model biases, and regulatory compliance, ensuring that AI's transformative potential is fully realized. By fostering interdisciplinary collaboration and standardizing data protocols, we can build a more sustainable, efficient, and resilient food supply chain that benefits both people and the planet for generations to come.

CRediT authorship contribution statement

Helen Onyeaka: Writing – review & editing, Writing – original draft, Validation, Supervision, Conceptualization. **Adenike Akinsemolu:** Writing – review & editing, Writing – original draft. **Taghi Miri:** Writing – review & editing, Writing – original draft, Supervision. **Nnabueze Darlington Nnaji:** Writing – review & editing, Writing – original draft. **Keru Duan:** Writing – review & editing, Writing – original draft. **Gu Pang:** Writing – review & editing, Writing – original draft. **Phemelo Tamasiga:** Writing – review & editing, Writing – original draft. **Samran Khalid:** Writing – review & editing, Writing – original draft. **Zainab T. Al-Sharify:** Writing – review & editing, Writing – original draft. **Chinenye Ugwa:** Writing – review & editing, Writing – original draft.

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Adults Meeting Fruit and Vegetable Intake Recommendations — United States, 2019

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The 2020–2025 Dietary Guidelines for Americans* advise incorporating more fruits and vegetables into U.S. residents' diets as part of healthy dietary patterns. Adults should consume 1.5–2 cup-equivalents of fruits and 2–3 cup-equivalents of vegetables daily.† A healthy diet supports healthy immune function (*1*) and helps to prevent obesity, type 2 diabetes, cardiovascular diseases, and some cancers (*2*); having some of these conditions can predispose persons to more severe illness and death from COVID-19 (*3*). CDC used the most recent 2019 Behavioral Risk Factor Surveillance system (BRFSS) data to estimate the percentage of states' adult population who met intake recommendations overall and by sociodemographic characteristics for 49 states and the District of Columbia (DC). Overall, 12.3% of adults met fruit recommendations, ranging from 8.4% in West Virginia to 16.1% in Connecticut, and 10.0% met vegetable recommendations, ranging from 5.6% in Kentucky to 16.0% in Vermont. The prevalence of meeting fruit intake recommendations was highest among Hispanic adults (16.4%) and lowest among males (10.1%); meeting vegetable intake recommendations was highest among adults aged ≥51 years (12.5%) and lowest among those living below or close to the poverty level (income to poverty ratio [IPR] <1.25) (6.8%). Additional policies§ and programs that will increase access to fruits and vegetables in places where U.S. residents live, learn, work, and play, might increase consumption and improve health.

BRFSS is an annual, state-based, random-digit–dialed telephone survey of health-related behaviors representative of noninstitutionalized adults aged ≥18 years in the United States and participating territories.¶ Since 1989, BRFSS has collected information on respondents' frequency of fruit and vegetable consumption. The current module assesses the number of times per day, week, or month a respondent consumed whole fruit, 100% fruit juice, salads, fried potatoes, other potatoes, and other vegetables during the past 30 days. In 2019, New Jersey data did not meet the minimum requirements for inclusion** and were excluded. Among 418,268 respondents

* https://www.dietaryguidelines.gov/sites/default/files/2020-12/Dietary_Guidelines_for_Americans_2020-2025.pdf

† Appropriate for adults who engage in <30 minutes of moderate physical activity; more active adults might be able to consume more while staying within calorie needs. https://www.myplate.gov/eat-healthy/fruits; https://www.myplate.gov/eat-healthy/vegetables

§ https://www.healthypeople.gov/sites/default/files/NWS_ExecutiveSummary_2018-10.03.pdf

¶ https://www.cdc.gov/brfss/

** https://www.cdc.gov/brfss/annual_data/2019/pdf/overview-2019-508.pdf

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to the current BRFSS, 8,458 residents of Guam and Puerto Rico were excluded, because the scoring algorithms were derived from the National Health and Nutrition Examination Survey (NHANES), which excludes territories, as were 59,589 respondents who did not answer one or more questions in the fruit and vegetable module, 1,347 with implausible reported values of fruit or vegetable intake (>16 times and >23 times per day, respectively), 54,306 who did not report income, and two who did not report race. The resulting analytic sample included 294,566 (70%) participants. Among states included in the analysis, the median state response rate was 49.4% and ranged from 37.3% to 73.1%.[††]

Previously developed scoring algorithms were used to estimate the percentage of each state's population who met fruit and vegetable intake recommendations. Development of the methodology (*4*) and application of the prediction algorithm have been previously reported.[§§] Twenty-four–hour dietary recall data from 2013–2016 NHANES were used to fit age- and sex-specific logistic regression models that estimate probabilities of meeting recommendations as functions of reported daily frequency of consumption, race/ethnicity, and IPR, adjusting for day-to-day variation (*4*). Consistent with previous studies (*4*,*5*), analyses accounted for the complex survey design and nonresponse, and balanced repeated replication was used to calculate standard errors and 95% CIs with SAS (version 9.4; SAS Institute). T-tests were used to compare differences by sociodemographic groups with Stata (version 17.0; StataCorp). This activity was reviewed by CDC and was conducted consistent with applicable federal law and CDC policy.[¶¶]

In 2019, the median frequency of reported fruit intake was once per day; this was consistent across all jurisdictions (Table 1). The median frequency of reported vegetable intake was 1.6 times per day, ranging from 1.5 times per day in Louisiana, Mississippi, Nevada, and New Mexico to 1.9 times per day in Maine and Vermont. Among all respondents, 12.3% of adults met fruit intake recommendations, ranging from 8.4% in West Virginia to 16.1% in Connecticut, and 10.0% met vegetable intake recommendations, ranging from 5.6% in Kentucky to 16.0% in Vermont.

Fruit intake (Table 2) and vegetable intake (Table 3) varied by sociodemographic characteristics. Overall, a higher proportion of women met both fruit and vegetable recommendations (14.5% and 12.4%, respectively) than did men (10.1% and 7.6%, respectively); a similar pattern was observed across most states. A significantly higher proportion of adults aged ≥51 years (12.5%) met vegetable recommendations compared with younger adults aged 18–30 years (7.1%) and 31–50 years (8.7%). This pattern was also observed in 37 states. A significantly higher proportion of Hispanic adults (16.4%) met

[††] https://www.cdc.gov/brfss/annual_data/2019/pdf/2019-sdqr-508.pdf
[§§] https://www.cdc.gov/nutrition/data-statistics/data-users-guide.html

[¶¶] 45 C.F.R. part 46.102(l)(2), 21 C.F.R. part 56; 42 U.S.C. Sect. 241(d); 5 U.S.C. Sect. 552a; 44 U.S.C. Sect. 3501 et seq.

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TABLE 1. State-specific median frequency of fruit and vegetable intake among adults aged ≥18 years and percentage of respondents meeting federal fruit and vegetable recommendations — Behavioral Risk Factor Surveillance System, 49 states* and District of Columbia, 2019

Jurisdiction	Sample size	Median daily intake frequency		% of respondents (95% CI) meeting recommendations	
		Fruit	Vegetable	Fruit	Vegetable
Overall	**294,566**	**1.0**	**1.6**	**12.3 (11.2–13.3)**	**10.0 (8.8–11.3)**
Alabama	4,990	1.0	1.6	10.3 (8.7–12.0)	6.7 (5.1–8.3)
Alaska	2,138	1.0	1.7	12.2 (9.5–15.0)	11.4 (8.8–14.0)
Arizona	6,149	1.0	1.6	14.8 (12.6–16.9)	12.8 (10.5–15.0)
Arkansas	3,571	1.0	1.6	11.6 (9.6–13.6)	10.8 (8.7–13.0)
California	8,894	1.0	1.6	13.6 (11.9–15.2)	11.3 (9.6–13.0)
Colorado	6,740	1.0	1.7	12.4 (10.7–14.1)	10.4 (8.7–12.2)
Connecticut	6,228	1.0	1.7	16.1 (14.2–18.0)	14.1 (12.1–16.1)
Delaware	2,684	1.0	1.7	13.4 (10.9–15.8)	9.1 (7.0–11.2)
District of Columbia	1,873	1.0	1.8	14.5 (11.8–17.1)	12.8 (10.3–15.3)
Florida	11,389	1.0	1.7	12.4 (10.6–14.2)	10.5 (8.6–12.5)
Georgia	5,017	1.0	1.7	11.2 (9.3–13.1)	8.9 (6.9–10.8)
Hawaii	6,279	1.0	1.6	11.9 (10.2–13.6)	12.2 (10.3–14.1)
Idaho	3,847	1.0	1.7	10.3 (8.5–12.0)	9.7 (7.6–11.7)
Illinois	4,565	1.0	1.6	12.9 (11.1–14.6)	8.9 (7.2–10.7)
Indiana	5,845	1.0	1.6	13.0 (11.3–14.7)	10.5 (8.7–12.3)
Iowa	7,460	1.0	1.6	10.6 (9.1–12.1)	7.3 (5.8–8.8)
Kansas	8,297	1.0	1.7	10.9 (9.5–12.4)	9.8 (8.1–11.4)
Kentucky	4,743	1.0	1.6	8.8 (7.1–10.4)	5.6 (4.1–7.2)
Louisiana	3,324	1.0	1.5	11.2 (9.2–13.2)	7.3 (5.7–8.9)
Maine	7,902	1.0	1.9	11.9 (10.1–13.7)	10.9 (8.9–12.9)
Maryland	12,464	1.0	1.6	13.5 (11.9–15.2)	9.9 (8.2–11.5)
Massachusetts	5,209	1.0	1.7	13.4 (11.6–15.3)	10.5 (8.6–12.3)
Michigan	8,031	1.0	1.6	11.1 (9.5–12.7)	7.2 (5.7–8.8)
Minnesota	11,732	1.0	1.6	12.7 (11.1–14.2)	8.8 (7.2–10.4)
Mississippi	3,651	1.0	1.5	10.5 (8.6–12.5)	7.7 (6.0–9.4)
Missouri	5,299	1.0	1.6	8.7 (7.2–10.2)	7.4 (5.6–9.2)
Montana	5,073	1.0	1.7	10.0 (8.4–11.5)	9.6 (7.8–11.3)
Nebraska	12,557	1.0	1.6	10.7 (9.2–12.1)	8.0 (6.4–9.6)
Nevada	2,086	1.0	1.5	8.6 (6.9–10.3)	7.4 (5.5–9.3)
New Hampshire	4,043	1.0	1.7	12.9 (11.0–14.8)	12.3 (10.2–14.5)
New Mexico	4,638	1.0	1.5	11.5 (9.7–13.3)	9.2 (7.2–11.1)
New York	9,181	1.0	1.7	15.3 (13.5–17.1)	14.2 (12.3–16.0)
North Carolina	2,971	1.0	1.7	11.0 (9.2–12.8)	9.5 (7.6–11.5)
North Dakota	4,394	1.0	1.6	9.8 (8.0–11.7)	7.3 (5.6–9.1)
Ohio	9,616	1.0	1.6	9.5 (8.0–11.0)	7.4 (5.8–9.0)
Oklahoma	3,958	1.0	1.6	8.7 (7.2–10.2)	6.9 (5.2–8.5)
Oregon	4,303	1.0	1.7	12.9 (11.1–14.7)	12.2 (10.3–14.1)
Pennsylvania	5,150	1.0	1.6	10.6 (9.0–12.3)	8.4 (6.7–10.1)
Rhode Island	4,002	1.0	1.7	14.8 (12.6–17.0)	13.4 (11.1–15.8)
South Carolina	5,050	1.0	1.6	11.9 (10.2–13.7)	10.2 (8.4–12.0)
South Dakota	4,762	1.0	1.6	10.3 (8.1–12.5)	7.4 (5.4–9.5)
Tennessee	4,289	1.0	1.7	11.0 (9.2–12.8)	9.2 (7.3–11.1)
Texas	8,260	1.0	1.6	13.8 (11.7–15.8)	11.9 (9.8–14.0)
Utah	9,011	1.0	1.6	11.5 (10.0–13.1)	8.3 (6.8–9.8)
Vermont	4,530	1.0	1.9	15.3 (13.1–17.6)	16.0 (13.6–18.4)
Virginia	7,268	1.0	1.7	12.2 (10.4–13.9)	9.6 (7.9–11.4)
Washington	9,604	1.0	1.7	12.6 (11.0–14.2)	11.9 (10.1–13.7)
West Virginia	4,117	1.0	1.6	8.4 (6.8–9.9)	6.9 (5.3–8.6)
Wisconsin	3,881	1.0	1.6	11.6 (9.7–13.5)	7.6 (5.9–9.3)
Wyoming	3,501	1.0	1.7	9.4 (7.7–11.2)	8.4 (6.4–10.5)

* New Jersey data did not meet the minimum requirements for inclusion in the 2019 aggregate data set and were excluded.

fruit intake recommendations compared with those who were non-Hispanic White overall (11.1%); this pattern was observed in 14 states (Table 2). Overall, a significantly lower proportion of non-Hispanic Black adults (6.9%) met vegetable intake recommendations than did their non-Hispanic White counterparts (10.1%); however, this pattern was statistically significant in only three states (California, Massachusetts, and Nevada). Overall, a significantly higher proportion of adults living in households with the highest income category met vegetable intake recommendations (12.2%) than did adults living in middle income households (7.7%) and with the lowest income categories (6.8%); patterns were similar in most states.

TABLE 2. State-specific percentage of respondents meeting federal fruit intake recommendations, by sex, age, race/ethnicity, and income-to-poverty ratio — Behavioral Risk Factor Surveillance System, 49 states* and District of Columbia, 2019

	% (95% CI)										
	Sex		Age group, yrs			Race/Ethnicity†			IPR		
Jurisdiction	Male	Female (Ref)	18–30	31–50	≥51 (Ref)	Black	Hispanic	White (Ref)	<1.25	1.25–3.49	>3.49 (Ref)
National	**10.1§ (8.5–11.6)**	**14.5 (13.1–15.8)**	**10.2 (7.7–12.6)**	**13.2 (11.4–14.9)**	**12.6 (11.1–14.1)**	**12.9 (11.1–14.7)**	**16.4§ (14.4–18.5)**	**11.1 (10.1–12.2)**	**12.8 (11.2–14.4)**	**10.9§ (9.6–12.3)**	**12.9 (11.5–14.2)**
Alabama	9.2 (6.6–11.7)	11.4 (9.4–13.4)	9.5 (4.9–14.2)	11.9 (9.2–14.6)	9.5 (7.6–11.4)	12.9§ (9.7–16.0)	17.3 (6.2–28.4)	9.1 (7.5–10.7)	12.0 (8.5–15.4)	8.0§ (6.0–10.0)	11.3 (9.1–13.5)
Alaska	9.5§ (6.3–12.7)	15.4 (11.2–19.6)	13.6 (4.6–22.6)	10.9 (7.0–14.8)	12.9 (9.8–15.9)	—¶	—¶	11.2 (8.8–13.6)	16.2 (6.1–26.4)	8.4§ (4.7–12.0)	13.4 (10.1–16.7)
Arizona	12.7 (9.7–15.8)	16.8 (13.9–19.7)	13.8 (8.4–19.2)	15.6 (11.8–19.5)	14.5 (11.9–17.1)	19.3 (10.2–28.4)	17.8 (13.3–22.2)	13.1 (11.0–15.3)	19.6 (13.9–25.4)	11.7 (8.8–14.6)	15.1 (12.4–17.7)
Arkansas	10.7 (7.7–13.7)	12.5 (9.9–15.0)	10.3 (5.1–15.5)	12.0 (8.4–15.6)	12.0 (9.7–14.3)	13.1 (7.8–18.4)	18.6 (9.3–27.9)	10.8 (8.9–12.7)	11.1 (7.5–14.7)	10.5 (7.8–13.2)	12.9 (10.0–15.8)
California	11.3§ (8.9–13.6)	15.8 (13.7–18.0)	9.5§ (6.3–12.8)	15.1 (12.2–18.0)	14.5 (12.2–16.9)	11.2 (7.5–14.8)	16.3§ (13.8–18.8)	12.3 (10.5–14.1)	13.9 (11.3–16.5)	13.4 (10.8–15.9)	13.5 (11.4–15.6)
Colorado	10.7§ (8.2–13.1)	14.1 (11.9–16.3)	9.8 (6.1–13.6)	14.4 (11.3–17.4)	12.0 (9.8–14.1)	12.7 (7.1–18.2)	15.3 (12.0–18.5)	11.6 (9.9–13.4)	10.8 (7.9–13.7)	10.3§ (8.0–12.5)	13.6 (11.5–15.7)
Connecticut	13.6§ (10.9–16.3)	18.6 (15.9–21.2)	15.0 (10.0–20.0)	15.8 (12.5–19.1)	16.7 (14.3–19.2)	15.7 (11.0–20.5)	19.8 (15.0–24.7)	15.7 (13.6–17.8)	17.3 (12.8–21.9)	14.4 (11.5–17.2)	16.6 (14.3–18.9)
Delaware	11.3 (7.6–15.0)	15.2 (12.2–18.2)	10.3 (4.2–16.3)	15.3 (10.7–19.9)	13.2 (10.4–16.1)	15.3 (9.7–21.0)	21.8§ (13.0–30.6)	11.4 (9.1–13.6)	14.0 (9.5–18.5)	13.6 (9.2–17.9)	13.1 (10.3–15.9)
District of Columbia	11.8 (7.7–16.0)	16.9 (13.7–20.0)	7.2§ (2.3–12.0)	17.9 (13.2–22.5)	16.2 (12.6–19.8)	15.0 (11.3–18.8)	15.3 (8.3–22.3)	13.8 (10.4–17.2)	14.8 (8.7–20.9)	14.8 (9.8–19.8)	14.3 (11.3–17.4)
Florida	10.2§ (7.7–12.7)	14.5 (12.1–17.0)	10.8 (6.6–15.0)	13.8 (10.4–17.2)	12.1 (9.7–14.4)	14.5 (9.7–19.2)	15.7§ (11.6–19.8)	10.7 (9.1–12.4)	13.5 (9.8–17.2)	12.3 (9.5–15.1)	12.1 (9.8–14.4)
Georgia	9.6 (6.7–12.6)	12.7 (10.4–14.9)	9.7 (4.8–14.5)	12.8 (9.5–16.0)	10.6 (8.3–12.9)	11.1 (7.9–14.3)	19.6§ (12.6–26.5)	10.0 (8.1–12.0)	12.4 (8.9–15.9)	9.4 (6.7–12.1)	11.8 (9.3–14.3)
Hawaii	9.3§ (7.1–11.6)	14.4 (11.9–16.9)	11.3 (7.2–15.4)	13.0 (9.8–16.1)	11.3 (9.0–13.5)	7.6 (1.9–13.4)	16.7 (12.2–21.1)	13.1 (10.7–15.5)	14.7 (10.7–18.6)	11.6 (8.7–14.4)	11.5 (9.5–13.5)
Idaho	8.2§ (5.7–10.7)	12.3 (9.9–14.8)	8.1 (3.8–12.4)	10.3 (7.4–13.1)	11.4 (8.9–13.9)	—¶	11.8 (6.9–16.6)	10.0 (8.2–11.9)	11.6 (7.5–15.7)	8.5 (6.4–10.7)	11.2 (8.7–13.7)
Illinois	10.1§ (7.6–12.6)	15.5 (13.1–17.8)	10.8 (6.6–15.0)	12.5 (9.7–15.4)	14.1 (11.7–16.6)	13.6 (9.6–17.6)	16.3§ (12.7–20.0)	11.9 (10.0–13.7)	13.7 (10.1–17.4)	11.2 (8.7–13.7)	13.5 (11.3–15.7)
Indiana	11.1§ (8.7–13.6)	14.9 (12.7–17.1)	11.3 (7.3–15.4)	14.3 (11.3–17.2)	12.8 (10.7–14.9)	15.9 (11.4–20.5)	18.7§ (12.9–24.6)	12.3 (10.6–14.0)	13.2 (9.9–16.5)	10.8§ (8.6–12.9)	14.5 (12.2–16.7)
Iowa	7.7§ (5.6–9.7)	13.4 (11.4–15.5)	8.2 (4.5–12.0)	10.8 (8.4–13.2)	11.5 (9.5–13.6)	13.5 (7.0–20.1)	16.7§ (11.8–21.6)	10.1 (8.7–11.6)	9.5 (6.7–12.4)	9.3 (7.3–11.3)	11.4 (9.6–13.2)
Kansas	8.7§ (6.7–10.7)	13.1 (11.1–15.1)	8.5 (5.2–11.8)	12.1 (9.6–14.6)	11.2 (9.3–13.1)	11.9 (7.7–16.2)	13.2 (9.3–17.2)	10.5 (9.1–12.0)	9.6 (6.6–12.5)	9.1§ (7.3–11.0)	12.3 (10.4–14.2)
Kentucky	6.7§ (4.5–9.0)	10.8 (8.5–13.1)	8.1 (3.7–12.5)	8.8 (6.1–11.4)	9.1 (6.8–11.3)	14.2 (6.4–22.0)	17.7§ (8.3–27.1)	8.0 (6.5–9.5)	10.2 (6.2–14.2)	6.6 (4.4–8.9)	9.6 (7.6–11.7)
Louisiana	10.6 (7.5–13.8)	11.8 (9.5–14.0)	10.8 (5.4–16.2)	11.7 (8.5–14.9)	11.0 (8.7–13.4)	13.8§ (9.9–17.6)	18.2 (8.9–27.5)	9.2 (7.4–11.1)	12.7 (9.0–16.5)	9.7 (6.7–12.8)	11.5 (8.9–14.0)
Maine	9.3§ (6.7–11.9)	14.5 (12.0–17.0)	10.3 (4.8–15.7)	12.9 (9.8–16.1)	11.9 (9.8–14.0)	—¶	27.5 (9.9–45.1)	11.7 (10.0–13.5)	8.0§ (5.3–10.7)	9.3§ (6.9–11.6)	14.5 (12.1–17.0)
Maryland	10.8§ (8.4–13.1)	16.1 (13.9–18.3)	12.4 (8.1–16.7)	13.8 (11.1–16.5)	13.8 (11.7–16.0)	13.9 (11.1–16.7)	18.0§ (13.3–22.7)	12.8 (11.1–14.6)	14.3 (10.7–17.8)	11.9 (9.5–14.3)	14.1 (12.1–16.1)
Massachusetts	11.9 (9.2–14.7)	14.9 (12.5–17.3)	10.6 (6.2–15.0)	15.6 (12.2–18.9)	13.1 (10.7–15.5)	12.0 (7.0–17.0)	15.6 (11.2–20.0)	13.5 (11.5–15.4)	12.8 (8.8–16.7)	12.2 (9.4–15.0)	14.0 (11.8–16.2)
Michigan	8.0§ (5.8–10.1)	14.2 (12.0–16.5)	7.8§ (4.2–11.4)	11.5 (8.8–14.2)	12.2 (10.1–14.4)	13.7 (9.8–17.5)	11.0 (6.8–15.1)	10.8 (9.2–12.4)	11.1 (8.0–14.2)	9.2§ (7.2–11.2)	12.1 (10.1–14.1)
Minnesota	9.7§ (7.7–11.8)	15.6 (13.4–17.8)	9.4§ (5.9–12.8)	12.3 (9.8–14.8)	14.3 (12.1–16.6)	13.1 (8.7–17.6)	15.4 (11.1–19.7)	12.6 (11.0–14.1)	14.2 (10.7–17.6)	9.8§ (7.9–11.6)	13.6 (11.8–15.5)
Mississippi	9.2 (6.0–12.5)	11.7 (9.5–13.9)	12.0 (5.6–18.4)	11.2 (8.4–14.0)	9.3 (7.2–11.3)	12.3§ (9.1–15.6)	—¶	8.3 (6.5–10.0)	9.4 (6.6–12.3)	9.7 (7.0–12.5)	11.8 (8.9–14.8)
Missouri	6.6§ (4.5–8.7)	10.7 (8.7–12.8)	6.0 (2.7–9.4)	9.5 (7.0–12.1)	9.3 (7.3–11.3)	11.1 (7.2–14.9)	10.0 (4.1–15.9)	8.2 (6.7–9.6)	8.0 (5.1–10.8)	6.7§ (4.9–8.5)	10.1 (8.1–12.1)
Montana	8.1§ (5.9–10.2)	12.0 (9.8–14.2)	6.2§ (2.8–9.7)	10.9 (8.1–13.7)	11.0 (8.9–13.0)	—¶	12.8 (5.5–20.0)	9.7 (8.2–11.3)	8.7 (5.9–11.4)	8.3§ (6.3–10.4)	11.6 (9.5–13.7)
Nebraska	8.3§ (6.2–10.4)	13.1 (11.1–15.1)	9.2 (5.6–12.9)	10.6 (8.2–13.1)	11.4 (9.4–13.3)	13.5 (7.5–19.5)	14.9§ (11.4–18.4)	10.2 (8.8–11.7)	10.3 (7.7–12.8)	9.3 (7.3–11.2)	11.6 (9.7–13.5)
Nevada	7.6 (5.1–10.1)	9.7 (7.4–12.0)	5.5 (2.1–9.0)	9.8 (6.7–12.9)	8.9 (6.4–11.4)	8.4 (4.0–12.9)	11.7 (7.8–15.5)	8.1 (6.2–10.0)	9.9 (5.7–14.1)	8.2 (5.5–10.9)	8.5 (6.4–10.6)
New Hampshire	10.1§ (7.5–12.7)	15.7 (12.9–18.5)	10.8 (5.4–16.1)	11.7 (8.5–15.0)	14.4 (11.9–16.9)	—¶	—¶	12.8 (10.9–14.7)	8.5§ (5.3–11.7)	12.4 (9.5–15.2)	13.8 (11.4–16.2)

See table footnotes on the next page.

TABLE 2. (*Continued*) State-specific percentage of respondents meeting federal fruit intake recommendations, by sex, age, race/ethnicity, and income-to-poverty ratio — Behavioral Risk Factor Surveillance System, 49 states* and District of Columbia, 2019

	% (95% CI)										
	Sex		Age group, yrs			Race/Ethnicity†			IPR		
Jurisdiction	Male	Female (Ref)	18–30	31–50	≥51 (Ref)	Black	Hispanic	White (Ref)	<1.25	1.25–3.49	>3.49 (Ref)
North Carolina	9.3 (6.6–12.0)	12.7 (10.3–15.0)	10.2 (5.4–15.0)	12.5 (9.3–15.6)	10.2 (8.0–12.5)	10.1 (7.0–13.1)	13.4 (8.7–18.1)	10.8 (8.8–12.8)	8.1§ (5.3–10.9)	10.4 (7.3–13.5)	12.1 (9.9–14.4)
North Dakota	7.3§ (4.9–9.6)	12.8 (10.0–15.5)	8.4 (3.9–12.9)	9.5 (6.5–12.6)	10.9 (8.6–13.2)	—¶	16.5 (6.3–26.8)	9.3 (7.6–11.0)	11.5 (6.1–16.8)	7.0§ (4.9–9.2)	11.0 (8.7–13.3)
Ohio	7.6§ (5.4–9.7)	11.3 (9.4–13.3)	7.6 (3.6–11.6)	10.1 (7.6–12.6)	9.9 (8.1–11.7)	11.0 (7.2–14.7)	20.4§ (10.6–30.2)	8.7 (7.3–10.2)	7.6§ (5.3–10.0)	8.4 (6.4–10.5)	10.8 (8.8–12.8)
Oklahoma	7.0§ (4.8–9.2)	10.2 (8.2–12.2)	8.8 (4.6–13.0)	8.8 (6.3–11.3)	8.5 (6.6–10.4)	8.5 (4.0–12.9)	12.9 (7.6–18.2)	8.3 (6.8–9.9)	7.9 (5.0–10.8)	7.5 (5.4–9.6)	9.8 (7.7–11.9)
Oregon	10.1§ (7.8–12.5)	15.6 (13.1–18.2)	10.4 (6.2–14.6)	13.2 (10.3–16.2)	13.7 (11.1–16.3)	—¶	13.3 (9.2–17.4)	13.3 (11.4–15.2)	11.6 (7.9–15.2)	11.4 (8.9–13.9)	14.1 (11.8–16.4)
Pennsylvania	8.1§ (5.9–10.2)	13.1 (10.8–15.5)	8.3 (4.4–12.3)	12.1 (9.0–15.1)	10.5 (8.4–12.6)	13.7 (9.5–17.8)	15.5 (9.6–21.4)	9.8 (8.2–11.5)	10.4 (6.5–14.3)	8.5§ (6.3–10.6)	11.8 (9.7–13.8)
Rhode Island	12.8 (9.7–16.0)	16.7 (13.8–19.6)	10.9 (5.8–16.1)	16.7 (12.5–20.9)	15.2 (12.6–17.8)	15.5 (8.5–22.6)	16.7 (10.7–22.7)	14.1 (11.9–16.3)	14.6 (10.1–19.0)	12.6 (9.4–15.8)	15.8 (13.0–18.5)
South Carolina	10.3 (7.7–12.9)	13.5 (11.1–15.9)	10.2 (6.0–14.5)	13.5 (10.1–16.9)	11.6 (9.5–13.8)	15.1§ (11.5–18.7)	16.9 (6.6–27.2)	10.4 (8.7–12.1)	12.7 (9.1–16.3)	11.0 (8.2–13.8)	12.3 (10.0–14.5)
South Dakota	8.3 (5.1–11.4)	12.5 (9.5–15.4)	7.6 (2.2–13.0)	10.6 (6.9–14.2)	11.4 (8.5–14.3)	—¶	23.1 (7.5–38.8)	9.7 (7.7–11.8)	12.1 (5.9–18.4)	8.1 (5.2–11.0)	11.3 (8.5–14.1)
Tennessee	9.9 (7.1–12.7)	12.2 (10.0–14.4)	10.1 (5.3–14.9)	10.6 (7.7–13.5)	11.8 (9.5–14.2)	11.6 (7.8–15.4)	15.3 (6.1–24.5)	10.7 (8.8–12.6)	10.5 (7.4–13.5)	9.5 (6.9–12.1)	12.3 (9.7–14.8)
Texas	11.5§ (8.6–14.4)	16.2 (13.4–18.9)	13 (8.1–17.9)	14.5 (11.2–17.8)	13.6 (10.8–16.5)	12.8 (8.1–17.4)	17.5§ (13.7–21.4)	11.0 (9.1–12.9)	15.1 (10.8–19.4)	13.2 (9.7–16.7)	13.7 (11.2–16.2)
Utah	8.5§ (6.4–10.7)	14.6 (12.6–16.7)	8.0§ (4.6–11.3)	12.5 (10.0–15.0)	12.9 (10.7–15.1)	8.6 (1.6–15.6)	15.4§ (11.7–19.1)	10.9 (9.4–12.5)	10.2 (7.0–13.4)	10.1 (8.1–12.2)	12.5 (10.6–14.4)
Vermont	11.5§ (8.6–14.3)	19.1 (15.8–22.3)	10.8 (5.2–16.5)	17.0 (12.8–21.3)	16.0 (13.4–18.7)	—¶	13.9 (3.4–24.5)	15.4 (13.2–17.6)	11.1§ (7.0–15.3)	12.2§ (9.2–15.1)	18.0 (15.0–21.0)
Virginia	9.1§ (6.7–11.5)	15.2 (12.8–17.6)	11.2 (6.5–15.8)	13.0 (10.0–15.9)	12.1 (9.9–14.3)	14.0 (10.6–17.3)	16.6§ (11.6–21.7)	10.9 (9.2–12.6)	11.5 (8.2–14.8)	9.5§ (7.3–11.8)	13.6 (11.3–15.9)
Washington	10.1§ (7.9–12.3)	15.1 (12.9–17.3)	9.7 (6.0–13.3)	13.2 (10.5–16.0)	13.4 (11.2–15.6)	14.2 (8.1–20.4)	16.1 (12.3–19.9)	12.4 (10.8–14.1)	12.0 (8.9–15.2)	11.6 (9.4–13.9)	13.0 (11.1–14.9)
West Virginia	6.1§ (4.2–8.1)	10.6 (8.3–12.9)	8.5 (3.8–13.3)	8.7 (6.0–11.4)	8.0 (6.4–9.7)	13.4 (3.1–23.7)	—¶	8.1 (6.6–9.6)	8.3 (5.4–11.2)	6.9 (5.0–8.9)	9.7 (7.5–12.0)
Wisconsin	7.7§ (5.4–9.9)	15.5 (12.7–18.4)	7.9 (3.3–12.5)	12.2 (8.9–15.5)	12.7 (10.2–15.2)	7.9 (2.3–13.4)	13.5 (6.4–20.6)	11.4 (9.6–13.3)	10.0 (6.0–13.9)	10.8 (7.9–13.6)	12.4 (10.1–14.6)
Wyoming	7.2§ (4.7–9.6)	11.8 (9.4–14.2)	6.8 (2.4–11.2)	9.3 (6.3–12.4)	10.7 (8.4–13.0)	—¶	12.1 (6.4–17.8)	9.0 (7.3–10.7)	8.9 (5.0–12.7)	8.0 (5.7–10.3)	10.4 (8.1–12.7)

Abbreviations: IPR = income-to-poverty ratio; Ref = referent group.
* New Jersey data did not meet the minimum requirements for inclusion in the 2019 aggregate data set and were excluded.
† Black and White persons are non-Hispanic; Hispanic persons could be of any race. Other racial/ethnic groups were not reported because of small sample sizes but were included in overall estimates and estimates by other demographic characteristics.
§ p<0.05 for t-test comparing differences by demographic groups to the Ref.
¶ Sample sizes <50 were considered unstable and were not reported.

Discussion

In 2019, fruit and vegetable intake among U.S. adults remained low, with only approximately one in 10 adults meeting either recommendation; differences were found by state, age, sex, race/ethnicity, and household income. Consistent with previous analyses of BRFSS data (*4*,*5*), a higher percentage of women than men met recommendations for fruit and vegetable intake, and larger disparities were observed in vegetable intake than fruit intake by age groups and household income. Results were also consistent with earlier findings (*5*) that higher percentages of Hispanic than non-Hispanic White adults met fruit intake recommendations while lower percentages of non-Hispanic Black than non-Hispanic White adults met vegetable intake recommendations. In 2015, intake was also low: 12.2% of respondents met fruit intake recommendations and 9.3% met vegetable intake recommendations (*5*); however, direct comparisons between current findings to those of 2015 cannot be made because of changes in methodology.***

Perceived barriers to fruit and vegetable consumption include cost, as well as limited availability and access (*6*–*8*). For some persons, such barriers might have worsened during the COVID-19 pandemic, related to economic and supply chain disruptions that could further limit ability to access healthier foods (*9*). Tailored intervention efforts to increase fruit and

*** https://www.cdc.gov/nutrition/data-statistics/using-the-new-BRFSS-modules.html

TABLE 3. State-specific percentage of respondents meeting federal vegetable intake recommendations, by sex, age, race/ethnicity, and income-to-poverty ratio — Behavioral Risk Factor Surveillance System, 49 states* and District of Columbia, 2019

	% (95% CI)										
	Sex		Age group, yrs			Race/Ethnicity†			IPR		
Jurisdiction	Men	Women (Ref)	18–30	31–50	≥51 (Ref)	Black	Hispanic	White (Ref)	<1.25	1.25–3.49	>3.49 (Ref)
National	**7.6§ (5.8–9.4)**	**12.4 (10.6–14.3)**	**7.1§ (5.0–9.3)**	**8.7 (6.5–10.8)**	**12.5 (10.3–14.6)**	**6.9§ (5.2–8.6)**	**11.0 (9.3–12.6)**	**10.1 (8.4–11.8)**	**6.8§ (5.0–8.5)**	**7.7§ (5.9–9.4)**	**12.2 (10.5–14.0)**
Alabama	5.6 (3.5–7.7)	7.7 (5.6–9.8)	5.3 (3.0–7.5)	6.2 (4.0–8.5)	7.6 (5.4–9.9)	5.0 (1.7–8.3)	10.5 (7.2–13.8)	7.1 (3.8–10.4)	4.4§ (2.0–6.8)	4.3§ (1.9–6.6)	9.4 (7.0–11.7)
Alaska	9.6 (6.1–13.0)	13.5 (10.0–16.9)	10.3 (6.4–14.2)	8.7 (4.8–12.6)	14.6 (10.7–18.4)	—¶	—¶	11.5 (6.9–16.1)	9.5 (6.2–12.8)	9.1 (5.8–12.4)	12.9 (9.6–16.2)
Arizona	10.4§ (7.2–13.5)	15.2 (12.1–18.3)	11.2 (8.0–14.3)	11.6 (8.5–14.8)	14.3 (11.2–17.4)	8.4 (3.9–13.0)	14.5 (9.9–19.0)	12.5 (7.9–17.1)	8.9§ (5.7–12.2)	10.9 (7.7–14.1)	15.2 (11.9–18.4)
Arkansas	9.0 (6.0–12.1)	12.6 (9.5–15.6)	10.6 (7.8–13.4)	9.5 (6.7–12.3)	12.0 (9.2–14.8)	11.2 (0–23.3)	12.1 (0–24.2)	10.4 (0–22.6)	9.6 (6.6–12.6)	9.5 (6.4–12.5)	12.7 (9.7–15.7)
California	7.9§ (5.3–10.5)	14.7 (12.1–17.3)	7.9§ (4.9–10.8)	9.7 (6.7–12.6)	14.7 (11.7–17.6)	6.7§ (3.9–9.5)	10.1 (7.3–12.9)	12.0 (9.1–14.8)	7.3§ (5.0–9.7)	9.7§ (7.3–12.0)	13.6 (11.3–16.0)
Colorado	7.9§ (5.2–10.6)	13.0 (10.3–15.7)	8.1§ (5.1–11.1)	8.7 (5.7–11.7)	13.2 (10.2–16.2)	6.7 (3.0–10.4)	9.5 (5.8–13.2)	10.7 (7.0–14.4)	6.0§ (3.7–8.3)	8.2§ (5.9–10.5)	12.1 (9.8–14.4)
Connecticut	11.0§ (8.0–13.9)	17.2 (14.2–20.1)	10.2§ (7.2–13.2)	11.7 (8.7–14.7)	17.1 (14.2–20.1)	9.7 (5.6–13.7)	13.4 (9.4–17.5)	14.8 (10.7–18.8)	9.7§ (7.1–12.3)	11.0§ (8.4–13.6)	16.2 (13.6–18.8)
Delaware	6.6§ (3.6–9.7)	11.3 (8.3–14.4)	4.2§ (1.0–7.5)	7.9 (4.6–11.2)	11.8 (8.5–15.1)	5.4 (0–12.3)	7.4 (0.6–14.3)	10.0 (3.1–16.9)	4.7§ (1.7–7.8)	5.4§ (2.3–8.5)	11.6 (8.5–14.7)
District of Columbia	10.5 (7.1–14.0)	14.9 (11.5–18.3)	10.6 (6.9–14.2)	12.4 (8.8–16.1)	15.1 (11.4–18.7)	7.9 (1.3–14.4)	12.2 (5.7–18.8)	15.9 (9.4–22.4)	4.7§ (1.4–8.0)	7.8§ (4.5–11.0)	15.8 (12.5–19.1)
Florida	8.1§ (5.3–10.9)	12.9 (10.1–15.7)	8.5 (5.5–11.6)	8.5 (5.4–11.6)	12.5 (9.5–15.6)	8.5 (4.6–12.4)	11.2 (7.3–15.1)	10.7 (6.8–14.6)	7.0§ (3.9–10.1)	7.9§ (4.8–11.0)	13.5 (10.4–16.6)
Georgia	6.4§ (3.7–9.1)	11.2 (8.5–13.9)	7.1 (4.1–10.1)	7.3 (4.4–10.3)	11.0 (8.0–14.0)	7.1 (2.3–11.9)	6.6 (1.7–11.4)	10.0 (5.1–14.8)	6.7 (3.8–9.6)	6.9 (4.0–9.8)	10.7 (7.8–13.7)
Hawaii	9.7§ (6.9–12.6)	14.6 (11.8–17.5)	8.7§ (5.8–11.6)	11.4 (8.5–14.3)	14.0 (11.1–16.9)	9.2 (7.2–11.2)	17.5§ (15.5–19.5)	13.4 (11.4–15.4)	11.2 (8.7–13.7)	9.4§ (6.9–12.0)	13.6 (11.1–16.2)
Idaho	7.4§ (4.5–10.4)	11.9 (9.0–14.9)	6.9§ (3.6–10.2)	7.4§ (4.1–10.7)	12.9 (9.6–16.3)	—¶	11.4 (7.6–15.2)	9.7 (5.9–13.5)	6.8§ (4.0–9.7)	7.4§ (4.6–10.3)	12.1 (9.2–15.0)
Illinois	6.2§ (3.8–8.7)	11.5 (9.0–14.0)	5.6§ (2.8–8.5)	7.7 (4.9–10.6)	11.4 (8.6–14.3)	5.5 (1.9–9.1)	8.6 (5.0–12.2)	9.5 (6.0–13.1)	6.3§ (3.9–8.7)	5.2§ (2.8–7.6)	11.4 (8.9–13.8)
Indiana	8.3§ (5.7–10.9)	12.8 (10.2–15.3)	8.1§ (5.3–10.9)	9.7 (6.9–12.5)	12.4 (9.6–15.1)	6.6 (0.7–12.5)	10.8 (4.9–16.7)	10.8 (4.9–16.7)	8.6§ (5.9–11.2)	7.7§ (5.1–10.4)	13.0 (10.3–15.6)
Iowa	5.0§ (2.7–7.4)	9.6 (7.2–11.9)	5.0§ (2.4–7.5)	5.5§ (3.0–8.1)	9.7 (7.2–12.3)	7.2 (3.7–10.7)	8.5 (4.9–12.0)	7.3 (3.8–10.8)	4.8§ (2.8–6.9)	5.4§ (3.4–7.5)	8.7 (6.7–10.8)
Kansas	7.1§ (4.5–9.6)	12.4 (9.9–15.0)	6.6§ (3.9–9.3)	8.5 (5.8–11.2)	12.3 (9.6–15.0)	5.8 (2.5–9.2)	9.2 (5.9–12.6)	10.0 (6.6–13.3)	6.1§ (3.7–8.4)	8.0§ (5.6–10.3)	11.7 (9.3–14.0)
Kentucky	4.0§ (1.6–6.3)	7.3 (5.0–9.6)	4.0 (1.4–6.6)	4.5 (1.9–7.1)	7.3 (4.7–9.9)	2.2 (0–5.9)	8.1 (4.4–11.8)	5.9 (2.2–9.6)	3.0§ (0.8–5.2)	3.6§ (1.4–5.9)	7.8 (5.5–10.0)
Louisiana	5.9 (3.7–8.1)	8.7 (6.5–10.9)	4.4§ (1.8–7.0)	6.1§ (3.5–8.7)	9.8 (7.2–12.4)	5.0 (0.8–9.3)	11.0 (6.8–15.3)	7.8 (3.6–12.1)	5.0§ (2.5–7.4)	5.3§ (2.9–7.8)	9.6 (7.2–12.1)
Maine	7.8§ (5.1–10.5)	14.0 (11.2–16.7)	8.3§ (5.6–11.1)	9.0§ (6.2–11.7)	13.0 (10.3–15.8)	—¶	18.6§ (14.6–22.6)	10.9 (6.8–14.9)	6.6§ (3.6–9.6)	7.3§ (4.3–10.3)	14.2 (11.2–17.2)
Maryland	6.6§ (4.1–9.2)	12.9 (10.3–15.4)	6.5§ (3.8–9.3)	7.3§ (4.5–10.0)	13.2 (10.5–15.9)	7.5 (3.9–11.1)	12.7 (9.0–16.3)	10.1 (6.5–13.8)	6.2§ (4.0–8.4)	6.8§ (4.6–9.0)	11.8 (9.6–14.0)
Massachusetts	8.1§ (5.3–10.8)	12.7 (10.0–15.4)	6.2§ (3.1–9.2)	8.6§ (5.6–11.6)	13.7 (10.7–16.7)	6.0§ (3.1–8.9)	8.9 (5.9–11.8)	11.1 (8.2–14.0)	5.6§ (3.2–8.0)	6.9§ (4.5–9.3)	12.5 (10.1–14.9)
Michigan	4.9§ (2.5–7.2)	9.6 (7.3–12.0)	4.8§ (2.3–7.3)	5.4§ (2.9–7.9)	9.5 (7.0–12.0)	4.8 (2.1–7.6)	12.7§ (9.9–15.4)	7.2 (4.5–10.0)	4.5§ (2.4–6.7)	5.0§ (2.9–7.2)	9.1 (7.0–11.3)
Minnesota	6.1§ (3.7–8.6)	11.5 (9.1–13.9)	5.7§ (3.0–8.4)	6.8§ (4.1–9.5)	11.7 (9.0–14.4)	5.5 (2.1–9.0)	8.6 (5.1–12.1)	8.8 (5.3–12.3)	6.7§ (4.7–8.8)	5.9§ (3.8–7.9)	10.3 (8.2–12.4)
Mississippi	6.3 (4.0–8.6)	8.9 (6.6–11.2)	4.9§ (2.2–7.5)	7.2 (4.5–9.8)	9.5 (6.8–12.1)	5.8 (1.4–10.2)	—¶	8.9 (4.4–13.3)	3.5§ (0.7–6.2)	6.6§ (3.9–9.4)	10.7 (8.0–13.5)
Missouri	5.5§ (3.0–8.0)	9.3 (6.8–11.8)	4.9§ (2.2–7.6)	6.4 (3.7–9.1)	9.4 (6.6–12.1)	4.5 (0–9.5)	9.2 (4.3–14.2)	7.6 (2.7–12.6)	4.2§ (1.7–6.8)	5.7§ (3.1–8.2)	9.3 (6.8–11.8)
Montana	8.5 (6.0–11.1)	10.6 (8.1–13.2)	7.7 (5.1–10.3)	8.9 (6.3–11.5)	10.7 (8.1–13.4)	—¶	16.6§ (13.4–19.9)	9.5 (6.2–12.7)	7.2§ (4.7–9.8)	7.2§ (4.6–9.7)	12.0 (9.4–14.5)
Nebraska	5.8§ (3.4–8.1)	10.2 (7.9–12.6)	5.9§ (3.4–8.5)	6.2§ (3.6–8.8)	10.3 (7.7–12.9)	5.8 (2.1–9.5)	7.1 (3.4–10.8)	8.1 (4.4–11.8)	5.1§ (2.8–7.4)	5.3§ (3.0–7.6)	10.3 (8.0–12.7)
Nevada	5.6§ (2.8–8.3)	9.5 (6.7–12.2)	5.8 (2.9–8.8)	5.9 (3.0–8.9)	9.4 (6.4–12.3)	5.4§ (3.2–7.5)	6.4 (4.3–8.6)	9.0 (6.8–11.1)	4.2§ (1.5–6.8)	5.5§ (2.9–8.1)	9.5 (6.8–12.1)
New Hampshire	9.6§ (6.4–12.9)	15.1 (11.8–18.3)	10.3§ (7.1–13.5)	9.2§ (6.1–12.4)	15.0 (11.8–18.2)	—¶	—¶	12.0 (7.1–17.0)	6.5§ (3.5–9.4)	8.4§ (5.4–11.3)	14.9 (12.0–17.8)

See table footnotes on the next page.

TABLE 3. (*Continued*) State-specific percentage of respondents meeting federal vegetable intake recommendations, by sex, age, race/ethnicity, and income-to-poverty ratio — Behavioral Risk Factor Surveillance System, 49 states* and District of Columbia, 2019

	% (95% CI)										
	Sex		Age group, yrs			Race/Ethnicity†			IPR		
Jurisdiction	Men	Women (Ref)	18–30	31–50	≥51 (Ref)	Black	Hispanic	White (Ref)	<1.25	1.25–3.49	>3.49 (Ref)
North Carolina	7.6 (4.7–10.5)	11.4 (8.6–14.3)	7.4§ (4.3–10.6)	7.6§ (4.5–10.8)	12.1 (9.0–15.2)	8.0 (4.5–11.6)	7.1 (3.5–10.6)	10.3 (6.7–13.9)	4.8§ (2.0–7.5)	7.0§ (4.2–9.8)	12.2 (9.5–15.0)
North Dakota	5.4§ (2.6–8.2)	9.5 (6.7–12.4)	6.0 (3.3–8.7)	5.5§ (2.8–8.1)	9.6 (6.9–12.3)	—¶	8.6 (3.6–13.7)	6.9 (1.9–12.0)	5.5§ (3.1–7.9)	4.2§ (1.8–6.6)	9.2 (6.8–11.6)
Ohio	5.7§ (3.5–8.0)	9.1 (6.8–11.3)	4.8§ (2.4–7.2)	6.6 (4.2–9.0)	9.2 (6.8–11.6)	5.6 (2.2–9.0)	13.0§ (9.6–16.4)	7.3 (3.9–10.7)	4.5§ (2.1–6.8)	5.4§ (3.1–7.7)	9.7 (7.3–12.0)
Oklahoma	5.7 (3.5–8.0)	7.9 (5.6–10.1)	4.6§ (2.0–7.2)	6.1 (3.5–8.7)	8.5 (5.9–11.1)	5.4 (2.5–8.3)	7.4 (4.5–10.3)	7.0 (4.1–9.9)	3.4§ (0.8–6.0)	4.7§ (2.2–7.3)	9.6 (7.0–12.1)
Oregon	9.4§ (6.5–12.3)	14.9 (12.0–17.9)	9.1§ (6.0–12.2)	10.4§ (7.3–13.5)	14.8 (11.8–17.9)	—¶	8.9 (3.8–13.9)	12.3 (7.2–17.3)	7.7§ (5.1–10.4)	10.0§ (7.4–12.7)	14.4 (11.8–17.1)
Pennsylvania	5.8§ (3.2–8.4)	10.9 (8.3–13.6)	5.4§ (2.7–8.1)	7.1 (4.4–9.7)	10.5 (7.8–13.1)	5.7 (2.3–9.2)	10.6 (7.1–14.0)	8.5 (5.0–11.9)	6.5§ (4.2–8.8)	4.7§ (2.4–7.0)	10.7 (8.4–13.0)
Rhode Island	9.3§ (5.7–13.0)	17.4 (13.7–21.0)	9.9§ (6.9–13.0)	12.0 (8.9–15.1)	15.8 (12.7–18.9)	8.6 (1.4–15.8)	8.7 (1.4–15.9)	13.9 (6.7–21.2)	8.2§ (5.3–11.0)	12.6 (9.7–15.5)	14.9 (12.0–17.8)
South Carolina	8.2§ (5.6–10.8)	12.0 (9.4–14.7)	8.5 (5.8–11.2)	8.3§ (5.5–11.0)	12.3 (9.6–15.0)	7.6 (2.3–13.0)	13.6 (8.2–18.9)	10.6 (5.2–15.9)	6.2§ (3.6–8.8)	7.6§ (5.0–10.3)	12.9 (10.2–15.5)
South Dakota	5.9 (2.9–8.8)	9.1 (6.2–12.1)	4.6§ (1.4–7.9)	6.5 (3.2–9.8)	9.6 (6.3–12.8)	—¶	14.5 (8.9–20.1)	7.0 (1.4–12.6)	7.2 (4.4–9.9)	4.5§ (1.7–7.2)	9.3 (6.5–12.0)
Tennessee	7.6 (4.9–10.2)	10.8 (8.2–13.5)	6.9§ (4.0–9.8)	7.6 (4.7–10.5)	11.4 (8.5–14.3)	5.8 (0.1–11.5)	11.5 (5.8–17.2)	9.6 (3.9–15.3)	6.7§ (3.9–9.5)	6.8§ (4.0–9.5)	11.7 (8.9–14.5)
Texas	10.2 (7.5–12.9)	13.6 (11.0–16.3)	8.8§ (5.2–12.5)	11.3 (7.7–14.9)	14.4 (10.8–18.0)	7.6 (2.8–12.4)	12.7 (7.9–17.5)	12.7 (7.9–17.5)	7.8§ (4.9–10.7)	10.6 (7.7–13.5)	14.1 (11.2–17.0)
Utah	6.3§ (4.0–8.5)	10.4 (8.1–12.7)	5.1§ (2.2–8.1)	7.3§ (4.4–10.2)	11.8 (8.9–14.8)	5.2 (2.1–8.4)	9.0 (5.9–12.2)	8.2 (5.1–11.4)	5.4§ (3.4–7.4)	5.9§ (3.9–8.0)	10.0 (8.0–12.1)
Vermont	10.8§ (7.1–14.5)	21.0 (17.3–24.7)	13.3§ (10.1–16.6)	13.7§ (10.4–17.0)	18.5 (15.2–21.7)	—¶	7.9 (0.6–15.2)	16.2 (8.9–23.5)	11.6§ (8.3–14.8)	12.9§ (9.6–16.2)	18.6 (15.3–21.9)
Virginia	7.1§ (4.4–9.7)	12.1 (9.5–14.8)	5.9§ (2.9–8.9)	8.0§ (5.0–11.0)	12.7 (9.7–15.7)	6.9 (3.8–10.0)	10.5 (7.4–13.6)	10.4 (7.3–13.5)	4.3§ (1.9–6.8)	6.6§ (4.1–9.0)	12.2 (9.8–14.7)
Washington	9.2§ (6.5–11.9)	14.6 (11.9–17.3)	6.7§ (3.8–9.7)	11.1 (8.1–14.0)	14.9 (11.9–17.9)	10.3 (7.3–13.2)	13.5 (10.5–16.4)	11.9 (8.9–14.8)	8.9§ (6.6–11.2)	9.4§ (7.1–11.7)	13.3 (11.0–15.6)
West Virginia	4.9§ (2.5–7.2)	9.0 (6.7–11.4)	3.5§ (1.3–5.7)	4.7§ (2.4–6.9)	7.5 (5.3–9.7)	4.9 (2.0–7.9)	—¶	7.0 (4.0–10.0)	4.8§ (2.2–7.4)	5.1§ (2.5–7.6)	9.7 (7.2–12.3)
Wisconsin	5.0§ (2.5–7.6)	10.1 (7.6–12.7)	5.7§ (3.1–8.2)	7.2 (4.7–9.8)	9.1 (6.6–11.7)	5.5 (1.1–9.9)	8.4 (4.0–12.8)	7.6 (3.2–12.0)	6.0 (3.6–8.5)	5.0§ (2.6–7.5)	9.3 (6.8–11.7)
Wyoming	5.3§ (2.1–8.5)	11.8 (8.6–14.9)	7.8§ (4.9–10.7)	7.6§ (4.7–10.5)	11.0 (8.1–13.9)	—¶	9.0 (3.9–14.1)	8.4 (3.3–13.5)	4.1§ (1.3–7.0)	6.1§ (3.2–8.9)	10.6 (7.7–13.4)

Abbreviations: IPR = income-to-poverty ratio; Ref = referent group.
* New Jersey data did not meet the minimum requirements for inclusion in the 2019 aggregate data set and were excluded.
† Black and White persons are non-Hispanic; Hispanic persons could be of any race. Other racial/ethnic group not reported because of small sample sizes but were included in overall estimates and estimates by other demographic characteristics.
§ p<0.05 for t-test comparing differences by demographic groups to the Ref.
¶ Sample sizes <50 were considered unstable and were not reported.

vegetable intake are needed to reduce age, sex, racial/ethnic, and income disparities in meeting fruit and vegetable intake recommendations among U.S. adults. States and communities can take actions by supporting food policy councils (community-based coalitions often supporting a specific community such as households with incomes below the federal poverty level or persons from racial and ethnic minority groups) to build a more sustainable food system,††† supporting community retail programs to attract grocery stores and supermarkets to underserved communities to improve community food quality§§§ and increase healthy food access, promoting participation in federal nutrition assistance programs,¶¶¶ and implementing nutrition incentive and produce prescription programs**** that provide resources for persons to purchase fruits and vegetables. Additional efforts might include the use of nutrition standards, organizational food service guidelines,†††† and farm-to-institution approaches to ensure that culturally preferred fruit and vegetable offerings are available in work sites, hospitals, park and recreation centers, food banks and pantries, restaurants, and other locations (*10*). Education and social marketing can also help to ensure awareness of the recommended amounts of

††† https://www.foodpolicynetworks.org/
§§§ https://www.cdc.gov/nccdphp/dnpao/state-local-programs/healthier-food-retail.html
¶¶¶ https://www.nal.usda.gov/legacy/fnic/usda-nutrition-assistance-programs
**** https://www.nutritionincentivehub.org/
†††† https://www.cdc.gov/nutrition/healthy-food-environments/food-serv-guide.html

Summary

What is already known about this topic?

The percentage of U.S. adults meeting fruit and vegetable intake recommendations is low.

What is added by this report?

In 2019, 12.3% and 10.0% of surveyed adults met fruit and vegetable intake recommendations, respectively. Meeting fruit intake recommendations was highest among Hispanic adults (16.4%) and lowest among males (10.1%). Meeting vegetable intake recommendations was highest among adults aged ≥51 years (12.5%) and lowest among adults with low income (6.8%).

What are the implications for public health practice?

States can use this information to tailor efforts to populations at high risk (e.g., men, young adults, and adults with lower income) and to implement enhanced interventions, policies, and programs that help persons increase fruit and vegetable consumption to support immune function and prevent chronic diseases.

fruits and vegetables to consume and how to incorporate fruits and vegetables into meals and snacks.[§§§§] Finally, conditions in which persons are born, live, learn, work, play, worship, and age, known as social determinants of health, affect health and influence the opportunities available to practice healthy behaviors. Ensuring that all persons, at all times, have physical, social, and economic access to enough foods, including fruits and vegetables that are safe, high quality, and meet their dietary needs and food preferences, requires multisectoral and multilevel collaboration.[¶¶¶¶]

The findings of this report are subject to at least five limitations. First, self-reported dietary behaviors are subject to recall and social desirability biases whereby different demographic groups might overestimate and others underestimate dietary intake.[*****] Second, BRFSS includes only noninstitutionalized adults; therefore, findings cannot be generalized to the entire U.S. adult population. In addition, U.S. territories were excluded because of the NHANES scoring algorithm. Third, using the algorithms to estimate intake might have resulted in measurement error. However, previous analyses showed that applying prediction equations to BRFSS frequency data yielded estimates comparable with national estimates that used more accurate 24-hour recalls (*4*). Fourth, 14% (59,589) of participants had missing fruit and vegetable data, and these respondents tended to be older and have a lower income. However, the percentage of missing data on fruit and vegetable and respondent characteristics are similar to that in previous studies (*4*,*5*). Finally, 16% (54,306) of participants had missing income data, but the estimated percentage of persons meeting recommendations was similar when missing income was imputed based on age, sex, and race/ethnicity.

Too few U.S. residents consume the recommended amounts of fruits and vegetables. Following a dietary pattern that includes sufficient fruits and vegetables can help protect against some chronic conditions that are among the leading causes of mortality in the United States (*2*); some of these conditions are also associated with more severe illness from COVID-19 (*3*). For most states, the BRFSS module is the only source of uniform, state-level dietary data for adults, and this information often provides critical metrics for state chronic disease plans. States can use the findings to guide their programs, communications and social marketing, and policies to support improving fruit and vegetable access and intake. Continued efforts to increase fruit and vegetable consumption by improving access and affordability in diverse community and institutional settings will help mitigate health disparities among U.S. residents.

Acknowledgments

Survey participants, state BRFSS coordinators.

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§§§§ https://www.myplate.gov/eat-healthy/what-is-myplate
¶¶¶¶ https://www.cdc.gov/chronicdisease/programs-impact/sdoh.htm
***** https://dietassessmentprimer.cancer.gov/concepts/

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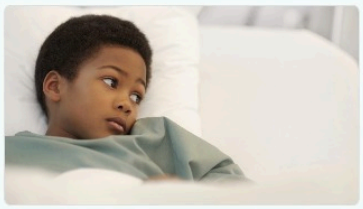
An official website of the United States government Here's how you know

Estimates: Burden of Foodborne Illness in the United States

Public Health
MARCH 19, 2025

WHAT TO KNOW

- Foodborne illness estimates can serve as a foundation for future public health action.
- CDC estimated the average number of U.S. foodborne illnesses, hospitalizations, and deaths in 2019 caused by seven major pathogens.
- Six of these pathogens caused 9.9 million domestically acquired foodborne illnesses.
- Illnesses caused by all seven pathogens resulted in 53,300 hospitalizations and 931 deaths.



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Why do we estimate?

Knowing how many foodborne illnesses occur – or the burden of disease – provides us with a better understanding of an important public health problem.

Surveillance systems and surveys provide vital information about the burden of foodborne illness in the United States, but they do not capture *every* illness.

Because only a fraction of illnesses is diagnosed and reported, we need periodic assessments of the total burden of illness to set public health goals, allocate resources, and measure the economic impact of disease.

We use the best data available and make reasonable adjustments – based on surveys, study results, and statistical methods – to account for shortcomings and missing pieces of information.

What did we estimate?

Read the full report

Foodborne illness acquired in the United States—Major pathogens, 2019

CDC estimated the average number of U.S. foodborne illnesses, hospitalizations, and deaths in 2019 caused by seven major pathogens: *Campylobacter spp.*, *Clostridium perfringens*, invasive *Listeria monocytogenes*, norovirus, nontyphoidal *Salmonella*, Shiga toxin-producing *Escherichia coli* (STEC), and *Toxoplasma gondii*. These are some of our findings.

Main findings

Illnesses

9.9 million

The major pathogens, excluding *Toxoplasma gondii*, caused an estimated 9.9 million domestically acquired foodborne

53,300 hospitalizations	An estimated 53,300 hospitalizations resulted from domestically acquired foodborne illnesses caused by the seven pathogens.
931 deaths	An estimated 931 deaths resulted from domestically acquired foodborne illnesses caused by the seven pathogens.

Top 5 contributors

Illnesses	Norovirus, *Campylobacter*, *Salmonella*, *C. perfringens*, and STEC caused the most illnesses.
Hospitalizations	Norovirus, *Campylobacter*, *Salmonella*, STEC, and *Listeria* caused the most hospitalizations.
Deaths	*Salmonella*, *Campylobacter*, norovirus, *Listeria*, and STEC caused the most deaths.

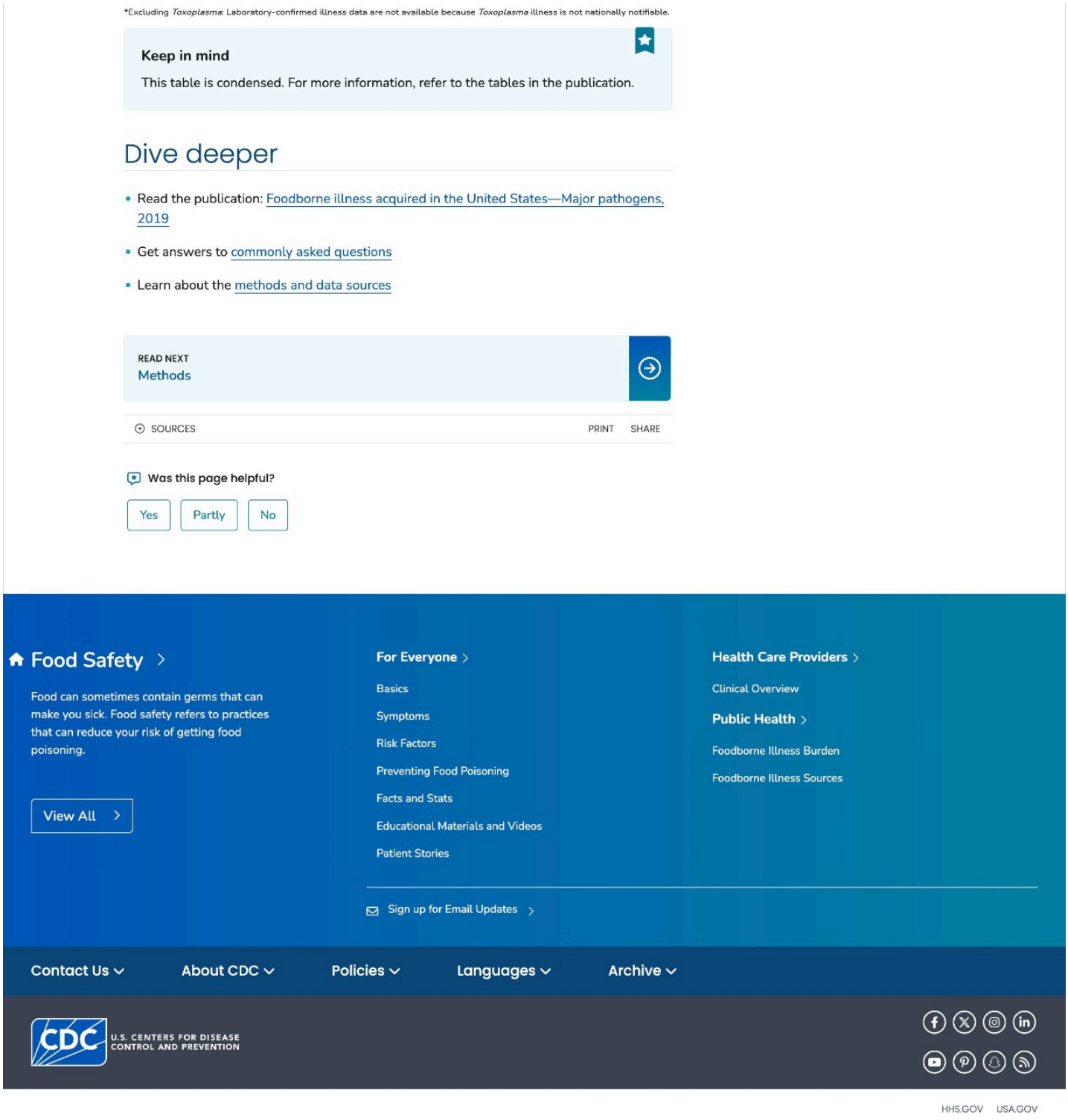
Other findings

- Norovirus was the leading cause of domestically acquired foodborne illnesses (5.5 million) and hospitalizations from these illnesses (22,400).
- *Salmonella* was the leading cause of domestically acquired foodborne illnesses resulting in death (238).
- The top five *Salmonella* serotypes causing foodborne illnesses were Enteritidis (23% of *Salmonella* infections), Newport (14%), Typhimurium (11%), I 4,[5],12:i- (7%), and Javiana (7%). These five *Salmonella* serotypes, in order from highest to lowest, also caused the most hospitalizations.
- Non-O157 serogroups caused 76% of STEC illnesses compared with 24% caused by O157 serotypes.
- Invasive *Listeria* caused 1,050 non-pregnancy-associated illnesses and 198 pregnancy-associated illnesses.

At a glance

Estimated annual number of foodborne illnesses, hospitalizations, and deaths caused by seven major pathogens, United States, circa 2019

Pathogen	Illnesses	Hospitalizations	Deaths
Campylobacter spp.	1,870,000	13,000	197
C. perfringens	889,000	338	41
Listeria	1,250	1,070	172
Norovirus	5,540,000	22,400	174
Salmonella	1,280,000	12,500	238
STEC	357,000	3,150	66
Toxoplasma	NA	848	44
Total	**9.9 million***	**53,300**	**931**


*Excluding Toxoplasma: Laboratory-confirmed illness data are not available because Toxoplasma illness is not nationally notifiable.
Keep in mind
This table is condensed. For more information, refer to the tables in the publication.
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US fresh produce sector sees return to pre-pandemic levels, but still comes up short in workforce

foodingredientsfirst.com/news/us-fresh-produce-sector-sees-return-to-pre-pandemic-operational-capacities-but-still-comes-up-short.html

Benjamin Ferrer

26 Sep 2022 --- A new report of the US fresh produce industry flags that while the sector is gradually returning to its pre-COVID-19 employment and wages levels, it still delayed in its reform – which is forecasted to continue to weigh down the national food chain.

The Economic Impact of the U.S. Fresh Produce and Floral Supply Industry, compiled by Jack Kleinhenz of Kleinhenz & Associates, marks the first time the trade organization representing the entire fresh produce and floral supply chain has conducted a comprehensive study of its role in US jobs, taxes and wages.

“The produce industry, despite being a reliable and profitable employer in every state, is seeing a decline in the number of available, skilled workers,” says Cathy Burns, CEO of IFPA.

“This report shows the impact of delayed labor reform on the workforce, which will continue to impact consumers at foodservice and in grocery stores,” she explains.

“This study, the first of its kind, highlights our vital role and affirms our commitment to making sure we continue this critical mission, supplying insights into our industry as Congress prepares to reauthorize the Farm Bill.”

The analysis highlights that the sector plays a significant economic role in each state, adding US$339.4 billion to the national output in 2022. In addition, federal, state, and local taxes generated by the industry and the spin-off industry sales their activity generates, total US$43.7 billion per year.

The US fresh produce industry had 1.13 million workers in 2021 and is tracking to reach pre-pandemic levels this year.Labor market impact

The US fresh produce industry supports 2.2 million total jobs across all 50 states and US$120.1 billion in labor income, nearly reaching pre-COVID levels, highlights the economic impact study conducted on behalf of the International Fresh Produce Association.

The industry had 1.13 million workers in 2021 and is tracking to reach pre-pandemic levels this year.

Nearly 1.2 million jobs are directly tied to the industry’s 2022 operations. The absolute number of employees involved in the fresh produce supply industry declined by 4% from 1.18 million workers in 2017 as a result of a COVID-related slowdown.

This drop mirrored circumstances across international labor markets, which looked to alternative pathways, such as the UK , to plug gaps.

The industry's economic impact reaches all 50 states and the District of Columbia to varying degrees depending on factors such as each state's industry mix, wage structure, spending and saving patterns and connections to other economies.

Twenty-nine US states have more than 10,000 jobs attributable to the industry; only ten states have less than 4,000.

Support for the industry is critical

The fresh food sector encompasses a diverse range of activities and products that extends beyond farmers and producers, including marketing and distribution, retail and food services.

California leads the way, representing 404,468 workers, or 35 percent of the industry's employment. Washington follows with 99,320 and Florida with 82,013 workers.

Examining total employment in detail shows over 600,000 jobs, or 54% of the industry, are workers in the production sector. Wholesale and retail employment, which includes a variety of fresh fruit and floral operations, reached 434,000 and accounts for 38% of the industry.

“Support for the industry has never been more important,” Burns adds. “The treatment for the four most prevalent diet-related diseases adds US$1.4 trillion dollars to the US national debt each year.”

IFPA will be participating in the scheduled for next week, which will spotlight policy proposals including increased resources to the US Food and Drug Administration (FDA), tax incentives to industry and improved nutrition education.

“In order to maintain year-round access to fresh fruits and vegetables at a cost that is affordable for consumers, we must find workers to scale the labor force at all points along the supply chain,” Burns stresses.

Earlier this month, mounting global concerns about food shortages – alongside ballooning fertilizer and energy prices and the ongoing conflict in Ukraine – prompted the US Department of Agriculture to into seven international farming and trade development projects on four continents.

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U.S. DEPARTMENT OF AGRICULTURE

Economic Research Service

Economic Research Report Number 325

October 2023

Household Food Security in the United States in 2022

Matthew P. Rabbitt
Laura J. Hales
Michael P. Burke
Alisha Coleman-Jensen

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Household Food Security in the United States in 2022

Matthew P. Rabbitt, Laura J. Hales, Michael P. Burke, and Alisha Coleman-Jensen

Economic Research Service

Economic Research Report Number 325

October 2023

Abstract

This report provides statistics on food security in U.S. households throughout 2022 based on the Current Population Survey Food Security Supplement data collected by the U.S. Department of Commerce, Bureau of the Census, in December 2022. An estimated 87.2 percent of U.S. households were food secure throughout the entire year in 2022, with access at all times to enough food for an active, healthy life for all household members. The remaining households (12.8 percent, statistically significantly higher than the 10.2 percent in 2021 and the 10.5 percent in 2020) were food insecure at least some time during the year, including 5.1 percent with very low food security (statistically significantly higher than the 3.8 percent in 2021 and the 3.9 percent in 2020). Very low food security is the more severe range of food insecurity where one or more household members experience reduced food intake and disrupted eating patterns at times during the year because of limited money and other resources for obtaining food. Children and adults were food insecure at times during 2022 in 8.8 percent of U.S. households with children, up from 6.2 percent in 2021 and 7.6 percent in 2020. In 2022, very low food security among children was 1.0 percent, statistically significantly higher than the 0.7 percent in 2021. From 2021 to 2022, there were statistically significant increases in food insecurity and very low food security for nearly all subgroups of households described in this report. In 2022, the typical food-secure household spent 15 percent more on food than the typical food-insecure household of the same size and household composition. About 55 percent of food-insecure households participated in one or more of the three largest Federal nutrition assistance programs from the U.S. Department of Agriculture: the Supplemental Nutrition Assistance Program (SNAP); the Special Supplemental Nutrition Program for Women, Infants, and Children (WIC); and the National School Lunch Program during the month prior to the 2022 survey.

Keywords: food security, food insecurity, food sufficiency, food insufficiency, food spending, food pantry, soup kitchen, emergency kitchen, free groceries, free meal, material well-being, material hardship, Supplemental Nutrition Assistance Program, SNAP, National School Lunch Program, Special Supplemental Nutrition Program for Women, Infants, and Children, WIC

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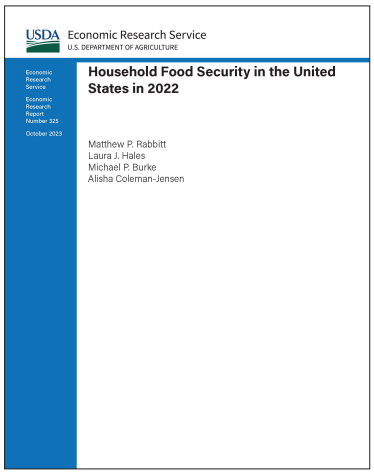
A report summary from the Economic Research Service October 2023

Household Food Security in the United States in 2022

Matthew P. Rabbitt, Laura J. Hales, Michael P. Burke, and Alisha Coleman-Jensen

What Is the Issue?



Most U.S. households have consistent, dependable access to enough food for active, healthy living—they are food secure. However, some households experience food insecurity at times during the year, meaning their ability to acquire adequate food is limited by a lack of money and other resources. The U.S. Department of Agriculture's (USDA) food and nutrition assistance programs aim to increase food security by providing low-income households access to food for a healthful diet, as well as nutrition education. USDA monitors the extent and severity of food insecurity in U.S. households through an annual, nationally representative survey sponsored and analyzed by USDA's Economic Research Service (ERS). This report presents statistics from the survey that cover household food security, food expenditures, and the use of Federal food and nutrition assistance programs in 2022. The prevalence of food insecurity is determined by many factors, including household circumstances, the economy, and Federal, State, and local policies. This report does not provide an analysis of the factors that determine the prevalence or trends in food insecurity.

What Did the Study Find?

- In 2022, 87.2 percent of U.S. households were food secure. The remaining 12.8 percent (17.0 million households) were food insecure. Food-insecure households (those with low and very low food security) had difficulty at some time during the year providing enough food for all their members because of a lack of resources. The 2022 prevalence of food insecurity was statistically significantly higher than the 10.2 percent recorded in 2021 (13.5 million households) and the 10.5 percent in 2020 (13.8 million households).
- In 2022, 5.1 percent of U.S. households (6.8 million households) had very low food security, statistically significantly higher than the 3.8 percent (5.1 million households) in 2021 and the 3.9 percent (5.1 million households) in 2020. In this more severe range of food insecurity, the food intake of some household members was reduced, and normal eating patterns were disrupted at times during the year because of limited resources.

Findings for households with children:

- Children were food insecure at times during 2022 in 8.8 percent of U.S. households with children (3.3 million households), up from both 6.2 percent (2.3 million households) in 2021 and 7.6 percent (2.9 million households) in 2020. These households with food insecurity among children were unable at times to provide adequate, nutritious food for their children.

- Children are usually shielded from the disrupted eating patterns and reduced food intake that characterize very low food security. However, in 2022, children, along with adults, suffered instances of very low food security in 1.0 percent of households with children (381,000 households), statistically significantly higher than the 0.7 percent (274,000 households) in 2021. These households with very low food security among children reported that children were hungry, skipped a meal, or did not eat for a whole day because there was not enough money for food.

Findings for population subgroups that experienced significant changes in food insecurity:

- The prevalence of both food insecurity and very low food security increased from 2021 to 2022 for nearly all subgroups of households described in this report.

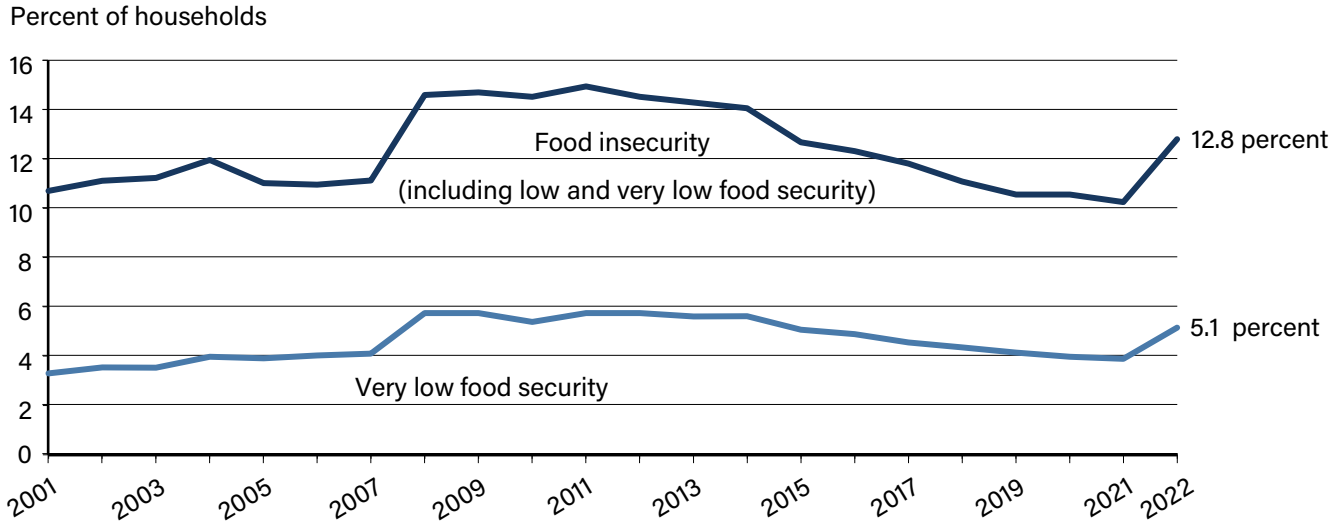
Findings for food spending and Federal nutrition assistance participation:

- The typical (median) food-secure household spent 15 percent more on food than the typical food-insecure household of the same size and composition. These estimates include food purchases made with Supplemental Nutrition Assistance Program (SNAP) benefits.
- About 55 percent of food-insecure households in the survey reported that in the previous month, they participated in one or more of the three largest Federal nutrition assistance programs: SNAP; the Special Supplemental Nutrition Program for Women, Infants, and Children (WIC); and the National School Lunch Program.

How Was the Study Conducted?

Data for the USDA, ERS food security reports come from an annual survey conducted by the U.S. Department of Commerce, Bureau of the Census as the December supplement to the monthly Current Population Survey. USDA, ERS sponsors the annual Food Security Supplement and compiles and analyzes the responses. The 2022 Food Security Supplement survey included 31,948 households, which comprise a representative sample of the U.S. civilian population of about 133 million households. The food security survey asked one adult respondent per household about experiences and behaviors that indicate food insecurity during calendar year 2022, such as being unable to afford balanced meals, cutting the size of meals, or being hungry because of too little money for food. The food security status of the household was assigned based on the number of food-insecure conditions reported.

Prevalence of food insecurity in 2022 increased from 2021



Source: USDA, Economic Reserach Service using data from U.S. Department of Commerce, Bureau of the Census, Current Population Survey Food Security Supplement.

NCEZID: Foodborne Disease (Food Poisoning)

archive.cdc.gov/www_cdc_gov/ncezid/what-we-do/our-topics/foodborne-disease.html



Related Resources

- Mobile App – Can I Eat This?
- Food Safety Graphics
- Food Safety Medscape Commentaries
- Food Safety Videos
- Foodborne Disease Blogs

CDC estimates that each year roughly 48 million people (1 in 6) gets sick from a foodborne illness, 128,000 are hospitalized, and 3,000 die. Many different disease-causing germs (such as bacteria, viruses, and parasites), chemicals, and other agents can contaminate foods, so there are many different foodborne infections.

Germs that cause the most foodborne illness

According to CDC estimates, the most common foodborne illnesses are caused by norovirus, *Salmonella*, *Clostridium perfringens*, *Campylobacter*, and *Staphylococcus aureus.*

Foods are commonly linked to illness

- Raw foods of animal origin are the most likely to be contaminated, specifically raw or undercooked meat and poultry, raw or lightly cooked eggs, unpasteurized (raw) milk, and raw shellfish.
- Fruits and vegetables can also be contaminated.
- While certain foods are more likely to make you sick, any food can get contaminated in the field, during processing, or during other stages in the food production chain, such as through cross-contamination with raw meat in kitchens, or from a foodhandler's hands.

What we're doing

CDC provides the vital link between illness in people and the food safety systems of government agencies and food producers. We take action by:

- **Collaborating** at the federal level with the S. Food and Drug Administration and the U.S. Department of Agriculture's Food Safety and Inspection Service. We collaborate with state and local health departments, as well as the food industry.
- Managing the DNA fingerprinting network for foodborne illness-causing bacteria in all states to detect outbreaks.

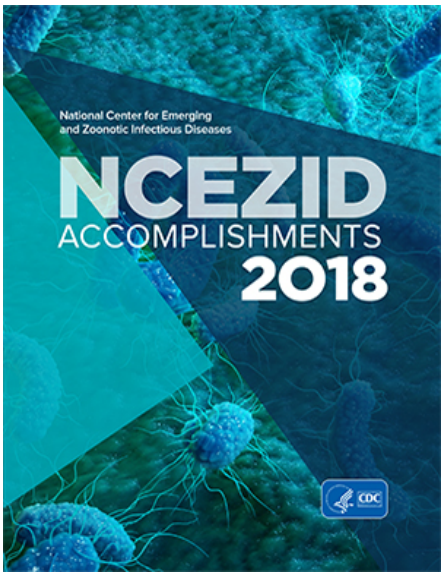
- **Tracking** the occurrence of foodborne illnesses.
- Facilitating and leading outbreak investigations.
- **Using whole genome sequencing** to connect illnesses by showing which bacteria making people sick are most alike genetically.
- **Analyzing** epidemiological data to connect illnesses to specific foods and settings.
- Targeting **prevention measures** to reduce illness and death
- **Providing data and analyses** to inform food safety action and policy.

Stories on Foodborne Illness

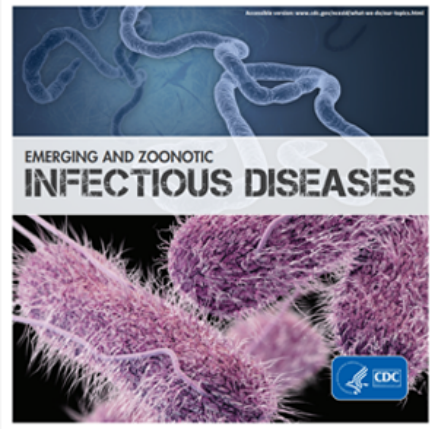
- Protecting Children - Early Clues Help Quickly Solve Outbreak of *E. coli* Infections
- Community Discussions Key to Solving *E. coli* Outbreak
- Quick response to botulism outbreak saves lives

Accomplishments & Innovations

Find more information on accomplishments and innovations in Foodborne Infections in these publications.



NCEZID Accomplishments 2018



Emerging and Zoonotic Infectious Diseases



Innovations to Stop Emerging and Zoonotic Infections

CHAPTER 1

Introduction

Increases in rates of obesity and related chronic diseases that may be linked with poor diets, such as diabetes and heart disease, are major public health concerns. Some advocates, community leaders, and researchers are worried that these problems, and poor diets in general, may be more severe in certain poor and rural American communities because these areas have limited access to affordable and nutritious foods. A primary concern is that some poor or rural areas do not have access to supermarkets, grocery stores, or other food retailers that offer the large variety of foods needed for a healthy diet (for example, fresh fruits and vegetables, whole grains, fresh dairy and meat products). Instead, individuals in these areas may be more reliant on food retailers or fast food restaurants that only offer more limited varieties of foods. It is hypothesized that the relative lack of access to full-service grocery stores and the easier access to fast and convenience foods may be linked to poor diets and, ultimately, to obesity and other diet-related diseases.

It was this concern that led Congress, in the Food, Conservation, and Energy Act of 2008, (hereafter referred to as the 2008 Farm Bill) to direct the U.S. Department of Agriculture (USDA) to conduct a 1-year study of areas with limited access to affordable and nutritious food. The 2008 Farm Bill directed USDA to assess the extent of the problem of limited access, identify characteristics and causes of limited access and the effects limited access has on local populations, and outline recommendations for addressing the causes and effects of limited access. The USDA study was conducted by a team of researchers, policy analysts, and program leaders from USDA's Food and Nutrition Service (FNS), Cooperative State Research, Education, and Extension Service (CSREES), and the Economic Research Service (ERS), which served as the lead agency. This report provides the analysis and findings of the USDA study. A number of information-gathering and data-analysis activities were conducted as part of the study. Each of these activities and their purposes is described later in this introduction.[1]

Definitions, Concepts, and Background Literature

TThe language in the 2008 Farm Bill defined a food desert as an "area in the United States with limited access to affordable and nutritious food, particularly such an area composed of predominantly lower income neighborhoods and communities" (Title VI, Sec. 7527). In order to consider the extent of such areas, the following questions first need to be answered:

- What is affordable food and nutritious food?
- What does it mean to have (or not have) access to such food?
- Do individuals or do areas lack access?

The concern over food deserts is that some consumers have difficulty accessing food retailers that offer affordable and nutritious food.[2] The ease or difficulty in getting to a food retailer depends on the location of the store in relationship to the consumer and the consumer's travel patterns, the

[1]One additional activity that is not further described in this report is the Workshop on Access to Affordable and Nutritious Foods: Understanding Food Deserts held on October 9, 2008, in Washington, DC. An agenda for this workshop is included in appendix A.

[2]We note that this study focuses on the ease at which households and individuals can get to stores that sell the foods they want at affordable prices. We do not focus on the related concept of food security, which measures whether households or individuals have access to enough food for an active, healthy life. The concepts are clearly related, but, in general, food security measures focus less on physical access and more on whether a household can afford food. For example, some individuals or households may have low food security but may live only one block from a large supermarket, so that physical access to food is less of a problem than whether the family can afford to buy the food.

consumer's individual characteristics (e.g., income, car ownership, disability status), and neighborhood characteristics (e.g., the availability of public transportation, availability of sidewalks, and crime patterns in the area). Before considering how many people and places may be affected by limited access to affordable and nutritious food, one must first determine what is meant by "nutritious food" and "affordable," and how access to affordable and nutritious foods can be measured.

It may be easy to identify some foods as highly *nutritious* and others as much less nutritious, but the nutrition levels of most foods fall somewhere in between. Those foods that may be easily identified as highly nutritious are available in different forms (fresh, frozen, canned, in prepared sauces or dishes). They can also be purchased at many food outlets, including those that many consider lacking in nutritious foods, such as fast food restaurants. It is likely that even the smallest food retailers stock foods that have nutritional merits; however, it is also likely that some retailers may offer very few of these options. No one food can fulfill the recommendations for a healthy diet. So measuring what "nutritious" food is and where it can be found must necessarily encompass a broad array of foods and sources of foods.

Affordability of food refers to the price of a particular food and the relative price of alternative or substitute foods. Affordability of food is also impacted by the budget constraints faced by consumers, who must consider not only the prices of different foods to meet their food needs, but also the prices of other necessities (e.g., housing, clothing, and transportation). USDA provides guidance on national standards for nutritious diets at various costs levels—the Thrifty, Low-cost, Moderate-cost and Liberal Food Plans (Carlson et al., 2007a; Carlson et al., 2007b). Within each plan is a market basket of foods in quantities that reflect current dietary recommendations, food composition data, food prices, and actual consumption patterns. According to the Low-cost Food Plan, a family of four with two adults (age 19 to 50) and two children (ages 6 to 8 and 9 to 11) could consume a nutritious diet for $175.60 per week (USDA, 2009).

In addition to considering food prices, consumers also consider travel and time costs in deciding where to shop and what to buy. There are also monetary and time costs in preparing and serving food, as well as cleaning up. The time costs of these activities may affect consumer decisions about whether to shop for and prepare a home-cooked meal, buy products that require less preparation time, or eat a meal prepared by a restaurant.

Measuring access to affordable and nutritious food is an enormous data collection task that requires information on all the food retailers in a neighborhood or within the reach of the consumer, the types and prices of food sold in these stores, and a measure of the quality of the food. Many studies approximate the availability of these foods and a wide range of other foods by using the existence of supermarkets and grocery stores, arguing that these stores are known to carry a variety of foods and have many options for "nutritious foods," such as fresh, frozen, and canned, and carry them at the lowest prices. But focusing only on supermarkets and larger grocery stores is likely to underestimate the availability of healthy foods since some of these foods are also available at small grocery stores, convenience stores,

pharmacies, dollar stores, farmers' markets, and restaurants. There is also some evidence of substitutability in stores—that is, areas without large chain supermarkets are often served with independent, and often smaller, grocery stores (Neckerman et al., 2009; Powell, 2009). These smaller stores may have adequate and affordable food choices, so that in ignoring them, researchers may underestimate the food that is available in those areas.

The limitations of considering only supermarkets and large grocery stores in measuring the availability of food are well recognized in the literature on food access. This has led to more localized studies that collect an extensive amount of data on the food environment. Some studies collect additional information about the locations of food retailers other than supermarkets, such as farmers' markets, meat markets, bakeries, or veggie carts (see, for example, Neckerman et al., 2009). Other studies actually measure a store's contents to see if "healthy foods" are sold, how much shelf space is dedicated to them, and in which forms they are sold (e.g., fresh, frozen, or canned; low-fat or regular) (see, for example, Rose et al., 2009; Sharkey and Horel, 2009). Standardized tools for conducting such studies have also been developed and tested, such as the Nutrition Environment Measures Survey (NEMS) (http://www.sph.emory.edu/NEMS/.) Such extensive data collections have been conducted on more localized levels, for example, in New Orleans, New York City, and six rural counties in Texas. But because these efforts require such intensive data collection and resources, they are not easily conducted on a national level.

Studies of food access have also measured the availability and prices of foods in USDA's Thrifty Food Plan (TFP) in stores as a standardized way to compare availability and affordability of foods in geographic areas (for example, Block and Kouba, 2005; Hendrickson et al., 2006; Mantovani et al., 1997; Rose et al., 2009). Such uses of the TFP provide an absolute measure of availability and price (as opposed to a relative measure) and allow aggregation across store types (Bitler and Haider, 2009).

Once the availability and price of food has been measured, studies of food access typically then measure how easy it is for consumers to access the food. The ease or difficulty of food access has been measured many ways.[4] One common method is to measure distance from consumers' residences to the nearest food retailer that offers healthy and affordable foods (often to supermarkets or large grocery stores).[5] Distances in sparsely populated areas are often not directly comparable to distance in densely populated areas. As a result, many studies consider access in rural areas separately from access in suburban and urban areas. "Walkable" distance measures have often been used to characterize access in urban areas. The definition of such a distance is often 1 kilometer or about a half mile (app. table B.1). Similar concepts for less densely populated suburban and rural areas have not been applied, but often a distance is designated to distinguish access limitations. For example, areas more than 10 miles from a supermarket have been called food deserts (Blanchard and Lyson, 2006; Morton and Blanchard, 2007). These designations of what may be considered an "acceptable" distance to a food source in less densely populated areas are somewhat arbitrary, especially considering that without a car, any distance of more than a mile or so could be considered unacceptably far.

[4]Appendix table B.1 summarizes the measures of access to health foods used by over 30 studies. Figure B.1 shows the locations of these studies.

[5]Distance is usually measured from the centroid of an area (e.g., ZIP Code, census tract, or block) to the nearest supermarket.

Distance is almost always measured as distance from a residential area to a store, assuming home to store travel is the way most people access supermarkets. But people do not just travel from home to store. They travel to work, school, church, and beyond and often purchase food on the way. Using an access measure that only considers distance from home is likely to underestimate the options available for food shopping.

Measures of distance to the nearest food retailer do not consider whether the consumer has other choices that can offer better products or lower prices. Thus, many studies have tried to capture the amount of choice consumers have in their measures of food access. Apparicio et al. (2007) and Sparks et al. (2009) calculate the distance to three different stores, or the distance to three different chain supermarkets to add a dimension of the level of competition in an area. Density measures that count the number of stores in a certain geographical area are also often used to describe the food environment. For example, measures such as the number of supermarkets, fast food restaurants, or convenience stores per resident within a census tract or the ratio of fast food restaurants to supermarkets per capita have been used to describe food environments within a geographic area (see, for example, Gallagher, 2007 and 2006). Density measures add richness to a measure of the food environment by looking beyond distance. Further, relatively higher densities of a store type could be a signal of the level of competition among that type of store and may signal lower prices.

A problem with both distance and density measures, however, is that they only measure "potential access," and not "realized access."[6] Potential access shows where consumers could possibly shop, while realized access shows where consumers actually shop. A consumer that does not care to eat at fast food restaurants or convenience stores may have high access to these stores but may pass by them on the way to a supermarket that is farther away. And even if the concentration of convenience stores is higher in some neighborhoods, most of the food shopping could be conducted at larger supermarkets. For example, Broda et al. (forthcoming) find that compared with higher income families, low-income families spend slightly more of their food budget at convenience stores, which offer prices that are, on average, greater than those in traditional grocery stores. However, the study also found that compared with higher income families, low-income families spend a greater share of total expenditures at supercenters, where lower prices almost completely offset the higher prices at convenience stores. To further illustrate this point, data show that, on average, SNAP participants lived 1.8 miles from the nearest supermarket but traveled 4.9 miles to the foodstore they most often used (Cole, 1997). (More details on both of these findings are provided in chapter 5).

[6]This helpful distinction is made by Sharkey and Horel, 2009.

Area-based versus individual based concepts of access

Studies that use area-based measures of access, either distance or density, usually focus only on areas with high concentrations of vulnerable populations.[7] Examining only areas in which a relatively high proportion of poor people live, for example, will miss many poor people who live in less poor areas, but who may also have limited access.[8] Further, not everyone who lives in low-income areas is poor. There will certainly be people who live in a low-income area with limited access but who themselves have

[7]Most studies consider only areas with high concentrations of poor people. Some also consider areas with low vehicle ownership rates, high concentrations of elderly, and the availability of public transportation. See Neckerman et al., 2009, for more details.

[8]A separate concern is for those who are too poor to buy food regardless of how accessible it is. USDA's Household Food Security in the United States series reports the percent of Americans who do not have access to enough food for an active, healthy life for all household members. In 2007, 11.1 percent of households were food insecure at some time during the year and about 4.1 percent of all households had very low food security some time during the year (Nord et al., 2008).

adequate resources to travel to a supermarket regularly. Ownership of, or easy access to, a motorized vehicle may be the best marker of access regardless of whether someone lives in a poor area or not. The majority of U.S. households own cars (89.7 percent).[9] Vehicle ownership rates among those living in rural areas (94.6 percent) are higher than among those living in urban areas (87.8 percent). Those with low incomes are less likely to own a vehicle, but time use and travel mode data reported in Chapter 2 show that most people, even low-income people, take their own vehicles or drive with someone else to do their grocery shopping.

[9]See chapter 3 for details on household access to vehicles.

The distinction between individual-level access and area-based access has significant implications for measuring the size of the problem of limited access—that is, the number of people with limited access. Chapter 2 illustrates this. The distinction also has implications for the design of policies that may be most cost effective in reducing the problem. For example, if those people who have low incomes and limited access are scattered throughout areas with lower concentrations of poor people, then opening up a new supermarket may be less effective than policies that make individual or group transportation to stores less expensive (for example, bus/transit subsidies, store shuttle services, or improved bus routes). However, if people with low income and low access are concentrated in certain areas, then finding a way to open a new store or improve the variety of foods carried in existing stores in that area may be more effective.

The bulk of studies of food access find relative differences across areas in access to some types of food retailers and foods.[10] Researchers have documented the inequality of access to supermarkets in urban inner city areas (Donohue, 1997), while others have focused on differences in access to supermarkets in poor versus nonpoor areas (O'Conner and Abell, 1992; Cotterill and Franklin, 1995; Pike, 2000). Moore and Diez Roux (2006) investigated racial disparities in the number and variety of grocery stores in neighborhoods. Zenk et al. (2005) compared distances to the nearest supermarket among poor White and poor non-White households. Extending that approach, Gallagher (2007 and 2006) compared differences in the ratio of supermarkets to other foodstores in a neighborhood in Detroit and Chicago. More recently, Neckerman et al. (2009) examined the retail food environment in New York City. They considered the characteristics of households, such as race, income, and forms of available transportation, including vehicle ownership or access to mass transit, as factors affecting a household's foodstore access. Findings show lower access to supermarkets and other healthy food stores for neighborhoods composed primarily of African-Americans, where populations were heavily reliant on mass transit for transportation.

[10] Larson et al. (2009) (Not in references) reviewed 54 studies of disparities in access to healthy food.

While there may be relative disparities in access to specific types of food retailers, there is not general agreement on whether areas with relatively less access have *inadequate* access to food. That is—there is not a widely agreed standard above which an area has "adequate" access to affordable and nutritious food and below which, an area has "inadequate" access to food. To draw such a distinction would require more systematic consideration of what inadequate access to affordable and nutritious food means, which would require collection of very detailed data on food availability and price. That does not mean that there are not areas with inadequate access. The research

highlighted above certainly shows some areas may have inadequate access. Rather, the point here is that the data and methods that have been used to document relative differences cannot be implemented easily on a national level to make a national-level distinction.

Absolute standards of similar concepts, such as *poverty* or *food insecurity*, have been made and are commonly used in describing conditions of the U.S. economy and the well-being of U.S. households and in making public policy. While these absolute distinctions are certainly not universally agreed upon, there is a much deeper and richer literature from which a concept like poverty can be defined and measured than there is for food deserts.

Report Outline

A variety of data and methods was used to assess the extent of limited access to affordable and nutritious food, including both individual measures of access and area-based measures of access. Responses to a national-level household survey of food adequacy and access were analyzed, as were data estimating differences among households in the time spent traveling to grocery stores and the travel mode used. To determine the extent of areas with limited access, a comprehensive database was developed to identify the location of supermarkets and large grocery stores within the continental United States. Food access was estimated as the distance to the nearest supermarket or large grocery store, which is used as a proxy for the availability of affordable and nutritious food. The analysis specifically considered distance to the nearest supermarket for low-income populations and for households without access to a vehicle. Differences in rural, urban, and areas in between were considered. These results are presented in Chapter 2. Chapter 3 uses the same data on the location of supermarkets to analyze the household and neighborhood characteristics that distinguish areas with low access from areas with better access. The novel contribution of these analyses is that they are national in scope and combine two databases on supermarket and grocery store location.

Supermarkets are not the only sources of healthy and affordable foods. Many smaller scale sources may be used by those who are underserved by supermarkets. However, a complete assessment of the food environment of every area in the United States is an enormous task that is beyond the scope of this study. Instead, USDA cooperated with the National Poverty Center (NPC) at the University of Michigan to commission six studies of the food environment at more localized levels. These studies provide more detail on the food environment in New York City; Indianapolis, Indiana; New Orleans, Louisiana; Salt Lake County, Utah; the Brazos Valley in rural Texas; and Portland, Oregon. Methods and findings from these studies, along with the national level analyses, are discussed in Chapters 2 and 3.[11]

People who live in areas with limited access may be more prone to poor diets and have poor health outcomes, such as obesity or diabetes, because they lack access to healthy foods and may have too easy access to less healthy foods. Chapter 4 considers the extent of knowledge on the relationship between limited access and diet and health outcomes. This chapter draws heavily upon a workshop summary of the Institute of Medicine (IOM) and the National Academies. This workshop, sponsored by ERS, was

[11]Drafts of these papers and an agenda for a conference that featured the papers are available on the NPC website: www.npc.umich.edu/news/events/food-access/index.php. Final versions of these papers and a summary of the papers will accompany the final version of this report.

conducted on January 26-27, 2009. It included sessions on measuring access; methodological challenges in assessing causal relationships between food access and diet and health outcomes; reviews of existing knowledge about the links between access and diet and health outcomes; and promising strategies for mitigating the impacts of food deserts that have been suggested, implemented, or are in the planning stages. A workshop summary will be published in June 2009.

Populations that live in areas with limited access to affordable and nutritious food may adjust their food shopping behaviors and diets based on the food environment in their area. These adjustments could be due to the lack of availability of some foods or to the relative prices of different foods offered from different food retailers. Chapter 5 considers how food access relates to food choice—that is, whether consumers in areas with limited access face higher prices for similar goods and whether they have different food purchasing behaviors. Comparisons of the prices that consumers paid for similar foods (milk, ready-to-eat cereal, and bread) purchased at different retail outlets (supermarkets and grocery stores vs. convenience stores) are made using hedonic price models. Differences in the prices offered at different retail outlets could lead consumers to adjust where they shop and what they purchase. The chapter also considers shopping behavior for populations with limited access, which can further the understanding of the adjustments that consumers make to different prices and retail availability. A summary of a body of work conducted by FNS on the shopping patterns of participants of the Supplemental Nutrition Assistance Program (SNAP—formerly called the Food Stamp Program) is provided in the chapter. ERS also analyzed how SNAP participants' expenditures on foods in several food groups (e.g., canned and noncanned fruits and vegetables) varied by self-reported measures of access to supermarkets. Spending on these food groups by people with relatively easy access to supermarkets is compared with spending by those with less access to supermarkets. Finally, findings from a study conducted by ERS and external researchers on whether poor people pay more for similar foods relative to higher income people are integrated.

Economic and market conditions may contribute to the existence of food deserts. The costs facing food retail businesses and the choices available to consumers could both account for differences among stores in where they choose to locate. Chapter 6 provides an economic framework for understanding supply and demand for food and factors that may account for difference in access to food retailers across different areas. USDA, through NPC, contracted with two economists, Marianne Bitler and Steven Haider, to provide an economic framework for understanding food access issues. The chapter draws heavily upon this paper (Bitler and Haider, 2009).

In addition to administering SNAP and other nutritional assistance programs, USDA administers programs to improve food security in low-income communities. States and localities have also implemented programs to increase access to affordable and nutritious food for underserved populations. Private retailers have responded to the needs of low-income and bargain food shoppers. Chapter 7 describes USDA's Community Foods Project Competitive Grants Program and lessons learned from this program. Chapter 8 highlights several programs that have been implemented by States and

localities, as well as describes several other policy options that may be considered to reduce the effects of limited access.

Not all of the questions about the extent, causes, and consequences of food deserts will be answered in this report. The final chapter, Chapter 9, outlines an agenda for further research on the causes and consequences of areas with limited access to affordable and nutritious food.

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FSMA Final Rule on Requirements for Additional Traceability Records for Certain Foods

Food Safety Modernization Act (FSMA)

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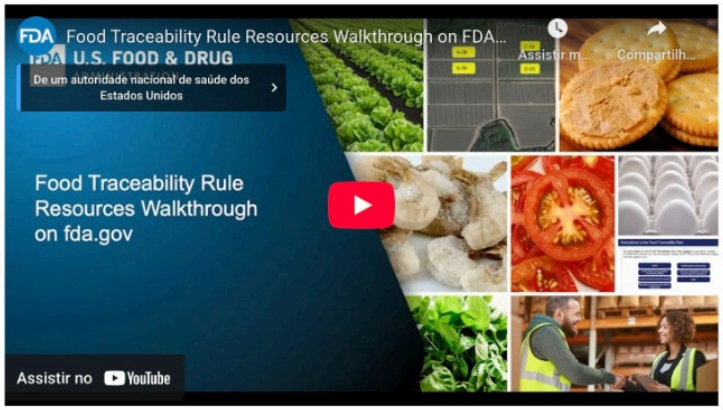

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Regulated Product(s) Food & Beverages

What's New

The original compliance date for all persons subject to the recordkeeping requirements of the Food Traceability Rule was Tuesday, January 20, 2026. The FDA proposed to extend the compliance date for the rule by 30 months to July 20, 2028. Subsequently, the Continuing Appropriations, Agriculture, Legislative Branch, Military Construction and Veterans Affairs, and Extensions Act of 2026 directed FDA not to enforce the Food Traceability Rule prior to that same date of July 20, 2028. FDA intends to comply with this Congressional directive.

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The FDA final rule on Requirements for Additional Traceability Records for Certain Foods (Food Traceability Final Rule) establishes traceability recordkeeping requirements, beyond those in existing regulations, for persons who manufacture, process, pack, or hold foods included on the Food Traceability List (FTL). The final rule is a key component of FDA's New Era of Smarter Food Safety Blueprint and implements Section 204(d) of the FDA Food Safety Modernization Act (FSMA). The new requirements identified in the final rule will allow for faster identification and rapid removal of potentially contaminated food from the market, resulting in fewer foodborne illnesses and/or deaths.

- Federal Register Notice
- Docket No. FDA-2014-N-0053
- eCFR Subpart S - Additional Traceability Records for Certain Foods
- Food Traceability Rule At-A-Glance

At the core of this rule is a requirement that persons subject to the rule who manufacture, process, pack, or hold foods on the FTL, maintain records containing **Key Data Elements (KDEs)** associated with specific **Critical Tracking Events (CTEs)**; and provide information to the FDA within 24 hours or within some reasonable time to which the FDA has agreed.

The final rule aligns with current industry best practices and covers domestic, as well as foreign firms producing food for U.S. consumption, along the entire food supply chain in the farm-to-table continuum.

Compliance Date

entities in their supply chain, the most effective and efficient way to implement the rule is to have all persons subject to the requirements come into compliance by the same date. The original compliance date for all persons subject to the recordkeeping requirements of the Food Traceability Rule was Tuesday, January 20, 2026. The FDA proposed to extend the compliance date for the rule by 30 months to July 20, 2028. Subsequently, the Continuing Appropriations, Agriculture, Legislative Branch, Military Construction and Veterans Affairs, and Extensions Act of 2026 directed FDA not to enforce the Food Traceability Rule prior to that same date. FDA intends to comply with this Congressional directive.

- Getting Started with the Food Traceability Rule
- Food Traceability List (FTL)
- Key Features
- Full and Partial Exemptions
- Modified Requirements, Exemptions, and Waivers
- Critical Tracking Events and Key Data Elements
- Supply Chain Examples
- Traceability Lot Code
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- Guidance for Industry
- Frequently Asked Questions about the Food Traceability Final Rule
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Make Every Bite Count With the *Dietary Guidelines*

Dietary Guidelines for Americans
2020 - 2025
DietaryGuidelines.gov

Executive Summary

The foods and beverages that people consume have a profound impact on their health. The scientific connection between food and health has been well documented for many decades, with substantial and increasingly robust evidence showing that a healthy lifestyle—including following a healthy dietary pattern—can help people achieve and maintain good health and reduce the risk of chronic diseases throughout all stages of the lifespan: infancy and toddlerhood, childhood and adolescence, adulthood, pregnancy and lactation, and older adulthood. The core elements of a healthy dietary pattern are remarkably consistent across the lifespan and across health outcomes.

Since the first edition was published in 1980, the *Dietary Guidelines for Americans* have provided science-based advice on what to eat and drink to promote health, reduce risk of chronic disease, and meet nutrient needs. Publication of the *Dietary Guidelines* is required under the 1990 National Nutrition Monitoring and Related Research Act, which states that at least every 5 years, the U.S. Departments of Agriculture (USDA) and of Health and Human Services (HHS) must jointly publish a report containing nutritional and dietary information and guidelines for the general public. The statute (Public Law 101-445, 7 United States Code 5341 et seq.) requires that the *Dietary Guidelines* be based on the preponderance of current scientific and medical knowledge. The 2020-2025 edition of the *Dietary Guidelines* builds from the 2015 edition, with revisions grounded in the *Scientific Report of the 2020 Dietary Guidelines Advisory Committee* and consideration of Federal agency and public comments.

The *Dietary Guidelines* is designed for policymakers and nutrition and health professionals to help all individuals and their families consume a healthy, nutritionally adequate diet. The information in the *Dietary Guidelines* is used to develop, implement, and evaluate Federal food, nutrition, and health policies

and programs. It also is the basis for Federal nutrition education materials designed for the public and for the nutrition education components of USDA and HHS nutrition programs. State and local governments, schools, the food industry, other businesses, community groups, and media also use *Dietary Guidelines* information to develop programs, policies, and communication for the general public.

The aim of the *Dietary Guidelines* is to promote health and prevent disease. Because of this public health orientation, the *Dietary Guidelines* is not intended to contain clinical guidelines for treating chronic diseases. Chronic diseases result from a complex mix of genetic, biological, behavioral, socioeconomic, and environmental factors, and people with these conditions have unique health care requirements that require careful oversight by a health professional. The body of scientific evidence on diet and health reviewed to inform the *Dietary Guidelines* is representative of the U.S. population—it includes people who are healthy, people at risk for diet-related chronic conditions and diseases, such as cardiovascular disease, type 2 diabetes, and obesity, and some people who are living with one or more of these diet-related chronic illnesses. At the same time, it is essential that Federal agencies, medical organizations, and health professionals adapt the *Dietary Guidelines* to meet the specific needs of their patients as part of an individual, multifaceted treatment plan for the specific chronic disease.

Consistent and Evolving

Although many recommendations have remained relatively consistent over time, the *Dietary Guidelines* also has built upon previous editions and evolved as scientific knowledge has grown. The *Dietary Guidelines for Americans, 2020-2025* reflects this in three important ways:

The first is its recognition that diet-related chronic diseases, such as cardiovascular disease, type 2 diabetes, obesity, and some types of cancer, are very prevalent among Americans and pose a major public health problem. Today, more than half of adults have one or more diet-related chronic diseases. As a result, recent editions of the *Dietary Guidelines* have focused on healthy individuals, as well as those with overweight or obesity and those who are at risk of chronic disease. A fundamental premise of the *2020-2025 Dietary Guidelines* is that just about everyone, no matter their health status, can benefit from shifting food and beverage choices to better support healthy dietary patterns.

The second is its focus on dietary patterns. Researchers and public health experts, including registered dietitians, understand that nutrients and foods are not consumed in isolation. Rather, people consume them in various combinations over time—a dietary pattern—and these foods and beverages act synergistically to affect health. The *Dietary Guidelines for Americans, 2015-2020* puts this understanding into action by focusing its recommendations on consuming a healthy dietary pattern. The *2020-2025 Dietary Guidelines* carries forward this emphasis on the importance of a healthy dietary pattern as a whole—rather than on individual nutrients, foods, or food groups in isolation.

The third is its focus on a lifespan approach. This edition of the *Dietary Guidelines* highlights the importance of encouraging healthy dietary patterns at every life stage from infancy through older adulthood. It provides recommendations for healthy dietary patterns by life stage, identifying needs specific to each life stage and considering healthy dietary pattern characteristics that should be carried forward into the next stage of life. For the first time since the 1985 edition, the *2020-2025 Dietary Guidelines* includes recommendations for healthy dietary patterns for infants and toddlers.

The Guidelines

The *2020-2025 Dietary Guidelines* provides four overarching Guidelines that encourage healthy eating patterns at each stage of life and recognize that individuals will need to make shifts in their food and beverage choices to achieve a healthy pattern. The Guidelines also explicitly emphasize that a healthy dietary pattern is not a rigid prescription. Rather, the Guidelines are a customizable framework of core elements within which individuals make tailored and affordable choices that meet their personal, cultural, and traditional preferences. Several examples of healthy dietary patterns that translate and integrate the recommendations in overall healthy ways to eat are provided. The Guidelines are supported by Key Recommendations that provide further guidance on healthy eating across the lifespan.

The Guidelines

Make every bite count with the *Dietary Guidelines for Americans*. Here's how:

1 Follow a healthy dietary pattern at every life stage.

At every life stage—infancy, toddlerhood, childhood, adolescence, adulthood, pregnancy, lactation, and older adulthood—it is never too early or too late to eat healthfully.

- **For about the first 6 months of life,** exclusively feed infants human milk. Continue to feed infants human milk through at least the first year of life, and longer if desired. Feed infants iron-fortified infant formula during the first year of life when human milk is unavailable. Provide infants with supplemental vitamin D beginning soon after birth.
- **At about 6 months,** introduce infants to nutrient-dense complementary foods. Introduce infants to potentially allergenic foods along with other complementary foods. Encourage infants and toddlers to consume a variety of foods from all food groups. Include foods rich in iron and zinc, particularly for infants fed human milk.
- **From 12 months through older adulthood,** follow a healthy dietary pattern across the lifespan to meet nutrient needs, help achieve a healthy body weight, and reduce the risk of chronic disease.

2 Customize and enjoy nutrient-dense food and beverage choices to reflect personal preferences, cultural traditions, and budgetary considerations.

A healthy dietary pattern can benefit all individuals regardless of age, race, or ethnicity, or current health status. The *Dietary Guidelines* provides a framework intended to be customized to individual needs and preferences, as well as the foodways of the diverse cultures in the United States.

3 Focus on meeting food group needs with nutrient-dense foods and beverages, and stay within calorie limits.

An underlying premise of the *Dietary Guidelines* is that nutritional needs should be met primarily from foods and beverages—specifically, nutrient-dense foods and beverages. Nutrient-dense foods provide vitamins, minerals, and other health-promoting components and have no or little added sugars, saturated fat, and sodium. A healthy dietary pattern consists of nutrient-dense forms of foods and beverages across all food groups, in recommended amounts, and within calorie limits.

The core elements that make up a healthy dietary pattern include:

- **Vegetables of all types**—dark green; red and orange; beans, peas, and lentils; starchy; and other vegetables
- **Fruits,** especially whole fruit
- **Grains,** at least half of which are whole grain
- **Dairy,** including fat-free or low-fat milk, yogurt, and cheese, and/or lactose-free versions and fortified soy beverages and yogurt as alternatives
- **Protein foods,** including lean meats, poultry, and eggs; seafood; beans, peas, and lentils; and nuts, seeds, and soy products
- **Oils,** including vegetable oils and oils in food, such as seafood and nuts

4

Limit foods and beverages higher in added sugars, saturated fat, and sodium, and limit alcoholic beverages.

At every life stage, meeting food group recommendations—even with nutrient-dense choices—requires most of a person's daily calorie needs and sodium limits. A healthy dietary pattern doesn't have much room for extra added sugars, saturated fat, or sodium—or for alcoholic beverages. A small amount of added sugars, saturated fat, or sodium can be added to nutrient-dense foods and beverages to help meet food group recommendations, but foods and beverages high in these components should be limited. Limits are:

- **Added sugars**—Less than 10 percent of calories per day starting at age 2. Avoid foods and beverages with added sugars for those younger than age 2.
- **Saturated fat**—Less than 10 percent of calories per day starting at age 2.
- **Sodium**—Less than 2,300 milligrams per day—and even less for children younger than age 14.
- **Alcoholic beverages**—Adults of legal drinking age can choose not to drink, or to drink in moderation by limiting intake to 2 drinks or less in a day for men and 1 drink or less in a day for women, when alcohol is consumed. Drinking less is better for health than drinking more. There are some adults who should not drink alcohol, such as women who are pregnant.

Terms to Know

Several terms are used throughout the *Dietary Guidelines* and are essential to understanding the Guidelines and putting them into action. These terms are defined here:

- **Dietary pattern:** It is the combination of foods and beverages that constitutes an individual's complete dietary intake over time. This may be a description of a customary way of eating or a description of a combination of foods recommended for consumption.
- **Nutrient dense:** Nutrient-dense foods and beverages provide vitamins, minerals, and other health-promoting components and have little added sugars, saturated fat, and sodium. Vegetables, fruits, whole grains, seafood, eggs, beans, peas, and lentils, unsalted nuts and seeds, fat-free and low-fat dairy products, and lean meats and poultry—when prepared with no or little added sugars, saturated fat, and sodium—are nutrient-dense foods.

For most individuals, no matter their age or health status, achieving a healthy dietary pattern will require changes in food and beverage choices. Some of these changes can be accomplished by making simple substitutions, while others will require greater effort to accomplish. This edition of the *Dietary Guidelines* presents overall guidance on choosing nutrient-dense foods and beverages in place of less healthy choices and also discusses special nutrition considerations for individuals at each life stage—infants and toddlers, children and adolescents, adults, women who are pregnant or lactating, and older adults.

Although individuals ultimately decide what and how much to consume, their personal relationships; the settings in which they live, learn, work, play, and gather; and other contextual factors—including their ability to consistently access healthy and affordable food—strongly influence their choices. Health professionals, communities, businesses and industries, organizations, government, and other segments of society all have a role to play in supporting individuals and families in making choices that align with the *Dietary Guidelines* and ensuring that all people have access to a healthy and affordable food supply. Resources, including Federal programs that support households, regardless of size and make-up, in choosing a healthy diet and improving access to healthy food, are highlighted throughout this edition of the *Dietary Guidelines for Americans*.

National Strategy for Reducing Food Loss and Waste and Recycling Organics

JUNE 2024

THE WHITE HOUSE
WASHINGTON

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Background

In 2015, the U.S. Environmental Protection Agency and the U.S. Department of Agriculture jointly announced an ambitious national goal to reduce food loss and waste by 50% by 2030. In 2021, EPA directly aligned the food waste part of the goal with the United Nations Sustainable Development Goal Target 12.3:[1,2] "by 2030, halve per capita[a] global food waste at the retail and consumer levels and reduce food losses along production and supply chains, including post-harvest losses."[3] Recycling food and other organic waste (e.g., composting, anaerobic digestion, and rendering) will also drive progress toward EPA's nationwide goal of a 50% recycling rate by 2030 and support the USDA Climate Smart Agriculture and Forestry Strategy.[4]

Actions included in this strategy will put the U.S. on a path to achieving the complementary goals to reduce food loss and waste and increase the recycling rate in addition to supporting the *U.S. Methane Emissions Reduction Action Plan*,[5] which identified reducing food waste in landfills as an Administration action to reduce methane emissions.[6] Lastly, food waste is responsible for 58% of landfill methane emissions released to the atmosphere,[7] so diverting food waste from landfills is an effective strategy to reduce greenhouse gas emissions.

The concentration of methane (a potent greenhouse gas) in the atmosphere has more than doubled over the past 200 years. Scientists estimate that this increase is responsible for 20 to 30% of climate warming since the Industrial Revolution.[8] Per the Fifth National Climate Assessment, the increase in global greenhouse gas emissions is causing rapid warming and other large-scale changes, many unprecedented in thousands of years, including rising sea levels, changing rainfall patterns, shift in the timing of seasonal events, and others.[9]

Through this *National Strategy for Reducing Food Loss and Waste and Recycling Organics*, the Biden-Harris Administration identifies concrete steps—and complementary EPA, USDA and Food and Drug Administration actions—that will accelerate the prevention of food loss and waste where possible and practical, and the recycling of the remainder with other organic waste, across the entire U.S. supply chain.[10] To build a more circular economy for all, EPA, USDA and FDA seek to highlight opportunities to use raw materials more efficiently, recover valuable resources from discarded materials, enable those resources to be used for their highest value, and help regenerate soils. EPA, USDA and FDA seek to accomplish this in ways that address climate change while being inclusive of all communities, consider environmental justice concerns and the potential to reduce food and nutrition insecurity, and drive innovation and economic growth. EPA, USDA and FDA collaborate on food loss and waste efforts, and all three work closely with a variety of public- and private- sector partners.[11] The three federal agencies have a formal interagency agreement focusing on the cooperation and coordination of efforts to reduce food loss and waste.[12,13]

[a] The UN Food Waste Index (2024), reports that he US per capita food waste is 73 kg/year for household, 74 kg/year for food service, and 12 kg/year for retail. In contrast, the average food waste per capita in high income countries (per World Bank income grouping) is 81 kg/year for households, 21 kg/year for food service, and 13 kg/year for retail.

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Audience: Governmental and non-governmental organizations, communities and businesses focused on preventing food loss and waste and increasing organics recycling.

Scope: Food loss and waste occurs throughout the food supply chain from production through consumption. This Strategy focuses on preventing food loss and waste and recycling organic waste (including food, yard, and tree trimmings) and other organic materials along the entire supply chain.

The term "organic waste" in this Strategy includes food, yard and tree trimmings, and other organic (carbon-based) materials in the waste stream. "Organic" does not refer to food and fiber certified under the Organic Foods Production Act of 1990.

In the United States, the average family of four spends $1,500 each year on food that ends up uneaten.[14] More than one-third (nearly 100 million tons) of the U.S. municipal waste stream is organic waste, including food, yard and tree trimmings and other organic materials.[15] Sixty-six million tons of this is food.[16] Food is also the single most common material found in landfills, comprising 24% of municipal solid waste in landfills,[17] and 61% of methane generated by landfilled food waste is not captured by landfill gas collection systems and is released to the atmosphere.[18] The production and current management of this material as waste uses significant resources. It also contributes to a broad range of environmental impacts, including:

- Climate change.
- Air pollutants.
- Water scarcity.
- Biodiversity loss.
- Soil and water quality degradation.

Producing, packing, processing, distributing, retailing, preparing and disposing of the amount of food that is currently wasted annually in the United States contributes greenhouse gas emissions equivalent to those of 60 coal-fired power plants and requires enough water and energy to supply more than 50 million homes each year.[19,20] Preventing food loss and waste and recycling organic waste, can substantially reduce environmental impacts. Food loss and waste and other organic materials are resources rich in essential nutrients that can be recovered and returned to soils, building soil health and resilience in urban and rural environments and reducing reliance on mined and synthetic fertilizers, which are GHG-intensive to produce.[21] This effort will also provide social and economic benefits that can help address the needs of underserved communities, such as:

- The potential to advance food and nutrition security for Americans and increase the recovery/rescue[b] and donation rate of wholesome food, through the emergency food system and food recovery nonprofits.

[b] Throughout this Strategy, the terms "recovery" and "rescue" are used interchangeably. Please see the Glossary for definitions.

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- Expanding or creating jobs, financial opportunities, industries, and sectors in materials management or food waste reduction, including commercialization of new innovations that reduce food loss and waste.
- Increasing supply chain resilience—by building stronger linkages among stakeholders.
- Delivering financial savings to households and businesses.

Food loss and waste (FLW): Food produced for human consumption that leaves the human food supply chain for any reason (and is not ultimately consumed by humans).

Food loss: Food produced for human consumption that leaves the human food supply chain for any reason (and is not ultimately consumed by humans) between production up to, but not including, the retail sector.

Food waste: Food produced for human consumption that leaves the human food supply chain for any reason (and is not ultimately consumed by humans) at the retail, food service or household sectors.

Prevention of food loss and waste in this Strategy broadly refers to preventing food from becoming lost or wasted in the first place (i.e., source reduction) and keeping it in the human food supply chain by recovering and/or upcycling it.

Organics recycling in this Strategy refers to collecting and processing food loss and waste and other organic (carbon-based) materials, such as yard and tree trimmings, that would otherwise be landfilled or incinerated, and turning it into new products, such as soil amendments (e.g., by composting food scraps) or soaps and bone meal (e.g., by rendering). Some organics recycling solutions also generate biogas that can be captured and used to produce electricity or fuel.

Please see the Glossary for additional definitions.

EPA will use the Bipartisan Infrastructure Law's materials management grants,[22] and other resources available, to implement actions in this Strategy as appropriate. EPA and USDA are also advancing environmental justice through this Strategy, which addresses the many programs that are part of the Justice40 Initiative, which set the goal that 40% of certain federal investments flow to disadvantaged communities that are marginalized by underinvestment and overburdened by pollution.[23,24] Programs that are part of the Justice40 Initiative will be identified throughout the Strategy.[c] USDA will use American Rescue Plan Act (ARPA) and Inflation Reduction Act (IRA) funds, capacity, and competitive research, education, Extension funding, and other resources available to implement actions, as appropriate to their authority.

[c] Justice40 Initiatives are marked with an asterisk (*) throughout the Strategy.

Goal of the National Strategy for Reducing Food Loss and Waste and Recycling Organics

Prevent the loss and waste of food; increase recycling of food and other organic materials to support a more **circular economy for all; reduce GHG emissions; save households and businesses money; and build cleaner, healthier communities.**

The actions detailed in this Strategy will help the United States meet its *National Food Loss and Waste Reduction Goal*[25,26], to halve food loss and waste by 2030 and contribute to achieving the *National Recycling Goal*[27] to achieve a 50% recycling rate by 2030, as well as contribute to global achievement of the United Nations SDG Target 12.3.[28,29] Preventing food loss and waste and recycling food and other organic waste will also reduce landfill methane emissions, in support of the *U.S. Methane Emissions Reduction Action Plan*.[30] Coordinated efforts to reduce food loss and waste will complement the Administration's additional efforts to reduce methane emissions from landfills and agriculture (e.g., supporting anaerobic digestion). These efforts are part of the Administration's whole-of government methane strategy—including actions to cut emissions from landfills and food waste, agriculture, the oil and gas sector, abandoned mines, and other major sources, while improving measurement and monitoring—to fulfill the Global Methane Pledge, which aims to reduce anthropogenic methane emissions by at least 30% by 2030 from 2020 levels.

Scope of materials included in this Strategy

This Strategy addresses organic waste, defined as food, yard and tree trimmings, and other organic (carbon-based) materials in the waste stream. States and local jurisdictions often vary in the materials included in their definitions of organic waste. Organic materials such as yard and tree trimmings are often recycled on their own, but they may also be recycled together with food and therefore are included in this Strategy. Composting nitrogen-rich materials, like food, requires carbon-rich materials such as woody yard and tree trimmings and dried leaves.

Environmental justice and equity

Identifying and addressing the challenges related to food loss, food waste and organic waste to help meet the needs of Tribal communities as well as communities with environmental justice concerns is an integral part of the Strategy. These communities bear the brunt of the adverse environmental, social, and economic consequences of waste management, among other systems. More equitable outcomes, including waste or recycling collection and/or materials management options, require addressing their needs. For Tribal communities, food sovereignty is often based on a recognition of food production methodologies such as foraging and the use of all animal byproducts. A core pillar of Indigenous food sovereignty is the development and maintenance of circular economies that provide for these and other cultural values. Furthermore, this Strategy is a deliverable in the Biden-Harris Administration's National Strategy on Hunger, Nutrition, and Health, and these efforts align with Pillar 1, "Improve Food Access and Affordability," which

seeks to reduce barriers to food recovery by making it easier for food retailers and the service industry to donate wholesome foods.[31]

Strategies to recover food that would otherwise be lost or wasted could help deliver additional wholesome foods, especially fresh, frozen, dried, or canned vegetables and fruit, to emergency food assistance organizations, such as food banks and food pantries. This in turn could have health and economic benefits for households that use such resources when they are experiencing food insecurity. Such strategies would also contribute to feeding the growing global population with less environmental impact. The Strategy highlights opportunities, especially in communities with environmental justice concerns, to build community-scale organics recycling infrastructure; better feed those in need; reduce pollution; create jobs and business opportunities; and use compost made from recycled organic waste, including food, to support green infrastructure and build healthier soil across communities.

A central part of addressing environmental justice and equity is the meaningful engagement of communities in decisions that affect them. Robust engagement with communities most affected by the obstacles identified below is a foundational component of this Strategy.

Through community partnerships grounded in equity, this Strategy will ensure that communities most in need will be deeply engaged in its development and implementation—and will be beneficiaries of its success.

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Sustainable Management of Food

- Basics
- Wasted Food Scale
- Prevention through Source Reduction
- Donating Food
- Composting
- Anaerobic Digestion
- Preventing Wasted Food at Home
- Tools for Preventing and Diverting Wasted Food
- Funding Opportunities and EPA Programs Related to the Food System
- Local and Regional Resources
- Data on Wasted Food in the U.S.

Contact Us About Sustainable Management of Food

United States 2030 Food Loss and Waste Reduction Goal

Reducing food waste presents opportunities to:

- Reduce greenhouse gas emissions;
- Increase food security, productivity and economic efficiency; and
- Conserve energy and other resources.

Helpful Links

- Reducing Wasted Food at Home
- International Efforts on Wasted Food Recovery
- Food Material Specific Data

In the U.S., 30 to 40 percent of the food supply is never eaten, wasting the resources used to produce it and creating many environmental impacts. Food waste is the single most common material landfilled and incinerated in the U.S.

More than 85 percent of greenhouse gas emissions from landfilled food waste result from activities prior to disposal, including production, transport, processing, and distribution.[1] In order to reduce these emissions, we need to prevent food waste from being generated in the first place.

On this page:

- U.S. 2030 Food Loss and Waste Reduction Goal
- Measuring the Success of the Goal
- Current Progress Toward the Goal
- How Does EPA Plan to Take Action on the Goal?
- How Can You Take Action?

U.S. 2030 Food Loss and Waste Reduction Goal

On September 16, 2015, the U.S. Department of Agriculture (USDA) and EPA announced the U.S. 2030 Food Loss and Waste Reduction goal, the first-ever domestic goal to reduce food loss and waste. The goal seeks to cut food loss and waste in half by the year 2030.

By acting on this goal, the U.S. can reduce local and global environmental impacts associated with food loss and waste while improving food security and saving money for families and businesses.

EPA, USDA, and the Food and Drug Administration (FDA) form a Federal Interagency Collaboration to Reduce Food Loss and Waste, and together work with communities, organizations and businesses, along with our partners in state, Tribal and local government, to take actions that will lead us closer to achieving the national goal.

Measuring the Success of the Goal

To measure and describe progress toward the 2030 food loss and waste reduction goal, the following baseline is being used:

- **For food waste in the United States**: EPA estimates the amount of food waste generated by sector, as well as the amounts being managed by several management pathways. In September 2021, EPA updated the baseline to align the 2030 goal with the United Nations' Sustainable Development Goal (SDG) Target 12.3, which aims to reduce the amount of food from food retail, food service, and households that has been removed from the human supply chain. This is defined as food waste that is being sent to the following six management pathways: landfill; controlled combustion; sewer; litter, discards and refuse; co/anaerobic digestion; compost/aerobic digestion; and land application.[2] With this updated approach and baseline, in 2016, 328 pounds of food waste per person were sent to landfill, controlled combustion, sewer, co/anaerobic digestion, compost/aerobic digestion, and land application. The 2030 goal aims to reduce this food waste by 50 percent to 164 pounds per person.
- **For food loss in the United States**: EPA and USDA do not have a baseline for food loss, which occurs in production and up to (but not including) the retail level.

Current Progress Toward the Goal

The U.S. still has a long way to go to meet the 2030 goal. For food waste, the goal aims to reduce the amount of food leaving the hum food supply chain by 50% by 2030. It aims to prevent food waste generation in the first place, since the majority of greenhouse gases from food waste are created before the food goes to disposal. In 2018, 335 pounds of food waste per person left the human food supply chain (i.e., were sent to landfill, controlled combustion, sewer, co/anaerobic digestion, compost/aerobic digestion, and land application), and in 2019, 349 pounds of food waste per person left the human food supply chain. In the three years between the baseline year (2016)

and the latest estimates (2019), there was a six percent increase in per capita food leaving the human supply chain (i.e., food waste going to the six identified management pathways).[3] EPA and USDA do not have baselines for food loss and at this time are not able to measure progress toward this part of the national and international goals.

How Does EPA Plan to Take Action on the Goal?

Working with USDA, FDA, and state and Tribal partners, EPA plans to secure action on the 2030 goal by working with leaders in the food system (e.g., private, government, non-profit, academia, faith) to promote successful interventions and tools to advance the sustainable management of food.

By aligning the national goal with SDG Target 12.3, we are challenging everyone to prevent food waste from being generated in the first place, keep food in the human supply chain, and recycle anything remaining.

How Can You Take Action?



Everyone can take action to reduce food loss and waste in the United States, whether you are an individual, a business, a school, or a non-profit, community or faith-based organization.

- **Individuals and Communities:** If you are an individual, learn how to prevent wasted food at home. Communities can learn how to help households with the Food: Too Good to Waste Toolkit.
- **Businesses and Organizations:** If you are a business, you can begin by measuring your food waste and then taking action to reduce it. Consider joining the U.S. Food Loss and Waste Champions. Check out EPA's tools for preventing and diverting wasted food and resources in our Model Recycling Toolkit.

[1] U.S. EPA. Documentation for Greenhouse Gas Emission and Energy Factors Used in the Waste Reduction Model (WARM) Organic Materials Chapters (pdf). (2020).

[2] United Nations Environment Programme's Food Waste Index Report, which provides detail on how countries are expected to measure against SDG 12.3.

[3] U.S. EPA. 2019 Wasted Food Report (pdf). (2023).

Last updated on December 4, 2025

Farm Security is National Security: The Trump Administration Takes Bold Action to Elevate American Agriculture in National Security

usda.gov/about-usda/news/press-releases/2025/07/08/farm-security-national-security-trump-administration-takes-bold-action-elevate-american-agriculture

July 8, 2025

(Washington, D.C., July 8, 2025) — Today, U.S. Secretary of Agriculture Brooke L. Rollins alongside U.S. Secretary of Defense Pete Hegseth, U.S. Attorney General Pam Bondi, and U.S. Secretary of Homeland Security Kristi Noem announced the next pillar of her Make Agriculture Great Again initiative: USDA's ***National Farm Security Action Plan***. This historic plan elevates American agriculture as a key element of our nation's national security, addressing urgent threats from foreign adversaries and strengthening the resilience of our nation's food and agricultural systems.

"We feed the world. We lead the world. And we'll never let foreign adversaries control our land, our labs, or our livelihoods," **said Secretary Rollins**. "This Action Plan puts America's farmers, families, and future first—exactly where they belong. Under President Trump's leadership, American agriculture will be strong, secure, and resilient. He will never stop fighting for our farmers and our ranchers."

A Real Threat, a Real Response

Recent events highlight the critical need for this action. Last month, the U.S. Department of Justice charged foreign nationals, including a Chinese Communist Party member, with smuggling a noxious fungus into the United States—a potential agroterrorism weapon responsible for billions in global crop losses. The scheme involved a U.S. research lab and highlighted a disturbing trend: America's enemies are playing the long game—infiltrating our research, buying up our farmland, stealing our technology, and launching cyberattacks on our food systems. These actions expose strategic vulnerabilities in America's food and agriculture supply chain.

Enough is enough.

Protecting the homeland begins with protecting our farmland and the ***National Farm Security Action Plan*** puts American farmers and ranchers first by safeguarding our food supply, strengthening critical infrastructure, and defending U.S. agricultural innovation from foreign adversaries.

A Comprehensive Action Plan for Agriculture Security

The ***National Farm Security Action Plan*** takes aggressive action across seven critical areas.

1. *Secure and Protect American Farmland* – Address U.S. foreign farmland ownership from adversaries head on. Total transparency. Tougher penalties.
2. *Enhance Agricultural Supply Chain Resilience* – Refocus domestic investment into key manufacturing sectors and identify non-adversarial partners to work with when domestic production is not available. Plan for contingencies.

3. *Protect U.S. Nutrition Safety Net from Fraud and Foreign Exploitation* – Billions have been stolen by foreign crime rings. That ends now.
4. *Defend Agricultural Research and Innovation* – No more sweetheart deals or secret pacts with hostile nations. American ideas stay in America.
5. *Put America First in Every USDA Program* – From farm loans to food safety, every program will reflect the America First agenda.
6. *Safeguard Plant and Animal Health* – Crack down on bio-threats before they ever reach our soil.
7. *Protect Critical Infrastructure* – Farms, food, and supply chains are national security assets —and will be treated as such.

Read the full plan (PDF, 1.2 MB)

Executive Summary (PDF, 9.3 MB)

A United Front Against Foreign Threats

This ***National Farm Security Action Plan*** will serve as the launch point for USDA to work in further unison with governors, state legislators, and federal partners to further integrate agriculture into the broader national security efforts over the coming months and years reaffirming the critical nature of agriculture and the need for a cross governmental approach. Defending access to American abundance and preserving the American experiment is the essence of agriculture security - and it is why farm security is national security.

“Foreign ownership of land near strategic bases and US military installations poses a serious threat to our national security. The Farm Security Plan will put America First and keep our bases across the homeland secure,” **said Secretary of Defense Pete Hegseth**.

“Farm security is national security. The Department of Justice will continue working to prosecute those who threaten American agriculture, investigate cases of potential agro-terrorism, and protect America’s farmers from illegal threats at home and abroad,” **said Attorney General Pam Bondi**.

“Food policy is national security policy. A country who cannot feed itself, cannot take care of itself, and cannot provide for itself is not secure. We have to be able to feed ourselves to make sure that no other country ever controls us…We will never let any other country control our food supply or control our people because we will always be the great United States of America,” **said Secretary of Homeland Security Kristi Noem**.

"Arkansas led the nation in kicking Communist China off our farmland and out of our state because we understand that farm security is national security,” **said Governor Sarah Huckabee Sanders**.“I applaud President Trump and Secretary Rollins for putting America first with this bold USDA Action Plan to protect our food supply, our economy, and our freedom.”

“Tennesseans know that our farmland is our national security, our economic future, and our children's heritage. The National Farm Security Action Plan puts America First by defending our farmland from foreign adversaries and protecting our food supply, and I thank the Trump Administration for its bold leadership,” **said Tennessee Governor Bill Lee**.

"Farm Security = Food Security = National Security. Thanks to these actions taken by President Trump and his team, we can further protect the backbone of Nebraska's economy from foreign adversaries like China. Homeland security starts at home, and we will continue to do our part in Nebraska," **said Nebraska Governor Jim Pillen**.

"Foreign adversaries like China, Russia, Iran, and North Korea are trying to get their foot in the door by buying up our farmland," **said Senator Tommy Tuberville**. "In my state of Alabama, we have the fourth-highest amount of foreign-owned land in the U.S. with 2.2 million acres. Not only is this dangerous for our farmers, but it's disastrous for our national security. Thankfully, the Trump administration is taking action to secure our farmland and keep us safe from bad foreign actors."

"Farm security is national security, and it is imperative that we start recognizing this before it is too late," **said Senator Roger Marshall, M.D.** "President Trump understands this, and I applaud the work his administration has done to partner with Kansas agriculture and the biodefense industry to ensure that plant and animal diseases do not compromise our food supply."

"President Trump is using every tool at his disposal to keep our nation safe, and that includes securing our food supply. This historic USDA effort reflects his clear understanding that food security is national security, and under his leadership, America's farmers and families are safer and stronger," **said House Committee on Agriculture Chairman Glenn "GT" Thompson**.

"Under Governor Sanders' leadership, Arkansas was the first state in the country to kick China off our farmland. Thank you President Trump, Secretary Rollins, and Secretary Hegseth for what you are doing to stop our adversaries from destroying our country and for protecting the way of life that provides the food, fiber, fuel, and shelter that we all depend on every single day," **said Arkansas Secretary of Agriculture Wes Ward**.

"Agriculture is national security, period. A nation that cannot feed itself, cannot defend itself, and I'm excited to work together with Sec. Rollins and Sec. Hegseth to champion policies that will strengthen US farm security and protect our nation's farmers, farmland, and food supply," **said Georgia Agriculture Commissioner Tyler J Harper**.

"I am grateful for Secretary Brooke Rollins' bold leadership in advancing USDA's Ag Security Agenda, which prioritizes safeguarding American agriculture and farmland from those who seek to undermine our nation's food and energy security. Iowa's multi-generation family farms are the backbone of our state's economy and way of life. For decades, Iowa has banned the foreign ownership of farmland, a law we strengthened in 2024, to preserve our agricultural integrity and security while balancing the need for foreign business investment in our state. I fully support Secretary Rollins' and the Trump Administration's efforts to bolster enforcement, increase reporting, and enhance transparency of land ownership laws at the national level to guarantee that our American farmland remains in the hands of Americans," **said Iowa Secretary of Agriculture Mike Naig**.

"The USDA's leadership in developing this comprehensive Plan shows a clear commitment to putting American farmers and ranchers first," said Commissioner Shell. "Protecting our farmland and food systems from foreign influence and biosecurity threats is critical not only to our agricultural economy but to the national security of the United States. I'm proud to join colleagues from across the nation in supporting this important work," **said Kentucky Commissioner of Agriculture Jonathan Shell**.

"Agriculture is truly the backbone of our nation, and protecting the U.S. now and into the future means protecting our food supply. I applaud the foresight and leadership of Secretary Rollins and her colleagues to defend and strengthen American agriculture. I look forward to supporting these efforts on behalf of our Oklahoma farmers and ranchers and all Americans who count on the safe, reliable, and nutritious food we produce in the United States," **said Oklahoma Secretary of Agriculture Blayne Arthur**.

###
Release No.:

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U.S. DEPARTMENT OF LABOR

Employment and Training Administration

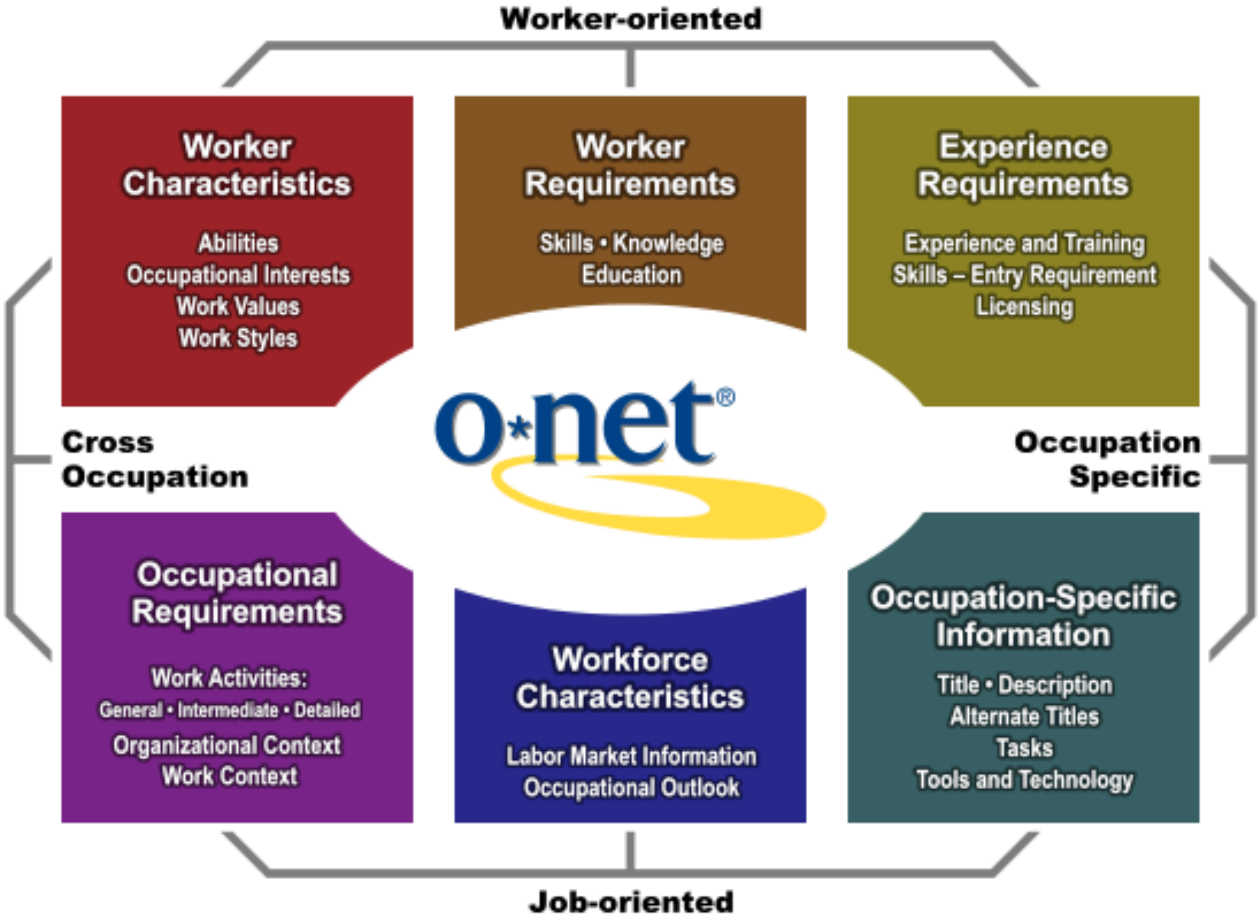
O*NET

More in This Section

- Close
  - O*NET Career Exploration Tools
  - O*NET Contacts
  - O*NET Data Collection Program
  - O*NET Additional Information

The O*NET system is maintained by a regularly updated database of occupational characteristics and worker requirements information across the U.S. economy. It describes occupations in terms of the knowledge, skills, and abilities required as well as how the work is performed in terms of tasks, work activities, and other descriptors.

O*NET database Content Model



Every occupation requires a different mix of knowledge, skills, and abilities, and is performed using a variety of activities and tasks. These distinguishing characteristics, or "descriptors", of an occupation are collected, codified, and described by the **O*NET Content Model**. This hierarchical model starts with six domains (or categories), describing the day-to-day aspects of the job and the qualifications and interests of the typical worker. The model includes nearly 277 descriptors collected by the O*NET program, along with other occupational data collected by other federal agencies such as the Bureau of Labor Statistics.

Data Collection Real-world information

The Data Collection program brings the Content Model frameworks to life with results from the working public.

The O*NET database is collected and updated through ongoing surveys of workers in each occupation supplemented in some cases by occupation experts. These data are incorporated into new versions of the database on an annual schedule , to provide up-to-date information on occupations.. The latest database releases are available from the O*NET Resource Center.

O*NET Information Dissemination Online

My Next Move - Get started on a new career

My Next Move helps new job seekers, students, and other career explorers investigate over 900 occupations. The interactive web-based tool contains easy ways to search careers. The **O*NET Interest Profiler** is an online test which matches the user's interests and level of work experience to matching careers.

Easy to read occupational reports include the most critical on-the-job tasks and skills. Job seekers can also find local salary information, training opportunities, and even job postings.

Specialized versions of My Next Move include:

- ***My Next Move for Veterans*** which provides targeted services to Veterans, and
- ***Mi Próximo Paso*** for Spanish-speaking career explorers/job seekers.

O*NET OnLine - Explore detailed O*NET data from your browser

O*NET OnLine is a comprehensive web application for exploring the O*NET database. Occupation reports offer a range of information, from a broad overview to comprehensive detail on a specific subject.

Career Exploration Tools - Professional assessment instruments

Using the O*NET **Career Exploration Tools** , students and workers may explore a range of career directions, based on their interests, work values, and abilities.

- O*NET Ability Profiler
- O*NET Interest Profiler
- O*NET Work Importance Locator

The computerized assessments and related materials are available as free downloads. In addition, workforce development professionals may be interested in the paper and pencil versions. Print shop files for these tools can be downloaded and taken to a professional for printing.

Code Connector - O*NET classification made easy

Designed specifically for professionals who need to be able to match the job title of an individual to broader occupational information, **O*NET Code Connector** makes it easy to match a job title to occupations in the O*NET system.

For more information about O*NET, visit the Frequently Asked Questions.

Who uses O*NET?

O*NET information is relevant to many different audiences. Below are possible user groups and how they can engage the system:

- **Counselors:** Connect people to appropriate occupations with resources like the Career Exploration Tools and O*NET OnLine . For self-directed career exploration, My Next Move is a great starting point. If you need to find an O*NET profile for an existing job, try the keyword search at O*NET Code Connector .
- **Students:** Discover occupations you might enjoy, by taking the Interest Profiler assessment located at My Next Move . If you've already got an occupation in mind, learn more about it from the occupational profiles, including necessary skills, education, and certification...
- **Business:** The O*NET Toolkit for Business contains examples and case studies illustrating how O*NET information can help you with writing job descriptions or human resource planning. Learn more about occupations using O*NET OnLine .
- **Researchers:** The Research and Technical Reports section contains over 30 papers on the development and evolution of the O*NET database and tools and scores of other papers on specific O*NET topics. For detailed study, download the database itself to directly view the data, as well as statistical metadata describing the quality of the information.
- **Developers:** Everything you need to incorporate O*NET information into your application can be found in the O*NET Resource Center , including URLs for linking directly to O*NET OnLine and code for O*NET web services. The Supplemental

Files page has resources for connecting other systems to the O*NET-SOC taxonomy, as well as downloadable datasets such as Detailed Work Activities, Tools & Technology, and Spanish translations of the datasets.

Scroll to Top

Employment & Training Administration (ETA)

An agency within the U.S. Department of Labor

200 Constitution Ave NW
Washington, DC 20210
1-877-US-2JOBS
1-877-872-5627
www.dol.gov
www.dol.gov

O*NET OnLine

Occupation keyword search

electrician Go

Logisticians

13-1081.00

Bright Outlook Updated 2025

Analyze and coordinate the ongoing logistical functions of a firm or organization. Responsible for the entire life cycle of a product, including acquisition, distribution, internal allocation, delivery, and final disposal of resources.

Sample of reported job titles: Client Services Administrator, Logistician, Production Planner, Supply Management Specialist

Also see: Logistics Engineers, Logistics Analysts

Summary Details Custom Easy Read Veterans Español

Contents

Occupation-Specific Information

Tasks

5 of 22 displayed

- Maintain and develop positive business relationships with a customer's key personnel involved in, or directly relevant to, a logistics activity.
- Develop an understanding of customers' needs and take actions to ensure that such needs are met.
- Manage subcontractor activities, reviewing proposals, developing performance specifications, and serving as liaisons between subcontractors and organizations.
- Develop proposals that include documentation for estimates.
- Review logistics performance with customers against targets, benchmarks, and service agreements.

Technology Skills

5 of 20 displayed

- **Data base user interface and query software** — Microsoft Access ; Microsoft SQL Server ; Structured query language SQL
- **Enterprise resource planning ERP software** — Microsoft Dynamics; Oracle E-Business Suite; Oracle JD Edwards EnterpriseOne; SAP software
- **Materials requirements planning logistics and supply chain software** — RedPrairie E2e; Warehouse management system WMS
- **Presentation software** — Microsoft PowerPoint
- **Procurement software** — Order management software; Purchasing software

Hot Technologies are requirements most frequently included across all employer job postings.
See all 15 Hot Technologies for this occupation.

In Demand skills are frequently included in employer job postings for this occupation.
See all 6 In Demand skills for this occupation.

Occupational Requirements

Work Activities

5 of 31 displayed

- **Communicating with Supervisors, Peers, or Subordinates** — Providing information to supervisors, co-workers, and subordinates by telephone, in written form, e-mail, or in person.
- **Organizing, Planning, and Prioritizing Work** — Developing specific goals and plans to prioritize, organize, and accomplish your work.
- **Making Decisions and Solving Problems** — Analyzing information and evaluating results to choose the best solution and solve problems.
- **Getting Information** — Observing, receiving, and otherwise obtaining information from all relevant sources.
- **Working with Computers** — Using computers and computer systems (including hardware and software) to program, write software, set up functions, enter data, or process information.

Detailed Work Activities

5 of 20 displayed

- Develop business relationships.
- Collect data about customer needs.
- Gather customer or product information to determine customer needs.
- Supervise employees.
- Allocate physical resources within organizations.

Work Context

5 of 25 displayed

- **Telephone Conversations** — 100% responded “Every day.”
- **E-Mail** — 96% responded “Every day.”
- **Face-to-Face Discussions with Individuals and Within Teams** — 70% responded “Every day.”
- **Work With or Contribute to a Work Group or Team** — 58% responded “Extremely important.”
- **Contact With Others** — 67% responded “Constant contact with others.”

Experience Requirements

Job Zone

Title	Job Zone Four: Considerable Preparation Needed
Education	Most of these occupations require a four-year bachelor's degree, but some do not.
Related Experience	A considerable amount of work-related skill, knowledge, or experience is needed for these occupations. For example, an accountant must complete four years of college and work for several years in accounting to be considered qualified.
Job Training	Employees in these occupations usually need several years of work-related experience, on-the-job training, and/or vocational training.
Job Zone Examples	Many of these occupations involve coordinating, supervising, managing, or training others. Examples include real estate brokers, sales managers, database administrators, graphic designers, conservation scientists, art directors, and cost estimators.
SVP Range	(7.0 to < 8.0)

Training & Credentials

State training Select a State Go

Local training ZIP Code Go

Certifications Find certifications nationwide

Apprenticeship Opportunities

Start your career and build your skillset. Visit **Apprenticeship.gov** to learn about opportunities related to this occupation.

Worker Requirements

Skills

5 of 22 displayed

- **Critical Thinking** — Using logic and reasoning to identify the strengths and weaknesses of alternative solutions, conclusions, or approaches to problems.
- **Active Listening** — Giving full attention to what other people are saying, taking time to understand the points being made, asking questions as appropriate, and not interrupting at inappropriate times.
- **Coordination** — Adjusting actions in relation to others' actions.
- **Monitoring** — Monitoring/Assessing performance of yourself, other individuals, or organizations to make improvements or take corrective action.
- **Reading Comprehension** — Understanding written sentences and paragraphs in work-related documents.

Knowledge

5 of 14 displayed

- **Transportation** — Knowledge of principles and methods for moving people or goods by air, rail, sea, or road, including the relative costs and benefits.
- **English Language** — Knowledge of the structure and content of the English language including the meaning and spelling of words, and rules of composition and grammar.
- **Administration and Management** — Knowledge of business and management principles involved in strategic planning, resource allocation, human resources modeling, leadership technique, production methods, and coordination of people and resources.
- **Customer and Personal Service** — Knowledge of principles and processes for providing customer and personal services. This includes customer needs assessment, meeting quality standards for services, and evaluation of customer satisfaction.
- **Mathematics** — Knowledge of arithmetic, algebra, geometry, calculus, statistics, and their applications.

Education

How much education does a new hire need to perform a job in this occupation? Respondents said:

75% Bachelor's degree required

8% High school diploma or equivalent required

8% Post-secondary certificate required

Worker Characteristics

Abilities

5 of 18 displayed

- **Deductive Reasoning** — The ability to apply general rules to specific problems to produce answers that make sense.
- **Inductive Reasoning** — The ability to combine pieces of information to form general rules or conclusions (includes finding a relationship among seemingly unrelated events).
- **Information Ordering** — The ability to arrange things or actions in a certain order or pattern according to a specific rule or set of rules (e.g., patterns of numbers, letters, words, pictures, mathematical operations).
- **Oral Comprehension** — The ability to listen to and understand information and ideas presented through spoken words and sentences.
- **Oral Expression** — The ability to communicate information and ideas in speaking so others will understand.

Interests

All 3 displayed

Interest code: **CEI**

Want to discover your interests? Take the **O*NET Interest Profiler**.

- **Conventional** — Work involves following procedures and regulations to organize information or data, typically in a business setting. Conventional occupations are often associated with office work, accounting, mathematics/statistics, information technology, finance, or human resources.
- **Enterprising** — Work involves managing, negotiating, marketing, or selling, typically in a business setting, or leading or advising people in political and legal situations. Enterprising occupations are often associated with business initiatives, sales, marketing/advertising, finance, management/administration, professional advising, public speaking, politics, or law.
- **Investigative** — Work involves studying and researching non-living objects, living organisms, disease or other forms of impairment, or human behavior. Investigative occupations are often associated with physical, life, medical, or social sciences, and can be found in the fields of humanities, mathematics/statistics, information technology, or health care service.

Work Styles

All 5 displayed

- **Achievement Orientation** — A tendency to establish and maintain personally challenging work-related goals, set high work-related standards, and exert high effort toward meeting those goals and standards.
- **Cooperation** — A tendency to be pleasant, helpful, and willing to assist others at work.
- **Integrity** — A tendency to be honest and ethical at work.
- **Attention to Detail** — A tendency to be detail-oriented, organized, and thorough in completing work.
- **Dependability** — A tendency to be reliable, responsible, and consistent in meeting work-related obligations.

Workforce Characteristics

Wages & Employment Trends

Median wages (2024)	$38.89 hourly, $80,880 annual
State wages	Select a State Go
Local wages	ZIP Code Go
Employment (2024)	241,000 employees
Projected growth (2024-2034)	Much faster than average (7% or higher)
Projected job openings (2024-2034)	26,400
State trends	Select a State Go
Top industries (2024)	Manufacturing Government

Source: Bureau of Labor Statistics 2024 wage data and 2024-2034 employment projections. "Projected growth" represents the estimated change in total employment over the projections period (2024-2034). "Projected job openings" represent openings due to growth and replacement.

Job Openings on the Web

State job openings	Select a State Go
Local job openings	ZIP Code Go

More Information

Related Occupations

5 of 10 displayed

- 13-1081.02 Logistics Analysts Bright Outlook
- 13-1081.01 Logistics Engineers
- 13-1082.00 Project Management Specialists
- 11-3071.04 Supply Chain Managers
- 11-3071.00 Transportation, Storage, and Distribution Managers

Professional Associations

Disclaimer: Sources are listed to provide additional information on related jobs, specialties, and/or industries. Links to non-DOL Internet sites are provided for your convenience and do not constitute an endorsement.

National Associations

5 of 12 displayed

- Association for Supply Chain Management ALLY
- AFCEA International
- Association of the United States Army
- Council of Logistics Engineering Professionals
- Institute for Supply Management

Accreditation, Certification, & Unions

- Council of Supply Chain Management Professionals
- The Logistics Institute

O*NET OnLine

Occupation keyword search

electrician Go

Supply Chain Managers

11-3071.04

Bright Outlook Updated 2025

Direct or coordinate production, purchasing, warehousing, distribution, or financial forecasting services or activities to limit costs and improve accuracy, customer service, or safety. Examine existing procedures or opportunities for streamlining activities to meet product distribution needs. Direct the movement, storage, or processing of inventory.

Sample of reported job titles: Global Supply Chain Director, Material Requirements Planning Manager, Solution Design and Analysis Manager, Supply Chain Director, Supply Chain Manager

Summary Details Custom Easy Read Veterans Español

Contents

Occupation-Specific Information

Tasks

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- Determine appropriate equipment and staffing levels to load, unload, move, or store materials.
- Manage activities related to strategic or tactical purchasing, material requirements planning, controlling inventory, warehousing, or receiving.
- Select transportation routes to maximize economy by combining shipments or consolidating warehousing and distribution.
- Define performance metrics for measurement, comparison, or evaluation of supply chain factors, such as product cost or quality.
- Implement new or improved supply chain processes to improve efficiency or performance.

Technology Skills

5 of 20 displayed

- **Analytical or scientific software** — Minitab; SAP APO; Simulation and modeling software
- **Data base user interface and query software** — Microsoft Access ; Microsoft SQL Server ; Structured query language SQL
- **Enterprise resource planning ERP software** — Microsoft Dynamics; Oracle PeopleSoft ; SAP business and customer relations management software; SAP software
- **Materials requirements planning logistics and supply chain software** — Infor Lawson Supply Chain Management; Oracle e-Business Suite Supply Chain Management; SAP SCM; Swisslog WarehouseManager
- **Presentation software** — Microsoft PowerPoint

Hot Technologies are requirements most frequently included across all employer job postings.
See all 14 Hot Technologies for this occupation.

In Demand skills are frequently included in employer job postings for this occupation.
See all 7 In Demand skills for this occupation.

Occupational Requirements

Work Activities

5 of 30 displayed

- **Establishing and Maintaining Interpersonal Relationships** — Developing constructive and cooperative working relationships with others, and maintaining them over time.
- **Communicating with Supervisors, Peers, or Subordinates** — Providing information to supervisors, co-workers, and subordinates by telephone, in written form, e-mail, or in person.
- **Making Decisions and Solving Problems** — Analyzing information and evaluating results to choose the best solution and solve problems.
- **Developing and Building Teams** — Encouraging and building mutual trust, respect, and cooperation among team members.
- **Analyzing Data or Information** — Identifying the underlying principles, reasons, or facts of information by breaking down information or data into separate parts.

Detailed Work Activities

5 of 23 displayed

- Estimate cost or material requirements.
- Estimate labor requirements.
- Manage inventories of products or organizational resources.
- Develop operating strategies, plans, or procedures.
- Develop procedures to evaluate organizational activities.

Work Context

5 of 25 displayed

- **E-Mail** — 100% responded “Every day.”
- **Telephone Conversations** — 100% responded “Every day.”
- **Face-to-Face Discussions with Individuals and Within Teams** — 90% responded “Every day.”
- **Duration of Typical Work Week** — 85% responded “More than 40 hours.”
- **Work With or Contribute to a Work Group or Team** — 60% responded “Extremely important.”

Experience Requirements

Job Zone

Title	Job Zone Four: Considerable Preparation Needed
Education	Most of these occupations require a four-year bachelor's degree, but some do not.
Related Experience	A considerable amount of work-related skill, knowledge, or experience is needed for these occupations. For example, an accountant must complete four years of college and work for several years in accounting to be considered qualified.
Job Training	Employees in these occupations usually need several years of work-related experience, on-the-job training, and/or vocational training.
Job Zone Examples	Many of these occupations involve coordinating, supervising, managing, or training others. Examples include real estate brokers, sales managers, database administrators, graphic designers, conservation scientists, art directors, and cost estimators.
SVP Range	(7.0 to < 8.0)

Training & Credentials

State training Select a State Go

Local training ZIP Code Go

Certifications Find certifications nationwide

Apprenticeship Opportunities

Start your career and build your skillset. Visit **Apprenticeship.gov** to learn about opportunities related to this occupation.

Worker Requirements

Skills

5 of 22 displayed

- **Active Listening** — Giving full attention to what other people are saying, taking time to understand the points being made, asking questions as appropriate, and not interrupting at inappropriate times.
- **Coordination** — Adjusting actions in relation to others' actions.
- **Judgment and Decision Making** — Considering the relative costs and benefits of potential actions to choose the most appropriate one.
- **Monitoring** — Monitoring/Assessing performance of yourself, other individuals, or organizations to make improvements or take corrective action.
- **Reading Comprehension** — Understanding written sentences and paragraphs in work-related documents.

Knowledge

5 of 10 displayed

- **Transportation** — Knowledge of principles and methods for moving people or goods by air, rail, sea, or road, including the relative costs and benefits.
- **Administration and Management** — Knowledge of business and management principles involved in strategic planning, resource allocation, human resources modeling, leadership technique, production methods, and coordination of people and resources.
- **English Language** — Knowledge of the structure and content of the English language including the meaning and spelling of words, and rules of composition and grammar.
- **Economics and Accounting** — Knowledge of economic and accounting principles and practices, the financial markets, banking, and the analysis and reporting of financial data.
- **Customer and Personal Service** — Knowledge of principles and processes for providing customer and personal services. This includes customer needs assessment, meeting quality standards for services, and evaluation of customer satisfaction.

Education

How much education does a new hire need to perform a job in this occupation? Respondents said:

67% Bachelor's degree required

19% Master's degree required

10% Post-baccalaureate certificate required

Worker Characteristics

Abilities

5 of 18 displayed

- **Oral Comprehension** — The ability to listen to and understand information and ideas presented through spoken words and sentences.
- **Oral Expression** — The ability to communicate information and ideas in speaking so others will understand.
- **Written Comprehension** — The ability to read and understand information and ideas presented in writing.
- **Written Expression** — The ability to communicate information and ideas in writing so others will understand.
- **Deductive Reasoning** — The ability to apply general rules to specific problems to produce answers that make sense.

Interests

All 2 displayed

Interest code: **EC**

Want to discover your interests? Take the **O*NET Interest Profiler**.

- **Enterprising** — Work involves managing, negotiating, marketing, or selling, typically in a business setting, or leading or advising people in political and legal situations. Enterprising occupations are often associated with business initiatives, sales, marketing/advertising, finance, management/administration, professional advising, public speaking, politics, or law.
- **Conventional** — Work involves following procedures and regulations to organize information or data, typically in a business setting. Conventional occupations are often associated with office work, accounting, mathematics/statistics, information technology, finance, or human resources.

Work Styles

5 of 7 displayed

- **Initiative** — A tendency to be proactive and take on extra responsibilities and tasks that may fall outside of one's required work role.
- **Leadership Orientation** — A tendency to lead, take charge, offer opinions, and provide direction at work.
- **Adaptability** — A tendency to be open to and comfortable with change, new experiences, or ideas at work.
- **Achievement Orientation** — A tendency to establish and maintain personally challenging work-related goals, set high work-related standards, and exert high effort toward meeting those goals and standards.
- **Integrity** — A tendency to be honest and ethical at work.

Workforce Characteristics

Wages & Employment Trends

Median wage data for **Transportation, Storage, and Distribution Managers**.
Employment data for **Transportation, Storage, and Distribution Managers**.
Industry data for **Transportation, Storage, and Distribution Managers**.

Median wages (2024)	$49.05 hourly, $102,010 annual
State wages	Select a State Go
Local wages	ZIP Code Go
Employment (2024)	216,700 employees
Projected growth (2024-2034)	Faster than average (5% to 6%)
Projected job openings (2024-2034)	18,500
State trends	Select a State Go
Top industries (2024)	Transportation and Warehousing Wholesale Trade

Source: Bureau of Labor Statistics 2024 wage data and 2024-2034 employment projections. "Projected growth" represents the estimated change in total employment over the projections period (2024-2034). "Projected job openings" represent openings due to growth and replacement.

Job Openings on the Web

State job openings	Select a State Go
Local job openings	ZIP Code Go

More Information

Related Occupations

5 of 10 displayed

- 13-1081.00 Logisticians
- 13-1081.02 Logistics Analysts
- 13-1081.01 Logistics Engineers
- 11-3061.00 Purchasing Managers
- 11-3071.00 Transportation, Storage, and Distribution Managers

Professional Associations

Disclaimer: Sources are listed to provide additional information on related jobs, specialties, and/or industries. Links to non-DOL Internet sites are provided for your convenience and do not constitute an endorsement.

National Associations

- Association for Supply Chain Management ALLY
- Council of Logistics Engineering Professionals
- Institute for Supply Management

Accreditation, Certification, & Unions

- Council of Supply Chain Management Professionals

O*NET OnLine

Occupation keyword search

electrician Go

Administrative Services Managers

11-3012.00

Bright Outlook Updated 2025

Plan, direct, or coordinate one or more administrative services of an organization, such as records and information management, mail distribution, and other office support services.

Sample of reported job titles: Administrative Coordinator, Administrative Director, Administrative Manager, Administrative Officer, Administrator, Business Administrator, Business Manager

Summary Details Custom Easy Read Veterans Español

Contents

Occupation-Specific Information

Tasks

5 of 18 displayed

- Prepare and review operational reports and schedules to ensure accuracy and efficiency.
- Set goals and deadlines for the department.
- Acquire, distribute and store supplies.
- Analyze internal processes and recommend and implement procedural or policy changes to improve operations, such as supply changes or the disposal of records.
- Conduct classes to teach procedures to staff.

Technology Skills

5 of 30 displayed

- **Accounting software** — Fund accounting software; Intuit QuickBooks; Sage 50 Accounting
- **Data base user interface and query software** — Database software; Microsoft Access; Sage 300 Construction and Real Estate; Yardi software
- **Electronic mail software** — Email software; IBM Notes; MicroFocus GroupWise; Microsoft Outlook
- **Enterprise resource planning ERP software** — Microsoft Dynamics; Oracle PeopleSoft; Sage MAS 200 ERP; SAP software
- **Word processing software** — Google Docs; Microsoft Word

Hot Technologies are requirements most frequently included across all employer job postings.
See all 22 Hot Technologies for this occupation.

In Demand skills are frequently included in employer job postings for this occupation.
See all 5 In Demand skills for this occupation.

Occupational Requirements

Work Activities

5 of 34 displayed

- **Getting Information** — Observing, receiving, and otherwise obtaining information from all relevant sources.
- **Communicating with Supervisors, Peers, or Subordinates** — Providing information to supervisors, co-workers, and subordinates by telephone, in written form, e-mail, or in person.
- **Organizing, Planning, and Prioritizing Work** — Developing specific goals and plans to prioritize, organize, and accomplish your work.
- **Making Decisions and Solving Problems** — Analyzing information and evaluating results to choose the best solution and solve problems.
- **Scheduling Work and Activities** — Scheduling events, programs, and activities, as well as the work of others.

Detailed Work Activities

5 of 23 displayed

- Prepare operational budgets.
- Hire personnel.
- Direct administrative or support services.
- Develop organizational goals or objectives.
- Prepare operational progress or status reports.

Work Context

5 of 22 displayed

- **E-Mail** — 96% responded “Every day.”
- **Face-to-Face Discussions with Individuals and Within Teams** — 90% responded “Every day.”
- **Telephone Conversations** — 80% responded “Every day.”
- **Work With or Contribute to a Work Group or Team** — 60% responded “Extremely important.”
- **Contact With Others** — 55% responded “Constant contact with others.”

Experience Requirements

Job Zone

Title	Job Zone Three: Medium Preparation Needed
Education	Most occupations in this zone require training in vocational schools, related on-the-job experience, or an associate's degree.
Related Experience	Previous work-related skill, knowledge, or experience is required for these occupations. For example, an electrician must have completed three or four years of apprenticeship or several years of vocational training, and often must have passed a licensing exam, in order to perform the job.
Job Training	Employees in these occupations usually need one or two years of training involving both on-the-job experience and informal training with experienced workers. A recognized apprenticeship program may be associated with these occupations.
Job Zone Examples	These occupations usually involve using communication and organizational skills to coordinate, supervise, manage, or train others to accomplish goals. Examples include hydroelectric production managers, desktop publishers, electricians, agricultural technicians, barbers, court reporters and simultaneous captioners, and medical assistants.
SVP Range	(6.0 to < 7.0)

Training & Credentials

State training Select a State Go

Local training ZIP Code Go

Certifications Find certifications nationwide

Apprenticeship Opportunities

Start your career and build your skillset. Visit **Apprenticeship.gov** to learn about opportunities related to this occupation.

Worker Requirements

Skills

5 of 19 displayed

- **Active Listening** — Giving full attention to what other people are saying, taking time to understand the points being made, asking questions as appropriate, and not interrupting at inappropriate times.
- **Reading Comprehension** — Understanding written sentences and paragraphs in work-related documents.
- **Time Management** — Managing one's own time and the time of others.
- **Speaking** — Talking to others to convey information effectively.
- **Coordination** — Adjusting actions in relation to others' actions.

Knowledge

5 of 8 displayed

- **Customer and Personal Service** — Knowledge of principles and processes for providing customer and personal services. This includes customer needs assessment, meeting quality standards for services, and evaluation of customer satisfaction.
- **Administration and Management** — Knowledge of business and management principles involved in strategic planning, resource allocation, human resources modeling, leadership technique, production methods, and coordination of people and resources.
- **English Language** — Knowledge of the structure and content of the English language including the meaning and spelling of words, and rules of composition and grammar.
- **Administrative** — Knowledge of administrative and office procedures and systems such as word processing, managing files and records, stenography and transcription, designing forms, and workplace terminology.
- **Computers and Electronics** — Knowledge of circuit boards, processors, chips, electronic equipment, and computer hardware and software, including applications and programming.

Education

How much education does a new hire need to perform a job in this occupation? Respondents said:

34% High school diploma or equivalent required

24% Bachelor's degree required

13% Post-secondary certificate required

Worker Characteristics

Abilities

5 of 16 displayed

- **Oral Comprehension** — The ability to listen to and understand information and ideas presented through spoken words and sentences.
- **Oral Expression** — The ability to communicate information and ideas in speaking so others will understand.
- **Written Comprehension** — The ability to read and understand information and ideas presented in writing.
- **Written Expression** — The ability to communicate information and ideas in writing so others will understand.
- **Deductive Reasoning** — The ability to apply general rules to specific problems to produce answers that make sense.

Interests

All 3 displayed

Interest code: **ECS**

Want to discover your interests? Take the **O*NET Interest Profiler**.

- **Enterprising** — Work involves managing, negotiating, marketing, or selling, typically in a business setting, or leading or advising people in political and legal situations. Enterprising occupations are often associated with business initiatives, sales, marketing/advertising, finance, management/administration, professional advising, public speaking, politics, or law.
- **Conventional** — Work involves following procedures and regulations to organize information or data, typically in a business setting. Conventional occupations are often associated with office work, accounting, mathematics/statistics, information technology, finance, or human resources.
- **Social** — Work involves helping, teaching, advising, assisting, or providing service to others. Social occupations are often associated with social, health care, personal service, teaching/education, or religious activities.

Work Styles

All 1 displayed

- **Dependability** — A tendency to be reliable, responsible, and consistent in meeting work-related obligations.

Workforce Characteristics

Wages & Employment Trends

Median wages (2024)	$52.11 hourly, $108,390 annual
State wages	Select a State Go
Local wages	ZIP Code Go
Employment (2024)	271,200 employees
Projected growth (2024-2034)	Faster than average (5% to 6%)
Projected job openings (2024-2034)	23,200

State trends Select a State Go

Top industries (2024)
Government
Health Care and Social Assistance

Source: Bureau of Labor Statistics 2024 wage data and 2024-2034 employment projections. "Projected growth" represents the estimated change in total employment over the projections period (2024-2034). "Projected job openings" represent openings due to growth and replacement.

Job Openings on the Web

State job openings Select a State Go

Local job openings ZIP Code Go

More Information

Related Occupations

5 of 10 displayed

- 15-1299.03 Document Management Specialists
- 43-6011.00 Executive Secretaries and Executive Administrative Assistants
- 43-1011.00 First-Line Supervisors of Office and Administrative Support Workers
- 11-1021.00 General and Operations Managers
- 13-1082.00 Project Management Specialists

Professional Associations

Disclaimer: Sources are listed to provide additional information on related jobs, specialties, and/or industries. Links to non-DOL Internet sites are provided for your convenience and do not constitute an endorsement.

National Associations

5 of 7 displayed

- American Society for Public Administration
- ARMA International
- Association of Executive and Administrative Professionals
- International Facility Management Association
- National Association of College and University Business Officers

Accreditation, Certification, & Unions

- Institute of Certified Records Managers

C.II – Second Prong – Well-Positioned to Advance the Proposed Endeavor

FEDERATIVE REPUBLIC OF BRAZIL
FEDERAL COUNCIL OF ADMINISTRATION
REGIONAL COUNCIL OF ADMINISTRATION

CFA/CRAs SYSTEM
(CFA: Federal Council of Administration
CRA: Regional Council of Administration)

PROFESSIONAL IDENTIFICATION CARD

REGISTRATION
33349

REGISTRATION DATE
06/19/2024

COPY
1st



NAME
JACKSON MARQUES DOS SANTOS

LICENSE
ADMINISTRATOR

IDENTIFICATION DOCUMENT
390106604

ISSUING AUTHORITY
SSP/SP

CPF
331.338.218-57

HAS PUBLIC FAITH THROUGHOUT THE NATIONAL TERRITORY – LAW NO. 6,206/75

FILIATION
MARIA NILZA MARQUES DOS SANTOS
JOSÉ ALVES MARQUES DOS SANTOS

CRA-BA

DATE OF BIRTH
03/31/1986

NATIONALITY
BRAZILIAN

PLACE OF BIRTH
NOVA SOURE - BAHIA

Salvador - BA 06/20/2024

PLACE AND DATE OF ISSUE

ADM. MÁRCIO DE MIRANDA LEITE E OITICICA
PRESIDENT OF CRA-BA

HAS PUBLIC FAITH THROUGHOUT THE NATIONAL TERRITORY – LAW NO. 6,206/75

I, Carolina Favero da Silva, telephone number 415 425-2508, mailing address P.O. Box 90487, San Diego, CA 92169, certify that the professional translation of this document from Portuguese to English has been performed by myself, a qualified translator fluent in both languages, and that the following is an accurate and complete translation of the document.



_____ Date: July 15, 2025.

REPÚBLICA FEDERATIVA DO BRASIL
CONSELHO FEDERAL DE ADMINISTRAÇÃO
CONSELHO REGIONAL DE ADMINISTRAÇÃO

SISTEMA CFA/CRAs

CARTEIRA DE IDENTIDADE PROFISSIONAL

REGISTRO
33349

DAT REG.
19/06/2024

VIA
1ª



NOME
JACKSON MARQUES DOS SANTOS

HABILITAÇÃO
ADMINISTRADOR

DOC.IDENTIFICAÇÃO
390106604

ÓRGÃO EXPEDIDOR
SSP/SP

CPF
331.338.218-57

TEM FE PÚBLICA EM TODO O TERRITÓRIO NACIONAL - LEI Nº 6.206/75

FILIAÇÃO
MARIA NILZA MARQUES DOS SANTOS
JOSÉ ALVES MARQUES DOS SANTOS

CRA-BA

NASCIMENTO
31/03/1986

NACIONALIDADE
BRASILEIRO

NATURALIDADE
NOVA SOURE - BA

Salvador - BA 20/06/2024

LOCAL E DATA DE EXP.

ADM. MÁRCIO DE MIRANDA LEITE E OITICICA
PRESIDENTE DO CRA-BA

TEM FÉ PÚBLICA EM TODO O TERRITÓRIO NACIONAL - LEI Nº 6.206/75

PROFESSIONAL LICENSE DECLARATION

By order and on behalf of the President, Adm. Ramiro Lubian Carbalhal, we hereby declare for all due purposes that the **ADMINISTRATOR - JACKSON MARQUES DOS SANTOS**, CPF No. **331.338.218-57**, is registered with this Federal Autarchy under No. **33349**, residing at **RUA LÚCIO BENTO CARDOSO, No. 04 - CENTRO - ALAGOINHAS - Bahia - ZIP Code: 48000-057**, since **06/19/2024**. We further declare that he is qualified for the full exercise of his professional activities in accordance with Law No. 4,769/65, the Regulation approved by Decree No. 61,934/67, and other applicable legislation, and is therefore not excluded from the practice of the profession before the Regional Council of Administration of Bahia - CRA-BA.

This declaration **DOES NOT** constitute proof of financial regularity or settlement of debts with this Council.

Salvador/Bahia, **06/02/2025**.

The authenticity of this document can be verified at:
https://craba.implanta.net.br/servicosOnline/Publico/ValidarDocumentos/
by entering the control number: **c8880adf-2377-4c3f-b1da-9fe350a272d7**

I, Carolina Favero da Silva, telephone number 415 425-2508, mailing address P.O. Box 90487, San Diego, CA 92169, certify that the professional translation of this document from Portuguese to English has been performed by myself, a qualified translator fluent in both languages, and that the following is an accurate and complete translation of the document.


_____ Date: July 17, 2025.

DECLARAÇÃO DE HABILITAÇÃO PROFISSIONAL

De ordem e em nome do(a) Senhor(a) Presidente, Adm. Ramiro Lubian Carbalhal, declaramos para os devidos fins que o(a) **ADMINISTRADOR(A) - JACKSON MARQUES DOS SANTOS,** CPF nº **331.338.218-57,** é inscrito nesta Autarquia Federal sob o nº **33349,** residente em **RUA LUCIO BENTO CARDOSO, Nº 04 - CENTRO - ALAGOINHAS - BA - CEP: 48000057** desde **19/06/2024,** declara ainda que está habilitado(a) para o pleno exercício de suas atividades profissionais nos termos da Lei nº 4.769/65, Regulamento aprovado pelo Decreto nº 61.934/67 e demais legislações, não estando, portanto, excluído(a) do exercício da profissão, perante o Conselho Regional de Administração da Bahia - CRA-BA.

A presente declaração **NÃO** comprova regularidade financeira e nem quitação de débitos com este Conselho.

Salvador/BA, **02/06/2025**.

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REGISTRATION DECLARATION

We hereby declare, for all due purposes, that the **ADMINISTRATOR JACKSON MARQUES DOS SANTOS**, CPF **331.338.218-57**, residing at **RUA LUCIO BENTO CARDOSO, No. 04 - CENTRO - ALAGOINHAS - BAHIA - ZIP CODE: 48000057**, is registered with this Federal Autarchy under No. **33349**, since **06/19/2024**.

Salvador/Bahia, **06/04/2025**

The authenticity of this document can be verified at:
http://craba.implanta.net.br/servicosOnline, by entering the control number:
9c9a5dd8-dac0-4542-a8ea-d8ce552b626d

I, Carolina Favero da Silva, telephone number 415 425-2508, mailing address P.O. Box 90487, San Diego, CA 92169, certify that the professional translation of this document from Portuguese to English has been performed by myself, a qualified translator fluent in both languages, and that the following is an accurate and complete translation of the document.


_____ Date: July 17, 2025.

DECLARAÇÃO DE REGISTRO

Declaramos para os devidos fins que o(a) **ADMINISTRADOR(A) JACKSON MARQUES DOS SANTOS**, CPF **331.338.218-57,** residente **RUA LUCIO BENTO CARDOSO, Nº 04 - CENTRO - ALAGOINHAS - BA - CEP: 48000057,** é inscrito nesta Autarquia Federal sob o nº **33349**, desde **19/06/2024.**

Salvador/BA, **04/06/2025**

A autenticidade do documento pode ser conferida no site http://cra-ba.implanta.net.br/servicosOnline, informando o número de controle:
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ADM
Brazilian Association
of Administration
Name:
JACKSON M. DOS SANTOS
Registration:
2226295
Assembly/Approval Date:
03/19/2025

ADM
Brazilian Association
of Administration

I, Carolina Favero da Silva, telephone number 415 425-2508, mailing address P.O. Box 90487, San Diego, CA 92169, certify that the professional translation of this document from Portuguese to English has been performed by myself, a qualified translator fluent in both languages, and that the following is an accurate and complete translation of the document.



_____ Date: July 10, 2025.

ADM | Associação Brasileira de Administração

Nome:

JACKSON M. DOS SANTOS

Matrícula:

2226295

Data Assembleia/Aprovação::

19/03/2025

ADM | Associação Brasileira de Administração

DECLARATION OF ASSOCIATION

ADM BRAZILIAN ASSOCIATION OF ADMINISTRATION, duly registered with CNPJ No. 09.005.454/0001-20, with its head office at Avenida Paulista No. 1159, suite 1316, room 01, Bela Vista district, ZIP code 01.311-200, in the Capital of the State of São Paulo, under the terms of its bylaws, declares for all due purposes and to whom it may concern that **Mr. JACKSON MARQUES DOS SANTOS**, bearer of ID number **390106604**, registered with **CPF/MF No. 331.338.218-57**, applied for membership in this entity on 02/21/2025, with approval of membership in the Assembly on 03/19/2025, and is in good standing with membership dues.

São Paulo, March 20, 2025

CYNTHIA CRISTINA GRAMORELLI:18268094818

Digitally signed by CYNTHIA CRISTINA GRAMORELLI:18268094818
Data: 2025.03.19 11:16:05 AM-03.00'

ADM - Brazilian Association of Administration

Cynthia Gramorelli

Executive Manager

I, Carolina Favero da Silva, telephone number 415 425-2508, mailing address P.O. Box 90487, San Diego, CA 92169, certify that the professional translation of this document from Portuguese to English has been performed by myself, a qualified translator fluent in both languages, and that the following is an accurate and complete translation of the document.



_____ Date: July 10, 2025.

ADM | Associação Brasileira de Administração

DECLARAÇÃO DE ASSOCIAÇÃO

A ADM ASSOCIAÇÃO BRASILEIRA DE ADMINISTRAÇÃO, devidamente inscrita no CNPJ nº 09.005.454/0001-20 com sede a Avenida Paulista nº1159 no conjunto 1316, sala 01, bairro Bela Vista, CEP-01.311-200, na Capital do Estado de São Paulo, nos termos do seu estatuto, declara para os devidos fins e a quem de direito interessar que a **Sr. JACKSON MARQUES DOS SANTOS** portador (a) do **RG 390106604**, inscrito(a) no **CPF/MF nº 331.338.218-57**, solicitou a sua associação nesta entidade em 21/02/2025 com aprovação de associação efetivada em assembleia em 19/03/2025, estando regular com a contribuição associativa.

São Paulo, 20 de Março 2025

CYNTHIA CRISTINA GRAMORELLI:18268094818

Assinado de forma digital por CYNTHIA CRISTINA GRAMORELLI:18268094818
Dados: 2025.03.19 11:16:05 -03'00'

ADM- Associação Brasileira de Administração

Cynthia Gramorelli
Gerente Executiva

BYLAWS OF THE BRAZILIAN ASSOCIATION OF ADMINISTRATION
CNPJ: 09.005.454/0001-20
2nd AMENDMENT

Chapter I

Name, Duration, Headquarters, and Purpose of the Association

Art. 1 - The BRAZILIAN ASSOCIATION OF ADMINISTRATION - founded on 06/13/2007, hereinafter referred to as ADM - BRAZILIAN ASSOCIATION OF ADMINISTRATION, is an association under the terms of Article 53 of the Civil Code, with a representative, technical-scientific, and cultural nature, without any profit-making purposes, with an indefinite duration. Its headquarters and legal domicile are located in the Capital of the State of São Paulo, at Avenida Paulista, 1159 – Suite 1316 - 13th floor - Bela Vista - ZIP Code 01311-921, and it shall be governed by these bylaws and the applicable laws.

Art. 2 - ADM has the following purposes:

a) to bring together all those in Brazil who engage in Administration activities under the terms of Article 2 of Law 4,769 of September 9, 1965;

b) to promote the advancement and dissemination of knowledge in the science of Administration through study meetings, research, courses, seminars, congresses, publications, promotions, and equivalent activities;

c) to create or contract administrative, legal, technical, or equivalent consulting services to meet the needs of the class;

d) to collaborate with the State, as a technical and consultative body, in the study and resolution of problems related to the represented category;

e) to maintain exchange with technicians and related technical associations;

f) to promote the qualification and certification of companies;

g) to promote cultural activities;

h) Rental of spaces for events, congresses, seminars;

i) Planning, organizing, and managing fairs, exhibitions, and congresses;

j) Instruction, training, pedagogical, and educational guidance services.

SOLE PARAGRAPH - To achieve its purposes, **ADM**, a non-profit entity, may produce, develop, and distribute its own or third-party periodic publications for the dissemination of works, presentation of technical articles, studies, and other news of interest;

Art. 3 - In the development of its activities, **ADM** shall observe the principles of legality, impersonality, morality, publicity, economy, and efficiency and shall not discriminate based on race, color, gender, or religion.

Art. 4 - In order to fulfill its purposes, **ADM** shall organize itself into as many Sectoral Service Committees as necessary, which shall be governed by statutory and regimental provisions.

R. T. D. P. J.

Chapter II

Of the Members, Their Admission, Exclusion, Resignation, Rights, Duties, and Penalties

Art. 5 - Individuals and companies that engage in administrative activities under the terms of Law No. 4,769, dated September 9, 1965, as well as individuals, companies, or organizations that carry out related activities and agree with these bylaws, may become members of **ADM**.

Art. 6 - ADM is composed of an unlimited number of members, distributed into the following categories:

a) **Founding Members -** those who were elected to the administration of **ADM** at the Constitutive Assembly;

b) **Effective Members -** those who were admitted in accordance with Article 5 above;

c) **Distinguished Members -** those who have rendered relevant services to **ADM** or to the science of Administration. The respective title may be granted through a proposal by the Board, approved by all members, without any financial obligation arising from this distinction;

d) **Honorary Members -** individuals who have also rendered relevant services to **ADM** or to the science of Administration. The respective title may be granted through a proposal by the Board, approved by all members, without any financial obligation arising from this distinction.

§ 1 - Guests who signed the attendance list will not be considered founding members.

§ 2 - Those who apply and obtain approval from two-thirds (2/3) of the members of the Executive Board shall be admitted as members.

§ 3 - Membership status is non-transferable and, regardless of category, members shall not hold any quota or ideal share of **ADM**'s assets**.**

§ 4 - Members will not be reimbursed for contributions made at the time of **ADM**'s founding or for any contributions made subsequently in its favor.

§ 5 - Each member, up to date with the treasury, shall have the right to one (1) vote at the General Assemblies

Art. 7 - In the event of any ethical, moral, scientific, or professional violation, the following penalties may be applied:

a) written warning;

b) public reprimand;

c) suspension of membership status for a period not exceeding 180 days;

d) exclusion from the membership roster;

Art. 8 - A member who deliberately requests her resignation from the membership, in writing, shall be dismissed.

Art. 9 - A member shall be expelled from **ADM** when:

a) commits any act contrary to these bylaws or that discredits it, or that may harm the reputation or integrity of **ADM;**

b) fails to pay the due contribution, without justified reason, for more than three (3) months, after prior written notification.

§ 1 - The investigation of offenses and the application of any penalties, as provided in Articles 7 and 9, shall be the responsibility of the Ethics Committee.

§ 2 - Once the offense is proven, the Ethics Committee may apply the penalty provided in item "a" of Art. 7; the other penalties will only be applied after approval by the General Assembly, guaranteeing the offending member full right of defense.

Art. 10 - The rights of all contributing members of **ADM** are**:**

a) to attend the entity's headquarters and make use of the headquarters and all its services;

b) to participate in the work, studies, congresses, conferences, fairs, and events promoted by **ADM**, in accordance with the regulatory rules of each event;

c) to have access to the conclusions of studies and materials prepared by **ADM** through its publications;

d) to be assured full right of defense in ethical-disciplinary proceedings;

e) to participate in the General Assemblies, provided they are up to date with their contributions;

Sole Paragraph - the rights of the members are non-transferable.

Art. 11 - The following rights are exclusive to Founding Members and Effective Members:

a) to vote and be elected for the association's leadership positions;

b) to convene a General Assembly under the terms of Article 16.



Art. 12 - The duties of the members are:

a) to support **ADM** by all means within their reach so that it fulfills its purposes, to promote the spirit of association, and to seek to recruit new members for the association's ranks;

b) to properly perform the duties of any position to which they have been elected and in which they have been invested;

c) to comply with the decisions of the General Assemblies and the Board of Directors;

d) to pay their contributions promptly;

e) to comply with the statutory and regimental provisions.

Art.13 - Members are not liable, not even subsidiarily, for A**DM**'s obligations**.**

Chapter III

Of the Statutory Bodies

Art. 14 - The following bodies are responsible for the organization, supervision, and administration of **ADM**:



a) General Assembly;

b) Executive Board;

c) Fiscal Council;

d) Advisory Council

The General Meeting

Art. 15 - The General Assembly, whether Ordinary or Extraordinary, the sovereign deliberative body of **ADM**, shall be composed of members who are up to date with their social obligations

Art. 16 - The exclusive responsibilities of the General Assembly are:



a) to elect the Executive Board and the Fiscal Council;

b) to remove members of the Executive Board and the Fiscal Council;

c) to decide on amendments to the Bylaws;

d) to deliberate on the Executive Board's annual report and accounts after the Fiscal Council's review;

e) to deliberate on the exclusion of members;

f) to decide on the extinction or dissolution of **ADM**.

§ 1 - For the decisions referred to in items "a" to "f" of this article, the agreement of two-thirds (2/3) of those present at the assembly specially convened for the purpose is required, with an absolute majority of members present at the first call and one-third (1/3) at the second and subsequent calls; proxy voting is not allowed.

§ 2 - For the purpose of verifying the quorum referred to in this article, the number of members present at each call shall be determined by the signatures recorded in the Attendance Book.

§ 3 - Ordinary and Extraordinary General Assemblies may be held remotely, using any technological tool and its mechanisms to verify attendance; a simple copy of a participant's declaration expressing their agreement with the resolutions related to the agenda may also be used for this purpose.

§ 4 - Electronic signatures may be used in the minutes of the Ordinary and Extraordinary General Assemblies.

§ 5 - The electronic registration of **ADM** documents may be used, including the minutes of the Ordinary and Extraordinary General Assemblies.

Art. 17 - Ordinary General Assemblies shall be held once a year, in accordance with these bylaws, on dates and at locations set by the Board of Directors; Extraordinary General Assemblies may be convened by the President of **ADM**, with one-fifth of the members guaranteed the right to initiate them.

Art. 18 - Annually, the Ordinary General Assembly shall deliberate on the Activity Report and the Financial Statements of the Executive Board, and every four years it shall elect the Executive Board and the Fiscal Council.

Sole Paragraph - The Sectoral Committees shall be coordinated by Directors, appointed for this purpose by the Executive Board, who shall be responsible for the development of specific sectoral activities

Art. 37 - The Ethics Committee is hereby established.



Chapter VI

Of the Superintendent Director and the Heads of Departments

Art. 38 - Auxiliary positions to the Executive Board in the administration of **ADM** include, among others that may be created, the Superintendent Director and the Heads of the Economic, Legal, and Technical Departments.

Sole paragraph - The positions mentioned in the main paragraph are remunerated.

Chapter VII

Of Financial Resources

Art. 39 - The financial resources necessary for the maintenance of **ADM** may be obtained through:

a) Partnership Agreements, Contracts, and Covenants entered into with Public Authorities to finance projects in its field of activity;

b) Contracts and agreements signed with companies, universities, and national and international agencies;

c) Donations, bequests, and inheritances received;

d) Income from investments of its financial assets and others related to its patrimony;

e) Contributions from members;

f) Revenues earned through activities involving industrial/intellectual property;

g) Net results from its statutory activities, such as provision of services, courses, symposiums, congresses, fairs, and the production, development, and distribution of its own or third-party periodic publications for the dissemination of works, presentation of technical articles, studies, and other news of interest, as well as other activities.

Chapter VIII

Of the Patrimony, Duration, and Dissolution

Art. 40 - The patrimony of **ADM**, managed by the Executive Board, shall consist of members' contributions, donations, bequests, movable and immovable property and other acquired assets, as well as the income generated by them, all in accordance with the list provided in Art. 39 above.

Sole Paragraph - Income titles, as well as immovable property, may only be disposed of through a vote or the explicit waiver of the vote by each member.

Art. 41 - ADM shall have an indefinite duration but may be dissolved at any time by a resolution of the Extraordinary General Assembly, with at least two-thirds (2/3) of its members voting in favor. In such case, the net assets shall be allocated to any other class entity, non-profit, of civil or union nature, headquartered in the State of São Paulo, representing the category of Administrators.

Art. 42 - These Bylaws may be amended at any time by the absolute majority of the members, in a General Assembly specially convened for this purpose, observing the provisions of paragraph 2 of article 19, and shall come into effect on the date of its approval at the General Assembly, regardless of its registration at the Registry Office of Legal Entities, in accordance with the law.

Art. 43 - Omitted cases shall be resolved by the Executive Board.

São Paulo, July 15, 2020

-----//Signature//----
Adm. Carlos Eduardo Uchôa Fagundes
President

Cynthia Cristina Gramorelli
OAB/SP 188 440

12th NOTARY PUBLIC JOSE NICOLA SPOSITO
REGISTRY OFFICE OF THE 12th NOTARY PUBLIC OF SÃO PAULO - SP
Alameda Santos, 1.470 - São Paulo - SP - ZIP: 01418-100
JOSÉ NICOLA SPÓSITO - INTERIM NOTARY PHONE (11) 3549-4277
I certify by similarity 1 signature without economic value of CARLOS EDUARDO UCHOA FAGUNDES and I certify **********
Seal: 1042AC114684 NOTARY PUBLIC
SÃO PAULO, September 8, 2020, Time: 2:26 PM
In witness of _____ the truth. Amount R$ 6.45
CLEBER GONCALVES – CLERK
Notarial College of Brazil São Paulo Section 114462 SIGNATURE 1
S1042AC0114684
REGISTRY OFFICE OF THE 12th NOTARY PUBLIC 1470 Cleber Gonçalves Authorized Clerk

I, Carolina Favero da Silva, telephone number 415 425-2508, mailing address P.O. Box 90487, San Diego, CA 92169, certify that the professional translation of this document from Portuguese to English has been performed by myself, a qualified translator fluent in both languages, and that the following is an accurate and complete translation of the document.



_____ Date: July 11, 2025.

ADM | Associação Brasileira de Administração

ESTATUTO SOCIAL DA ASSOCIAÇÃO BRASILEIRA DE ADMINISTRAÇÃO

CNPJ: 09.005.454/0001-20

2ª ATERAÇÃO

R. T. D. P. J.

Capítulo I

Denominação, Prazo, Sede e Fins da Associação

Art. 1º - A ASSOCIAÇÃO BRASILEIRA DE ADMINISTRAÇÃO – fundada em 13/06/2007, doravante designada por ADM- ASSOCIAÇÃO BRASILEIRA DE ADMINISTRAÇÃO, é uma associação nos termos do artigo 53 do Código Civil, de caráter representativo, técnico-cientifico e cultural, sem quaisquer fins lucrativos, com prazo de duração indeterminado, com sede e foro na Capital do Estado de São Paulo, na Av. Paulista, 1159 – Conj. 1316 – 13º andar - Bela Vista CEP 01311-921, que se regerá pelo presente estatuto e pelas leis aplicáveis à espécie.

Art. 2º - A **ADM** tem por finalidade:

a) congregar todos que no Brasil, exerçam atividades de Administração nos termos do Artigo 2º. da Lei 4.769 de 09 de setembro de 1965;

b) promover o progresso e a divulgação dos conhecimentos da ciência da Administração, por meio de reuniões de estudo, pesquisas, cursos, seminários, congressos, publicações e promoções, bem como equivalentes;

c) criar ou contratar serviços de consultoria administrativa, jurídica, técnica ou equivalente, para atender as necessidades da classe;

d) colaborar com o Estado, como órgão técnico e consultivo, no estudo e solução de problemas que se relacionem com a categoria representada;

e) manter intercâmbio com técnicos e associações técnicas congêneres;

f) promover a qualificação e certificação de empresas;

g) promover atividades culturais;

h) Locação de espaços para eventos, congressos, seminários;

i) Planejamento, organização e administração de feiras, exposições e congressos;

j) Serviços de instrução, treinamento, orientação pedagógica e educacional.

PARÁGRAFO ÚNICO – Para atingir suas finalidades, a **ADM**, entidade sem fins lucrativos, poderá produzir, desenvolver e distribuir publicação periódica própria ou para terceiros, para divulgação de trabalhos, apresentação de artigos técnicos, estudos e demais notícias de interesse;

Art. 3º - No desenvolvimento de suas atividades, a **ADM** observará os princípios da legalidade, impessoalidade, moralidade, publicidade, economicidade e da eficiência e não fará qualquer discriminação de raça, cor, gênero ou religião.

Art. 4º - A fim de cumprir suas finalidades a **ADM** se organizará em tantas Comissões Setoriais de prestação de serviços, quantas se fizerem necessárias, as quais se regerão pelas disposições estatutárias e regimentais.

R. T. D. P. J.

Capítulo II

Das Associadas, sua Admissão, Exclusão, Demissão, Direitos, Deveres e Penalidades

Art. 5º - Poderão ser associadas da **ADM** todas as pessoas físicas e empresas que exerçam atividades de Administração nos termos da Lei n.º 4.769, de 09 de setembro de 1965, bem como pessoas físicas e empresas ou organizações que exerçam atividades afins e que estejam concordes com o presente estatuto.

Art. 6º - A **ADM** é constituída por um número ilimitado de Associadas, distribuídas nas seguintes categorias:

a) **Titulares Fundadoras** – são aquelas que foram eleitas para a administração da **ADM** na Assembleia de Constituição;

b) **Efetivas** - são aquelas que foram admitidas na forma do artigo 5º supra;

c) **Beneméritas** – são aquelas que prestaram relevantes serviços à **ADM** ou à ciência da Administração. O respectivo título poderá ser outorgado através de proposta da Diretoria, aprovado pela totalidade das associadas, sem que nenhuma obrigação pecuniária decorra dessa distinção;

d) **Honorárias** – são aquelas pessoas físicas que, também, tenham prestado relevantes serviços à **ADM** ou à ciência da Administração. O respectivo título poderá ser outorgado através de proposta da Diretoria, aprovada pela totalidade das associadas, sem que nenhuma obrigação pecuniária decorra dessa distinção.

§ 1º - Os convidados que assinaram a lista de presença não serão considerados sócios fundadores.

§ 2º - Serão admitidas como associadas aquelas que solicitarem e obtiverem a aprovação de 2/3 (dois terços) dos membros da Diretoria Executiva.

§ 3º - A qualidade de associada é intransferível e seja qual for a sua categoria, não será titular de nenhuma quota ou fração ideal de patrimônio da **ADM**.

§ 4º - As associadas não serão reembolsadas das contribuições que realizaram por ocasião da fundação da **ADM** ou que venham a realizar posteriormente em favor da mesma.

§ 5º - Cada associada, quites com a tesouraria, terá direito a 01 (um) voto nas Assembleias Gerais

.

Art. 7º - Na ocorrência de qualquer infração de ordem ética, moral, científica ou profissional, poderão ser aplicadas as seguintes penalidades:



a) advertência escrita;

b) censura pública;

c) suspensão da condição de associada por período não superior a 180 dias;

d) exclusão do quadro associativo;

Art. 8º. – Será demitida a associada que deliberadamente solicitar seu desligamento, por escrito, do quadro associativo.

Art. 9º - A associada será excluída da **ADM** quando:

a) praticar qualquer ato contrário a este estatuto ou que o desabone ou, ainda, que possa prejudicar o conceito ou a idoneidade da **ADM**;

b) deixar de recolher a contribuição devida, sem motivo justificado, por mais de 3 (três) meses, após notificação prévia, por escrito.

§ 1º - A apuração das faltas e a aplicação de eventuais penalidades, como previstas no artigo 7º. e 9º., ficarão a cargo da Comissão de Ética.

§ 2º - Comprovada a falta, a Comissão de Ética poderá aplicar a penalidade prevista na alínea "a" do art. 7º, as demais penalidades só serão aplicadas após aprovação da Assembleia Geral, garantido a associada faltosa amplo direito de defesa.

Art. 10º - São direitos de todas as associadas contribuintes da **ADM:**

a) freqüentar a sede da entidade e utilizar-se da sede e de todos os seus serviços;

b) tomar parte nos trabalhos, estudos, congressos, conferências, feiras e eventos que a **ADM** promover, observadas as normas regulamentares de cada evento;

c) ter acesso às conclusões de estudos e matérias elaboradas pela **ADM**, pela via de suas publicações;

d) ter assegurado ampla defesa nos processos ético-disciplinares;

e) participar das Assembleias Gerais desde que em dia com as suas contribuições;

Parágrafo Único – os direitos das associadas são intransferíveis.

Art. 11 - São direitos exclusivos das associadas Titulares Fundadoras e Titulares Efetivas:

a) votar e ser votada para os cargos de direção da associação;

b) convocar Assembleia Geral nos termos do art. 16.

R. T. D. P. J.

Art. 12 – São deveres das associadas:

a) prestigiar a **ADM** por todos os meios ao seu alcance, para que esta cumpra as suas finalidades, propagar o espírito associativo e procurar angariar associadas para os quadros da associação;

b) bem desempenhar o cargo para que forem eleitas e nos quais tenham sido investidas;

c) acatar as decisões das Assembleias Gerais e da Diretoria;

d) pagar pontualmente suas contribuições;

e) cumprir as disposições estatutárias e regimentais.

Art.13 – As associadas não respondem, nem mesmo subsidiariamente, pelos encargos da **ADM**.

Capítulo III

Dos Órgãos Estatutários

Art. 14 – São responsáveis pela organização, fiscalização e administração da **ADM** os seguintes órgãos:

a) Assembleia Geral;

b) Diretoria Executiva;

c) Conselho Fiscal;

d) Conselho Consultivo

Da Assembleia Geral

Art. 15– A Assembleia Geral, Ordinária ou Extraordinária, órgão soberano de deliberação de **ADM**, se constituirá das associadas em dia com as suas obrigações sociais.

Art. 16 – Compete privativamente à Assembleia Geral:

a) eleger a Diretoria Executiva e o Conselho Fiscal;

b) destituir os membros da Diretoria Executiva e do Conselho Fiscal;

c) decidir sobre reformas do Estatuto;

d) deliberar sobre o relatório anual e contas da Diretoria Executiva após parecer do Conselho Fiscal;

e) deliberar sobre a exclusão de associadas;

f) decidir sobre a extinção ou dissolução da **ADM**.

§ 1º - Para as deliberações a que se referem os itens de "a" a "f" do presente artigo, é exigida a concordância de 2/3 (dois terços) dos presentes à assembleia especialmente convocada para a finalidade, devendo estar presentes na primeira convocação a maioria absoluta das associadas e 1/3 (um terço) na segunda e demais convocações, não sendo permitidos votos por procuração.

§ 2º - Para efeito de verificação de quorum de que trata este artigo, o número de associadas, em cada convocação, apurar-se-á pelas assinaturas lançadas no Livro de Presença.

§ 3º - As Assembleias Gerais Ordinárias e Extraordinárias poderão ser realizadas no formato remoto, com a utilização de qualquer ferramenta tecnológica, bem como de seus mecanismos para a comprovacão de presença, podendo também ser utilizada para esse fim uma cópia simples de declaração do participante expressando sua concordância com as deliberações relativas à ordem do dia.

§ 4º - A assinatura eletrônica poderá ser utilizada na ata da Assembleia Geral Ordinária e Extraordinária.

§ 5º - Poderá ser utilizado o registro eletrônico de documentos da **ADM**, dentre eles a Ata da Assembleia Geral Ordinária e Extraordinária.

Art. 17 – As Assembleias Gerais Ordinárias realizar-se-ão uma vez por ano, na forma do presente estatuto, em datas e locais fixados pela Diretoria e as Extraordinárias quando convocadas pelo Presidente da **ADM**, sendo garantido a um quinto das associadas o direito de promovê-las.

Art. 18 – Anualmente, a Assembleia Geral Ordinária, deliberará sobre o Relatório de Atividades e a Prestação de Contas da Diretoria Executiva e quadrienalmente elegerá a Diretoria Executiva e o Conselho Fiscal.

Parágrafo Único – As Comissões Setoriais serão coordenadas por Diretores, para tanto designados pela Diretoria Executiva, competindo-lhes o desenvolvimento das atividades setoriais específicas

Art.37. Fica constituída a Comissão de Ética.

R. T. D. P. J.

Capítulo VI

Do Diretor Superintendente e da Chefia dos Departamentos

Art. 38 – São cargos auxiliares da Diretoria Executiva na administração na **ADM**, dentre outros que venham a ser criados, o do Diretor Superintendente e os dos chefes dos Departamentos Econômico, Jurídico e Técnico.

Parágrafo único – São remunerados os cargos relacionados no caput.

Capítulo VII

Dos Recursos Financeiros

Art. 39 – Os recursos financeiros necessários à manutenção da **ADM** poderão ser obtidos por:

a) Termos de Parceria, Convênios e Contratos firmados com o Poder Público para financiamento de projetos na sua área de atuação;

b) Contratos e acordos firmados com empresas, universidades e agências nacionais e internacionais;

c) Doações, legados e heranças recebidas;

d) Rendimentos de aplicações de seus ativos financeiros e outros, pertinentes ao patrimônio;

e) Contribuição das associadas;

f) Receitas auferidas por meio de atividades que envolvam propriedades industrial/intelectual;

g) Resultado líquido proveniente de suas atividades estatutárias, como prestação de serviços, cursos, simpósios, congressos, feiras e a produção, desenvolvimento e distribuição de publicação periódica própria ou para terceiros, na divulgação de trabalhos, apresentação de artigos técnicos, estudos e demais notícias de interesse e outras atividades.

Capítulo VIII

Do Patrimônio, Duração e Dissolução

Art. 40 – O patrimônio da **ADM**, administrado pela Diretoria Executiva, será constituído pelas contribuições das associadas, doações, legados e bens móveis, imóveis e demais valores adquiridos e pelas respectivas rendas por eles produzidas, tudo a teor do elenco previsto no Art. 39, supra.

Parágrafo Único – Os títulos de renda, bem como os bens imóveis, só poderão ser alienados mediante votação ou expressa desistência do voto, de cada associada.

Art. 41 - A **ADM** durará por tempo indeterminado mas, poderá ser dissolvida a qualquer tempo, por deliberação da Assembleia Geral Extraordinária, pelos votos, no mínimo de 2/3 de suas associadas e o patrimônio líquido, nesse caso, será destinado a qualquer outra entidade de classe, de fins não econômicos, de natureza civil ou sindical, sediada no Estado de São Paulo, representativa da categoria dos Administradores.

Art. 42 – O presente Estatuto poderá ser reformado , a qualquer tempo, por decisão da maioria absoluta das associadas, em Assembleia Geral especialmente convocada para esse fim, observando o disposto no parágrafo 2º do artigo 19 e entrará em vigor na data de sua aprovação em Assembleia Geral, independentemente de seu registro em Cartório de Registro de Pessoas Jurídicas, na forma da Lei.

Art. 43 – Os casos omissos serão resolvidos pela Diretoria Executiva.

R. T. D. P. J.

São Paulo, 15 de julho de 2020

12º

Adm. Carlos Eduardo Uchôa Fagundes
Presidente

Cynthia Cristina Gramorelli

OAB/SP 188 440

12º TABELIÃO de NOTAS JOSÉ NICOLA SPÓSITO
CARTÓRIO DO 12º TABELIÃO DE NOTAS DE SÃO PAULO-SP
Alameda Santos, 1.470 - São Paulo - SP - Cep 01418-100
JOSÉ NICOLA SPÓSITO - TABELIÃO INTERINO - Tel. (11) 3549-4277

Reconheço por semelhança 01 firma sem valor econômico de CARLOS EDUARDO UCHOA FAGUNDES e dou fé.**********
****
Selo: 1042AC114684
SAO PAULO, 08 de Setembro de 2020. Hr. 14:26
Em Testemunho _____ da verdade. Vr. R$6,45
CLEBER GONCALVES - ESCREVENTE

Colégio Notarial do Brasil
Seção São Paulo
114462
FIRMA 1
S1042AC0114684

TABELIÃO DE NOTAS
Cleber Gonçalves
Escrevente Autorizado

Exhibit C.II - Second Prong: Letters of Support

September 17, 2025

To whom it may concern,

My name is Sérgio Negrão, Chief Executive Officer (CEO) of Jagrão Brazil. I hold a Bachelor's degree in Law and have been working for over twelve years in agribusiness and the international trade of fresh fruit. Throughout this journey, I have led large-scale export operations with partners in Europe, the Middle East, and North America, structuring supply chains with a focus on quality, regulatory compliance, traceability, food safety, and sustainability. Among my responsibilities are negotiating with producers and packing houses, crop planning, cold chain management, quality audits, and building long-lasting relationships with international importers, distributors, and retailers. This experience allows me to assess, with both technical and market-based insight, professionals who elevate the operational standards of the companies we work with.

I have known Mr. Jackson Marques dos Santos since 2018, when he was working as a packing house manager at Cardili Citrus. Our first contact took place during a business visit to the Jagrão Brazil headquarters in Itápolis (São Paulo), where we worked on structuring a certified supply of Tahiti limes for export. Since then, we have maintained an ongoing collaboration, more recently through his role at Green Gold Citrus, where I had the opportunity to closely notice his ability to coordinate complex flows of receiving, sorting, and grading, ensuring quality standardization and meeting deadlines under varying market and weather conditions.

He integrated routines for loss control, equipment calibration, compliance documentation, and team training, ensuring consistency from the field to international shipment. The partnership provided Jagrão Brazil with a consistent and certified supply of Tahiti limes, contributing to the company's strengthened image as a leading exporter in Europe. In addition, he supported the growth of the local production chain, generating jobs and adding value to small and medium-sized producers in São Paulo and now in the Bahia region.

Based on internal estimates from our team, under Mr. Marques's coordination, partner companies recorded monthly revenue growth exceeding 200% over successive harvests. In my assessment, Mr. Marques's skill set has sector-wide impact: it improves the resilience of perishable goods supply chains, strengthens quality and food safety, and promotes productivity practices that reduce waste. These practices are transferable to the U.S. market, with expected impact on indirect job creation, supply stability, and competitiveness in demanding markets. In light of the above, I recommend Mr. Marques in support of his EB-2 NIW petition. His solid track record in managing international operations, his leadership in strategic projects, and his proven results in business expansion highlight the relevance of his work and reinforce his potential for ongoing contribution to the United States.

I remain available for any additional clarifications.

Sincerely,

Sérgio Negrão
Director
Jagrão Comercial Exportadora Ltda.
Email: sergio@jagraobrazil.com
Phone: +55 1699609-9462

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I, Carolina Favero da Silva, telephone number 415 425-2508, mailing address P.O. Box 90487, San Diego, CA 92169, certify that the professional translation of this document from Portuguese to English has been performed by myself, a qualified translator fluent in both languages, and that the following is an accurate and complete translation of the document.


_____ Date: October 6, 2025.

17 de Setembro de 2025

A quem possa interessar,

Meu nome é Sérgio Negrão, Diretor-Presidente (CEO) da Jagrão Brazil. Sou bacharel em Direito e atuo há mais de doze anos no agronegócio e no comércio internacional de frutas frescas. Ao longo dessa trajetória, liderei operações de exportação em escala com parceiros na Europa, Oriente Médio e América do Norte, estruturando cadeias de suprimento com foco em qualidade, conformidade regulatória, rastreabilidade, segurança alimentar e sustentabilidade. Entre minhas atribuições, destacam-se a negociação com produtores e empacotadoras, planejamento de safras, gestão de cold chain, auditorias de qualidade e a construção de relacionamentos duradouros com importadores, distribuidores e varejistas internacionais. Essa vivência me permite avaliar, com base técnica e de mercado, profissionais que elevam o padrão operacional das empresas com as quais trabalhamos.

Conheço o Sr. Jackson Marques dos Santos desde 2018, quando ele atuava como gerente de packing house na Cardili Citrus. Nosso primeiro contato ocorreu em uma visita comercial à sede da Jagrão Brazil, em Itápolis (SP), para estruturarmos o fornecimento certificado de limão Tahiti com destino à exportação. A partir de então, mantivemos uma colaboração contínua, mais recentemente com sua atuação na Green Gold Citrus, na qual pude observar de perto sua capacidade de coordenar fluxos complexos de recebimento, seleção e classificação, assegurando padronização de qualidade e cumprimento de prazos sob condições variáveis de mercado e clima.

Ele integrou rotinas de controle de perdas, calibração de equipamentos, documentação de conformidade e treinamento de equipes, garantindo consistência do campo ao embarque internacional. A parceria garantiu à Jagrão Brazil um fornecimento consistente e certificado de limão Tahiti, contribuindo para o fortalecimento da imagem da empresa como referência de exportação na Europa.
Além disso, apoiou o crescimento da cadeia produtiva local, gerando empregos e valorizando pequenos e médios produtores em São Paulo e agora na região da Bahia.

Com base em estimativas internas da nossa equipe, sob a coordenação do Sr. Marques as empresas parceiras registraram crescimentos de receita mensal superiores a 200% ao longo de safras sucessivas.
Na minha avaliação, o conjunto de competências do Sr. Marques tem alcance setorial: melhora a resiliência de cadeias de produtos perecíveis, fortalece qualidade e segurança alimentar e difunde práticas de produtividade que reduzem desperdícios. Essas práticas são transferíveis ao ambiente norte-americano, com impacto esperado em empregos indiretos, estabilidade de oferta e competitividade em mercados exigentes.
Diante do exposto, recomendo o Sr. Marques em apoio ao seu pedido de classificação como EB-2 NIW. Sua sólida trajetória na gestão de operações internacionais, sua condução de projetos estratégicos e seus resultados comprovados em expansão de negócios evidenciam a relevância do seu trabalho, além de consolidarem seu potencial de contribuição contínua aos Estados Unidos.
Permaneço à disposição para esclarecimentos adicionais.

Atenciosamente,

Sérgio Negrão
Diretor
Jagrão Comercial Exportadora Ltda.
E-mail: sergio@jagraobrazil.com
Telefone: +55 16 99609-9462

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August 10, 2025

Novo Horizonte, SP, Brazil

Dear USCIS,

It is with satisfaction that I present this letter in support of Mr. Jackson Marques dos Santos. My name is Luciano Jacob, an economist, graduated from Mackenzie Presbyterian University, with an MBA in Controllership, Finance, and Auditing from Fundação Getulio Vargas (FGV). I have more than 20 years of experience in finance, controllership, and business management, having worked as a financial consultant and executive in large companies in the agricultural, industrial, and services sectors. I am currently the founder of Jacob Consulting and the director of LCJ Bio Tech, where I lead projects in controllership, financial restructuring, and risk management, with a focus on sustainable growth and operational efficiency.

I am currently the head of LCJ Bio Tech (CNPJ 47.305.275/0001-05), located in Novo Horizonte, SP. My work involves the analysis of economic scenarios and the implementation of advanced strategies of controllership, financial restructuring, and risk management. In addition, I lead strategic planning projects for institutions seeking to optimize their cash flow, implement new internal controls, and expand their operations in a solid manner.

I had the opportunity to meet Mr. Marques in 2020 through the recommendation of a mutual partner, Mr. Juliano Gerlach. At the time, I initially worked as a financial consultant, and soon became responsible for the entire financial management of Cardili Citrus, where he held a leadership position, driving the company's growth and structuring demands directed at the international market. For three years (2020 to 2023), I worked in close collaboration with Mr. Marques, directly witnessing his technical skills in planning and management.

Throughout this period, closely observing Mr. Marques's work, I was able to attest to his remarkable capacity for strategic leadership, business vision, and discipline in executing expansion plans. On more than one occasion, he led risk mitigation initiatives and developed commercial negotiation mechanisms that contributed directly to preserving the company's financial health. Simultaneously, Mr. Marques remained committed to strengthening local farming communities, ensuring balanced commercial relations between producers and Cardili Citrus. This combination of skills highlighted his commitment not only to business success but also to regional economic development.

We managed to preserve the financial health of Cardili Citrus even in the face of sectoral seasonality and exchange rate challenges. During our joint work, one of the most significant results was the reduction of financial costs by approximately 20% and the optimization of working capital, ensuring sufficient liquidity to support the growth of monthly revenue, which rose from approximately R$400,000.00 to R$1,200,000.00.

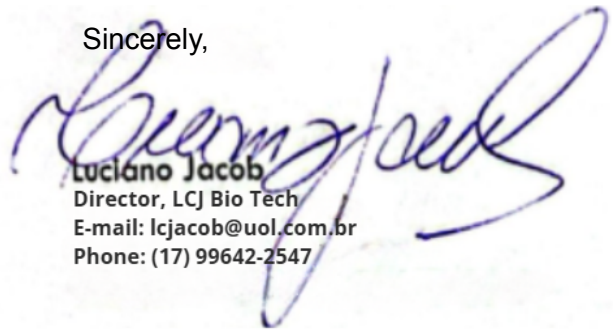
In the competitive scenario of Brazilian agribusiness, it is remarkable how Mr. Marques stands out above many other professionals. He combines financial risk management capacity with an economic development perspective that surpasses the usual standards of the market. His comprehensive vision, simultaneously considering the strengthening of local partnerships and the requirements of international markets,

consistently positions him among the most competent and relevant professionals in his field of activity.

In conclusion, I fully support Mr. Marques in his EB-2 NIW application, as his experience in financial control, business management, and economic development makes him a unique professional, with high-level skills that will be highly beneficial to the United States.

Please feel free to contact me should you need any additional information or clarification.

Sincerely,



Luciano Jacob
Director, LCJ Bio Tech
E-mail: lcjacob@uol.com.br
Phone: (17) 99642-2547

I, Marina Viana Silva, telephone number 415 425-2508, mailing address P.O. Box 90487, San Diego, CA 92169, certify that I have performed the professional translation of this document from Portuguese to English, as a qualified translator fluent in both languages, and that the following is an accurate and complete translation of the document.

Marina Viana

_____ **Date: October 03, 2025.**

10 de Agosto de 2025,

Novo Horizonte, SP, Brasil

Cara USCIS,

É com satisfação que apresento esta carta em apoio ao Sr. Jackson Marques dos Santos. Meu nome é Luciano Jacob, economista formado pela Universidade Presbiteriana Mackenzie, com MBA em Controladoria, Finanças e Auditoria pela Fundação Getulio Vargas (FGV). Possuo mais de 20 anos de experiência em finanças, controladoria e gestão empresarial, tendo atuado como consultor financeiro e executivo em grandes empresas dos setores agrícola, industrial e de serviços. Atualmente, sou fundador da Jacob Consulting e dirijo a LCJ Bio Tech, onde lidero projetos de controladoria, reestruturação financeira e gerenciamento de riscos, com foco em crescimento sustentável e eficiência operacional.

No momento, estou à frente da LCJ Bio Tech (CNPJ 47.305.275/0001-05), localizada em Novo Horizonte, SP. Minha atuação envolve a análise de cenários econômicos e a implementação de estratégias avançadas de controladoria, reestruturação financeira e gerenciamento de riscos. Além disso, lidero projetos de planejamento estratégico para instituições que buscam otimizar seu fluxo de caixa, implantar novos controles internos e expandir suas operações de forma sólida.

Tive a oportunidade de conhecer o Sr. Marques em 2020, por indicação de um parceiro em comum, o Sr. Juliano Gerlach. Na época, atuei inicialmente como consultor financeiro, e logo, fiquei responsável por toda a gestão financeira na Cardili Citrus, onde ele ocupava a posição de liderança, conduzindo o crescimento da empresa e estruturando as demandas voltadas ao mercado internacional. Durante três anos (2020 a 2023), trabalhei em estreita colaboração com o Sr. Marques, testemunhando diretamente suas habilidades técnicas de planejamento e gestão.

Ao longo desse período, observando de perto o trabalho do Sr. Marques, pude atestar sua notável capacidade de liderança estratégica, visão de negócio e disciplina na execução de planos de expansão. Em mais de uma ocasião, ele liderou iniciativas de mitigação de riscos e desenvolveu mecanismos de negociação comercial que contribuíram diretamente para a preservação da saúde financeira da empresa. Simultaneamente, o Sr. Marques seguiu empenhado no fortalecimento das comunidades agrícolas locais, assegurando relações comerciais equilibradas entre produtores e a Cardili Citrus. Esta combinação de competências ressaltou seu compromisso não apenas com o sucesso do negócio, mas também com o desenvolvimento econômico regional.

Conseguimos preservar a saúde financeira da empresa Cardili Citrus mesmo diante de períodos de sazonalidade e desafios cambiais do setor. Durante nosso trabalho conjunto, um dos resultados mais expressivos foi a redução dos custos financeiros em cerca de 20% e a otimização do capital de giro, garantindo liquidez suficiente para suportar o crescimento do faturamento mensal, que passou de aproximadamente R$ 400.000,00 para R$ 1.200.000,00.

No cenário competitivo do agronegócio brasileiro, é notável como o Sr. Marques se destaca acima de muitos outros profissionais. Ele alia a capacidade de gestão de risco financeiro a uma perspectiva de desenvolvimento econômico que supera os padrões habituais do mercado. Sua visão abrangente, pensando simultaneamente no fortalecimento de parcerias locais e nas exigências de mercados internacionais, o

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posiciona consistentemente entre os profissionais de maior competência e relevância em seu campo de atuação.

Em conclusão, apoio plenamente o Sr. Marques em sua solicitação de EB-2 NIW, pois sua experiência em controle financeiro, gestão empresarial e desenvolvimento econômico o torna um profissional singular, com habilidades de alto nível que serão altamente benéficas aos Estados Unidos.

Por favor, sintam-se à vontade para me contatar, caso necessitem de qualquer informação adicional ou esclarecimento.

Cordialmente,

Luciano Jacob
Diretor, LCJ Bio Tech
E-mail: lcjacob@uol.com.br
Telefone: +55 (17) 99642-2547

Scanned with CamScanner

August 8, 2025

Email: agrogerlach@yahoo.com.br
Phone: 17 99722-5546

To the United States Citizenship and Immigration Services,

Dear Sirs,

My name is Juliano Gerlach. I am an agronomist, graduated from São Paulo State University (UNESP), with Graduate Studies in Financial Management and Occupational Safety. I have worked for over 15 years as a consultant and auditor for international certifications in food safety and good agricultural practices. I am the owner of Agrogerlach Consulting, where I lead consulting and auditing in GLOBALG.A.P. (including the *GLOBALG.A.P. Risk Assessment on Social Practice* - GRASP module), *Hazard Analysis and Critical Control Points* - HACCP, and related compliance programs, raising quality and sustainability standards in national agricultural production.

At Agrogerlach Consulting, I lead teams of specialists, developing implementation strategies, conducting audits, training professionals, and monitoring compliance with international standards. This work has enabled producers and packing house to expand their global presence through internationally recognized certifications, achieving gains in predictability, traceability, and operational efficiency.

I met Mr. Jackson Marques dos Santos in 2016, when he was the manager of the Cardili Citrus packing house, in Santa Adélia/SP, on the Tahiti lime export project to the European Union. Upon recommendation, I was hired as the consultant responsible for the implementation of GLOBALG.A.P. and GRASP certifications. From 2016 to 2020, we worked together on the annual renewal of these certifications, during which time I was able to closely observe Mr. Marques's significant contributions to Cardili Citrus. The GLOBALG.A.P. and GRASP certifications were decisive in enabling the company's access to the European market, generating a positive impact not only for the organization but also for the local community, by expanding export capacity, creating new jobs, and increasing fruit purchases from small and medium-sized local producers.

Throughout this project, Mr. Marques demonstrated a strong ability to lead internal teams, implement compliance standards, and effectively manage daily operational procedures. His contribution was essential to the success of the certification, as he coordinated employees, communicated technical information clearly, and oversaw the implementation of good agricultural and food safety practices.

I also highlight Mr. Marques's leadership skills, his organizational discipline in meeting goals, and his ability to align operational practices with the required international standards. His strategic vision, particularly in communication with producers, clients, and international partners, sets him apart from conventional managers and fosters an environment of quality, supply regularity, and competitiveness.

In the agricultural export market, the impact of the solutions and strategies that Mr. Marques developed and applied is remarkable. The procedures adopted at Cardili Citrus boosted the company's export capacity and were shared with partner producers, guiding third-party adaptation processes to meet the requirements of external markets. In this way, his practices contributed to the dissemination of international quality standards and the expansion of business opportunities in the surrounding region.

These skills generate direct effects on productivity, supply stability, and the quality of business partnerships, significant advantages for any high-standard market, including the United States.

In conclusion, I fully support Mr. Marques in his EB-2 NIW process, as I believe that his expertise, combined with the solid results achieved in projects in Brazil, will allow him to make significant contributions to the agricultural sector in the United States. His ability to lead complex projects, increase business competitiveness, and promote sustainable practices makes him a highly valuable technical resource.

I remain at your disposal should you require any further information.

Respectfully,



Juliano Gerlach
Agronomist, Consultant, and Auditor of International Certifications,
Agrogerlach Consulting

Itajobi, SP, Brazil

I, Marina Viana Silva, telephone number 415 425-2508, mailing address P.O. Box 90487, San Diego, CA 92169, certify that I have performed the professional translation of this document from Portuguese to English, as a qualified translator fluent in both languages, and that the following is an accurate and complete translation of the document.

Marina Viana

Date: October 03, 2025.

8 de agosto de 2025

E-mail: agrogerlach@yahoo.com.br
Telefone: 17997225546

Para a United States Citizenship and Immigration Services,

Prezados Senhores,

Meu nome é Juliano Gerlach. Sou engenheiro agrônomo formado pela Universidade Estadual Paulista (UNESP), com pós-graduação em Gestão Financeira e Segurança do Trabalho. Atuo há mais de 15 anos como consultor e auditor de certificações internacionais em segurança alimentar e boas práticas agrícolas. Sou proprietário da Agrogerlach Consulting, onde lidero consultoria e auditorias em GLOBALG.A.P. (incluindo o módulo GRASP), HACCP e programas correlatos de conformidade, elevando padrões de qualidade e sustentabilidade na produção agrícola nacional.

Na Agrogerlach Consulting, lidero equipes de especialistas, desenvolvendo estratégias de implementação, conduzindo auditorias, capacitando profissionais e monitorando a aderência a normas internacionais. Essa atuação tem permitido que produtores e empacotadoras ampliem sua presença global por meio de certificações reconhecidas mundialmente, com ganhos de previsibilidade, rastreabilidade e eficiência operacional.

Conheci o Sr. Jackson Marques dos Santos em 2016, quando ele era gestor do packing house da Cardili Citrus, em Santa Adélia/SP no projeto de exportação de limão Tahiti para a União Europeia. Por indicação, fui contratado como consultor responsável pela implementação das certificações GLOBALG.A.P. e GRASP. Entre 2016 e 2020, trabalhamos juntos na renovação anual dessas certificações, período em que pude observar de perto as contribuições significativas do Sr. Marques para a Cardili Citrus. As certificações GLOBALG.A.P. e GRASP foram determinantes para viabilizar o acesso da empresa ao mercado europeu, gerando impacto positivo não apenas para a organização, mas também para a comunidade local, ao ampliar a capacidade de exportação, criar novos postos de trabalho e aumentar a aquisição de frutas de pequenos e médios produtores da região.

Ao longo desse projeto, o Sr. Marques demonstrou habilidade para liderar equipes internas, implantar normas de conformidade e gerenciar com eficácia os procedimentos diários da operação. Sua contribuição foi essencial para o êxito da certificação, pois coordenou colaboradores, disseminou informações técnicas de forma clara e supervisionou a implementação de boas práticas agrícolas e de segurança alimentar.

Destaco, ainda, a capacidade de liderança do Sr. Marques, sua organização no cumprimento de metas e a competência ao alinhar as práticas operacionais aos padrões internacionais exigidos. Sua visão estratégica, sobretudo na comunicação com produtores, clientes e parceiros internacionais, diferencia-o de

gestores convencionais e contribui para um ambiente de qualidade, regularidade de oferta e competitividade.

No mercado de exportação de produtos agrícolas, é notável o impacto das soluções e estratégias que o Sr. Marques desenvolveu e aplicou. Os procedimentos adotados na Cardili Citrus alavancaram a capacidade exportadora da empresa e foram compartilhados com produtores parceiros, passando a orientar processos de adequação de terceiros às exigências de acesso a mercados externos. Dessa forma, suas práticas contribuíram para a disseminação de padrões internacionais de qualidade e para a ampliação de oportunidades comerciais no entorno.

Essas competências geram efeitos diretos em produtividade, estabilidade de oferta e qualidade das parcerias comerciais, ganhos relevantes para qualquer mercado de alto padrão, inclusive o norte-americano.

Enfim, manifesto meu total apoio ao Sr. Marques no processo de EB-2 NIW, por acreditar que sua expertise, associada aos sólidos resultados obtidos em projetos no Brasil, permitirá que ele contribua significativamente para o setor agrícola nos Estados Unidos. Sua capacidade de liderar projetos complexos, aumentar a competitividade de empresas e promover práticas sustentáveis torna-o um recurso técnico altamente relevante.

Fico à disposição para quaisquer eventuais dúvidas.

Respeitosamente,



Juliano Gerlach
Engenheiro Agrônomo, Consultor e Auditor de Certificações Internacionais,
Agrogerlach Consulting

Itajobi, SP, Brasil

August 18, 2025

Dear Immigration Officer,

My name is Afonso Castellucci, I am a Mechanical Engineer with specializations in Safety Engineering and Business Administration. Over more than 40 years of my career, I have worked in large-scale industries, covering the metallurgical, chemical, food, and petrochemical sectors, performing roles in the areas of production, maintenance, engineering, logistics, and industrial costs. Since 1994, I own a logistics company focused on export, including maritime and road transport, and from 2014 to 2018, I was a partner in a company specializing in the packaging and marketing of Tahiti limes, targeting both domestic and international markets.

Currently, in addition to managing my logistics company, I serve as the president of ABPEL (Brazilian Association of Lemon Producers and Exporters), where I act as an institutional liaison with national and international organizations. In this role, I work to promote the sustainable development of the lemon supply chain in Brazil, negotiating improvements and solutions for producers, processors, and other stakeholders involved in this strategic sector.

I met Mr. Jackson Marques dos Santos in mid-2019 during his management at Cardili Citrus's packinghouse in Santa Adélia/São Paulo. At that time, I noticed the excellent work carried out by the company in processing Tahiti limes. Recognizing this quality, I recommended the company to commercial partners, as my goal, as president of ABPEL, is to promote the strengthening of processes and partnerships that enhance exports and foster the sustainability of the sector.

Throughout our collaborations, I was able to notice how Mr. Marques led the operations at Cardili Citrus, prioritizing a high standard of quality and planning to meet the demands of the international market. His approach involves a strong commitment to international food safety and compliance requirements, with particular emphasis on the implementation and maintenance of GLOBALG.A.P. and GRASP certifications, an essential factor for the competitiveness of Brazilian companies abroad. As a result of these recommendations, Cardili Citrus expanded its supply of Tahiti limes to other exporting companies, generating an immediate impact on revenue and strengthening the local production chain.

Mr. Marques stood out for his strategic growth vision, his ability to manage agricultural and commercial processes, and for establishing reliable partnerships. In addition, the structuring of the fruit selection, grading, and certification process under his leadership became a benchmark for other organizations in the sector, which went on to adopt similar practices in subsequent harvests, raising their production standards with a focus on international markets.

Compared to numerous other professionals I have worked with throughout my career, Mr. Marques demonstrates skills well above average, especially in aligning operations with international requirements and maintaining a mindset of continuous expansion.

His ability to combine operational excellence with sustainable practices places him at the top of his field, combining indispensable attributes for anyone aiming to remain competitive in the most demanding markets.

Given the positive experiences and the progress I have witnessed, I believe that Mr. Marques's skills have a direct impact on productivity, supply stability, and the quality of commercial partnerships, significant gains for a demanding market such as the North American one. His expertise in operations management, standardization, and international certifications is likely to contribute to the strengthening of production and logistics chains in projects focused on process improvement and the sustainable expansion of agribusiness.

In this way, I fully support Mr. Marques in his initiative to obtain the EB-2 NIW visa. His technical expertise, consolidated experience, and strong track record qualify him as a professional capable of generating positive economic and social impacts, benefiting not only his own career but also the United States.

Please feel free to contact me should you require any additional information or clarification.

Best regards,



Afonso Castellucci
Mechanical Engineer and President of ABPEL

Email: afonso@unitrader.com.br
Phone: +55 17 99722-3272

I, Carolina Favero da Silva, telephone number 415 425-2508, mailing address P.O. Box 90487, San Diego, CA 92169, certify that the professional translation of this document from Portuguese to English has been performed by myself, a qualified translator fluent in both languages, and that the following is an accurate and complete translation of the document.


_____ Date: October 6, 2025.

18 de agosto de 2025

Caro(a) Oficial de Imigração,

Meu nome é Afonso Castellucci, sou Engenheiro Mecânico, com especializações em Engenharia de Segurança e Administração de Empresas. Ao longo de mais de 40 anos de carreira, atuei em indústrias de grande porte, abrangendo os setores metalúrgico, químico, alimentício e petroquímico, desempenhando funções nas áreas de produção, manutenção, engenharia, logística e custos industriais. Desde 1994, sou proprietário de uma empresa de logística voltada à exportação, abrangendo transporte marítimo e rodoviário, e no período de 2014 a 2018, fui sócio de uma companhia de embalagem e comercialização de limão Tahiti, com foco em mercados nacional e internacional.

Atualmente, além de gerir a minha empresa de logística, exerço o cargo de presidente da ABPEL (Associação Brasileira de Produtores e Exportadores de Limão), onde atuo como articulador institucional perante organismos nacionais e internacionais. Nesse papel, trabalho para promover o desenvolvimento sustentável da cadeia do limão no Brasil, negociando melhorias e soluções para produtores, processadores e demais atores envolvidos nesse setor estratégico.

Conheci o Sr. Jackson Marques dos Santos em meados de 2019, durante sua gestão no packinghouse da Cardili Citrus, em Santa Adélia/SP. Naquele momento, observei a excelência do trabalho desenvolvido pela empresa no processamento de limões da variedade Tahiti. Identificando essa qualidade, indiquei a empresa a parceiros comerciais, pois meu objetivo, como presidente da ABPEL, é incentivar o fortalecimento de processos e parcerias que incrementem a exportação e fomentem a sustentabilidade do setor.

Ao longo de nossas colaborações, pude acompanhar a maneira como o Sr. Marques liderava a operação na Cardili Citrus, priorizando um padrão elevado de qualidade e planejamento para atender às exigências do mercado internacional. Sua abordagem envolve comprometimento com requisitos internacionais de segurança alimentar e conformidade, com destaque para a implementação e manutenção de certificações GLOBALG.A.P. e GRASP, aspecto decisivo para a competitividade das empresas brasileiras no exterior. Por meio dessas recomendações, a Cardili Citrus expandiu seu fornecimento de limão Tahiti para outras empresas exportadoras, gerando impacto imediato no faturamento e no fortalecimento da cadeia produtiva local.

O Sr. Marques destacou-se por sua visão estratégica de crescimento, capacidade de gestão de processos agrícolas e comerciais e por estabelecer parcerias confiáveis. Além disso, a estruturação do processo de seleção, classificação e certificação da fruta sob sua liderança passou a servir de referência para outras organizações do setor, que adotaram práticas semelhantes em safras subsequentes, elevando seus padrões de produção com foco em mercados externos.

Comparado a inúmeros outros profissionais com quem já trabalhei ao longo de minha trajetória, o Sr. Marques apresenta competências muito acima da média, especialmente no alinhamento das operações aos requisitos internacionais e na mentalidade de

expansão contínua. Sua capacidade de combinar gestão operacional de excelência com práticas sustentáveis o posiciona no topo de seu campo, reunindo atributos indispensáveis para quem deseja se manter competitivo nos mercados mais exigentes.

Diante das experiências positivas e dos avanços que presenciei, entendo que as competências do Sr. Marques geram efeitos diretos em produtividade, estabilidade de oferta e qualidade das parcerias comerciais, ganhos relevantes para um mercado exigente, como o norte-americano. Sua expertise em gestão de operações, padronização e certificações internacionais tende a contribuir para o fortalecimento de cadeias produtivas e logísticas em projetos voltados à melhoria de processos e à expansão sustentável do agronegócio.

Desse modo, apoio integralmente o Sr. Marques em sua iniciativa voltada à obtenção do visto EB-2 NIW. Sua competência técnica, experiência consolidada e resultados robustos o qualificam como um profissional capaz de gerar impactos positivos em âmbito econômico e social, beneficiando não apenas sua trajetória, mas também os Estados Unidos.

Por favor, fiquem à vontade para me contatar caso necessitem de informações adicionais ou esclarecimentos.

Com os melhores cumprimentos,

Afonso Castellucci
Engenheiro Mecânico e Presidente da ABPEL

E-mail: afonso@unitrader.com.br
Telefone: +55 17 99722-3272

Exhibit C.II - Second Prong: Professional Achievements

GREEN GOLD COMERCIO IMPORTAÇÃO E EXPORTAÇÃO

CNPJ: 53.319.230/0001-84
Avenida America do Sul, No Number, Coqueiral - ZIP Code: 48010-618
Alagoinhas-Bahia

REVENUE STATEMENT

MONTH/YEAR	REVENUE IN R$
Jan/24	R$ 0.00
Feb/24	R$ 364,019.47
Mar/24	R$ 957,692.85
Apr/24	R$ 1,561,931.00
May/24	R$ 1,636,938.89
Jun/24	R$ 733,482.05
Jul/24	R$ 497,934.75
Aug/24	R$ 311,803.00
Sep/24	R$ 794,477.05
Oct/24	R$ 858,959.99
Nov/24	R$ 129,940.00
Dec/24	R$181,778.00
TOTAL	**R$ 8,028,957.05**

Alagoinhas - Bahia, June 17, 2025.



LUKAS ROCHA VIEIRA DE CARVALHO
CPF: 777.747.955-53
CRC/BA023678-O-5
(CRC: Regional Accounting Council)
Accountant

ROBSON LEONARDO MOSSAMBANI
CPF: 428.545.738-54
Partner

I, Carolina Favero da Silva, telephone number 415 425-2508, mailing address P.O. Box 90487, San Diego, CA 92169, certify that the professional translation of this document from Portuguese to English has been performed by myself, a qualified translator fluent in both languages, and that the following is an accurate and complete translation of the document.


_____ Date: October 3, 2025.

GREEN GOLD COMERCIO IMPORTAÇÃO E EXPORTAÇÃO

CNPJ: 53.319.230/0001-84
Avenida America do Sul, SN, Coqueiral - CEP: 48010-618
Alagoinhas-BA

DEMONSTRATIVO DE FATURAMENTO

MÊS/ANO	FATURAMENTO EM R$
jan/24	R$ 0,00
fev/24	R$ 364.019,47
mar/24	R$ 957.692,85
abr/24	R$ 1.561.931,00
mai/24	R$ 1.636.938,89
jun/24	R$ 733.482,05
jul/24	R$ 497.934,75
ago/24	R$ 311.803,00
set/24	R$ 794.477,05
out/24	R$ 858.959,99
nov/24	R$ 129.940,00
dez/24	R$ 181.778,00
TOTAL	**R$ 8.028.957,05**

Alagoinhas - Ba, 17 de Junho de 2025.

ASSINADO DIGITALMENTE
LUKAS ROCHA VIEIRA DE CARVALHO
A conformidade com a assinatura pode ser verificada em:
http://serpro.gov.br/assinador-digital
SERPRO

LUKAS ROCHA VIEIRA DE CARVALHO
CPF: 777.747.955-53
CRC/BA023678-O-5
Contador

ROBSON LEONARDO MOSSAMBANI
CPF: 428.545.738-54
Sócio

Avenida Marechal Deodoro, No. 379 A
Centro – Alagoinhas – Bahia
Phone: 75 3422-1352 / 3421-1873
Email: meta.ass@hotmail.com
Website: www.metaass.com.br

GREEN GOLD COMERCIO IMPORTAÇÃO E EXPORTAÇÃO
CNPJ: 53.319.230/0001-84
AVENIDA AMERICA DO SUL
ALAGOINHAS-BAHIA

REVENUE STATEMENT FOR THE YEAR 2025

MONTH/YEAR	REVENUE IN R$	
Jan/25	R$	711,629.00
Feb/25	R$	648,231.00
Mar/25	R$	1,064,800.45
Apr/25	R$	753,954.00
May/25	R$	1,634,130.60
Jun/25	R$	1,376,320.96
Jul/25	R$	2,037,019.95
Aug/25	R$	742,923.00
		8,969,008.96

Alagoinhas - Bahia, September 25, 2025
Robson Leonardo Mossambani
CPF: 428.545.738-54
Responsible Partner

Lukas Rocha V. de Carvalho
CRC 023678/0-5 BA
(CRC: Regional Accounting Council)

I, Carolina Favero da Silva, telephone number 415 425-2508, mailing address P.O. Box 90487, San Diego, CA 92169, certify that the professional translation of this document from Portuguese to English has been performed by myself, a qualified translator fluent in both languages, and that the following is an accurate and complete translation of the document.


_____ Date: October 3, 2025.

Av. Marechal Deodoro, nº 379 A,
Centro - Alagoinhas - Ba
Tel: 75 3422-1352 / 3421-1873
E-mail: meta.ass@hotmail.com
Site: www.metaass.com.br

GREEN GOLD COMERCIO IMPORTAÇÃO E EXPORTAÇÃO LTDA
CNPJ: 53.319.230/0001-84
AVENIDA AMERICA DO SUL
ALAGOINHAS -BA

DEMONSTRATIVO DE FATURAMENTO DO ANO DE 2025

MÊS/ANO	FATURAMENTO EM R$	
jan/25	R$	711.629,00
fev/25	R$	648.231,00
mar/25	R$	1.064.800,45
abr/25	R$	753.954,00
mai/25	R$	1.634.130,60
jun/25	R$	1.376.320,96
jul/25	R$	2.037.019,95
ago/25	R$	742.923,00
		8.969.008,96

Alagoinhas - Ba, 25 de Setembro de 2025
Robson Leonardo Mossambani
CPF: 428.545.738-54
Sócio-responsável

Lukas Rocha V. de Carvalho
CRC 023678/0-5 BA
Contador

Exhibit C.II - Second Prong: Proof of High Salary

Avenida Marechal Deodoro, No. 379 A
Centro – Alagoinhas – Bahia
Phone: 75 3422-1352 / 3421-1873
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Website: www.metaass.com.br

ACCOUNTING STATEMENT

LUKAS ROCHA VIEIRA DE CARVALHO

Accountant - Owner of META CONTABILIDADE LTDA

CNPJ n° 09.001.550/0001-08

CRC *(Regional Accounting Council)* No. 023678/BA

To whom it may concern,

I, **LUKAS ROCHA VIEIRA DE CARVALHO**, accountant, owner of META CONTABILIDADE LTDA, registered with the National Registry of Legal Entities (CNPJ) under No. 09.001.550/0001-08, hereby declare, for all due purposes, that Mr. **Jackson Marques dos Santos**, Brazilian, married, holder of CPF No. 331 .338.218-57, works full-time as a **Manager** at the company **Green Gold Comércio, Importação e Exportação Ltda**, registered with the National Registry of Legal Entities (CNPJ) under No. 53.319.230/0001-84, and has been our client since **12/10/2023.**

Given the above, I hereby certify the expertise of Mr. **Jackson Marques dos Santos** as **Manager** of **Green Gold Comércio, Importação e Exportação Ltda**, a solid company, operating in the fruit export market, with a workforce of **44** direct employees. The company has shown substantial growth over the past years, with a strong focus on innovation and international expansion.

The company **Green Gold Comércio, Importação e Exportação Ltda**, known as **Green Gold Citrus**, was founded on December 19, 2023, and operates in the wholesale fruit trade sector, with a focus on the export of fresh fruits. Despite being a recent venture, the company already stands out for its entrepreneurial vision and commitment to quality, covering various stages of the production chain, from cultivation and post-harvest to industrial processing. **Green Gold Citrus** has been building strategic partnerships and consolidating its presence in the market, with strong prospects for continued growth both nationally and internationally.

meta contabilidade

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He was the owner of the company Conex Ar-Condicionado Ltda, serving as Commercial Manager with diligence and commitment from 01/31/2013, to 02/03/2015. He currently no longer holds any ownership interest in the aforementioned company.

Below, I present the breakdown of the personal income earned by Mr. Jackson Marques dos Santos over the past two (2) years, detailing the sources of income derived from his **service provision**, in accordance with financial records verified by the respective companies, as stated in the declarations submitted by them:

- **In 2024:** R$ **499,210.21** derived from service provision, with the **management of the company Green GoId Citrus and sales commissions from the companies Santa Cruz Citrus**; **Thiago Caldas exportação e Importação Ltda**.
- **In 2025**: R$ **275,692.90** derived from services rendered, with the **management of the company Green GoId Citrus and sales commissions from the companies Santa Cruz Citrus; Thiago Caldas exportação e Importação Ltda; Jagrao Brazil and Green Vault Export Ltda**.

I emphasize that the company **Green GoId Citrus**, where **Mr. Jackson Marques dos Santos** works full-time as **Manager**, has shown robust growth, as evidenced by the continuous increase in its annual revenue, which in the past two years amounted to: 2024: R$ 8,028,957.05; 2025: R$ 8,969,008.96, and holds a significant position in the market, operating in a high-demand sector.

We remain at your disposal for any further information, if necessary.
Sincerely,

-----//Signature//----

LUKAS ROCHA VIEIRA DE CARVALHO

ACCOUNTANT

CRC: 0236478/BA

I, Carolina Favero da Silva, telephone number 415 425-2508, mailing address P.O. Box 90487, San Diego, CA 92169, certify that the professional translation of this document from Portuguese to English has been performed by myself, a qualified translator fluent in both languages, and that the following is an accurate and complete translation of the document.


_____ Date: October 6, 2025.

meta contabilidade

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DECLARAÇÃO CONTÁBIL

LUKAS ROCHA VIEIRA DE CARVALHO

Contador – Titular da META CONTABILIDADE LTDA

CNPJ nº 09.001.550/0001-08

CRC nº 023678/BA

A quem possa interessar,

Eu, **LUKAS ROCHA VIEIRA DE CARVALHO**, contador, titular da META CONTABILIDADE LTDA, inscrito no Cadastro Nacional da Pessoa Jurídica (CNPJ) sob o nº 09.001.550/0001-08, declaro, para os devidos fins, que o Sr. **Jackson Marques dos Santos**, brasileiro, casado, portador do CPF nº 331.338.218-57, exerce atividades profissionais em tempo integral como **Gestor** da empresa **Green Gold Comercio, Importação e Exportação Ltda**, inscrita no Cadastro Nacional da Pessoa Jurídica (CNPJ) sob o nº 53.319.230/0001-84, sendo nosso cliente desde **10/12/2023**.

Diante do exposto, certifico a expertise do Sr. **Jackson Marques dos Santos** como **Gestor** da **Green Gold Comercio, Importação e Exportação Ltda**, a qual é uma empresa sólida, com atuação no mercado de exportação de frutas, com um quadro de **44** colaboradores diretos. A empresa tem demonstrado um crescimento substancial ao longo dos últimos anos, com ênfase na inovação e na expansão internacional.

A empresa **Green Gold Comercio, Importação e Exportação Ltda,** conhecida como **Green Gold Citrus**, foi fundada em 19 de dezembro de 2023 e atua no setor de comercio atacadista de frutas, especialmente exportação de frutas frescas. Apesar de recente, a empresa já se destaca pela visão empreendedora e pelo foco na qualidade, abrangendo diferentes etapas da cadeia produtiva, desde o cultivo e pós-colheita até a industrialização, A Green Gold Citrus vem construindo parcerias estratégicas e consolidando sua presença no mercado com perspectivas de crescimento contínuo no cenário nacional e internacional.

meta contabilidade

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Foi proprietário da empresa Conex Ar-condicionado Ltda, exercendo suas atividades de Gestor Comercial com zelo e compromisso no período de 31/01/2013 a 03/02/2015. Atualmente não possui mais participação societária na referida empresa.

A seguir, apresento a discriminação do faturamento pessoal obtido pelo Sr. Jackson Marques dos Santos nos últimos 2 (dois) anos, detalhando as fontes de renda advindas de sua **prestação de serviços**, conforme os registros financeiros comprovados pelas respectivas empresas conforme declaração apresentada pelas mesmas:

- **Em 2024**: R$ **499.210,21** provenientes de prestação de serviços, com a **Gestão da Empresa Green Gold Citrus e comissionamento de vendas para as Empresas Santa Cruz Citrus; Thiago Caldas exportação e Importação Ltda**.
- **Em 2025**: R$ **275.692,90** , provenientes de serviços prestados, com a **Gestão da Empresa Green Gold Citrus e comissionamento de vendas para as Empresas Santa Cruz Citrus; Thiago Caldas exportação e Importação Ltda; Jagrao Brazil e Green Vault Export Ltda.**

Ressalto que a empresa **Green Gold Citrus**, a qual o **Sr. Jackson Marques dos Santos** trabalha em tempo integral como **Gestor**, tem apresentado um crescimento robusto, evidenciado pelo aumento contínuo de sua receita anual, que nos últimos dois anos foi de: 2024: R$ 8.028.957,05; 2025: R$ 8.969.008,96, e possui uma posição relevante no mercado, atuando em uma área de alta demanda.

Permanecemos à disposição para quaisquer esclarecimentos adicionais, caso necessário.

Atenciosamente,

LUKAS ROCHA VIEIRA DE CARVALHO

CONTADOR

CRC: 0236478/BA

Digital Account Statement
Query date: 07/18/2025 7:03:12 PM

JACKSON MARQUES DOS SANTOS
Document: 331.338.218-57
Available balance at the end of the filtered period: R$ 241.445,90

Banco XP S.A | Branch: 0001 | Account: 2274633
From: 06/18/2025 To: 07/18/2025

Date	Transaction	Amount	Balance
07/18/25 at 3:46:34 PM	Pix received from J Raimundo Pereira da Cruz	R$ 4.896,00	R$ 241.445,90
07/18/25 at 3:34:49 PM	TED (Wire Transfer) received from JAGRAO COMERCIAL EXPORTADORA LTDA	R$ 57.870,72	R$ 66.549,90
07/18/25 at 3:34:49 PM	TED received from GREEN VAULT EXPORT LTDA	R$ 170.000,00	R$ 236.549,90
07/18/25 at 12:28:58 PM	SUPERMERCADO TODA HORA ALAGOINHAS BR	-R$ 44,08	R$ 8.679,18
07/18/25 at 12:22:36 PM	PLASBOM COMERCIO DE EMB ALAGOINHAS BR	-R$ 2,40	R$ 8.723,26
07/18/25 at 07:02:16 AM	SOUZA SUPERMERCADO ALAGOINHAS BR	-R$ 4,99	R$ 8.725,66
07/17/25 at 4:29:58 PM	Pix sent to Igor Augusto Campos	-R$ 12,00	R$ 8.730,65
07/17/25 at 4:23:01 PM	Pix received from M de Santana Ferreira Floricultura Me	R$ 425,00	R$ 8.742,65
07/17/25 at 2:00:02 PM	Pix sent to Rosimeire Ferreira dos Santos	-R$ 130,00	R$ 8.317,65
07/17/25 at 07:05:38 AM	SOUZA SUPERMERCADO ALAGOINHAS BR	-R$ 4,99	R$ 8.447,65
07/17/25 at 06:43:54 AM	PANIFICACAO CENTRAL ALAGOINHAS BR	-R$ 7,20	R$ 8.452,64
07/16/25 at 10:03:36 PM	ESPORTE ARENA ALAGOINHAS BR	-R$ 150,00	R$ 8.459,84
07/16/25 at 3:53:40 PM	SALAO ELSHADAY ALAGOINHAS BR	-R$ 265,00	R$ 8.609,84
07/16/25 at 3:43:45 PM	Pix sent to Salao de Beleza Elshaday Ltda	-R$ 40,00	R$ 8.874,84
07/16/25 at 12:34:26 PM	Pix sent to M de Santana Ferreira Floricultura	-R$ 425,00	R$ 8.914,84
07/16/25 at 09:19:37 AM	Pix sent to M de Santana Ferreira Floricultura	-R$ 425,00	R$ 9.339,84
07/15/25 at 7:29:01 PM	VIA MARIA RESTAURANTE CANDEIAS BR	-R$ 135,92	R$ 9.764,84
07/15/25 at 6:06:23 PM	SMS ESTACIONAMENTO SALVADOR BR	-R$ 28,00	R$ 9.900,76
07/15/25 at 4:24:03 PM	BigmixServicos SALVADOR BR	-R$ 4,49	R$ 9.928,76
07/14/25 at 5:12:17 PM	G BARBOSA 37 ALAGOINHAS BR	-R$ 17,29	R$ 9.933,25
07/14/25 at 10:23:08 AM	Payment to M E GOMES ENSINO DE IDIOMAS EIRELI	-R$ 528,90	R$ 9.950,54
07/14/25 at 08:28:55 AM	Pix sent to Jackson Marques dos Santos	-R$ 3.600,00	R$ 10.479,44
07/14/25 at 08:26:26 AM	Pix sent to Telefonica Brasil S.A.	-R$ 59,00	R$ 14.079,44
07/14/25 at 08:24:56 AM	Pix sent to Telefonica Brasil S.A.	-R$ 78,37	R$ 14.138,44
07/14/25 at 08:24:18 AM	Pix sent to Telefonica Brasil S.A.	-R$ 75,00	R$ 14.216,81
07/14/25 at 07:48:58 AM	Pix sent to Bluegreen Pagamentos Ltda	-R$ 5.465,58	R$ 14.291,81
07/13/25 at 4:54:58 PM	ShoppingFeiraDe FEIRA DE SANTBR	-R$ 11,00	R$ 19.757,39
07/13/25 at 4:49:00 PM	LOJAS RIACHUELO FEIRA DE SANTBR	-R$ 449,94	R$ 19.768,39
07/13/25 at 4:30:27 PM	HNA*OBOTICARIO FEIRA DE SANTBR	-R$ 61,80	R$ 20.218,33

Date	Transaction	Amount	Balance
07/13/25 at 4:27:34 PM	ZP*HAPPY KIDS PIRACICABA BR	-R$ 60,00	R$ 20.280,13
07/13/25 at 4:03:01 PM	QSQ FEIRA DE SANT FEIRA DE SANTBR	-R$ 8,90	R$ 20.340,13
07/13/25 at 3:56:45 PM	SHOPPING IGUATEMI FEIRA DE SANTBR	-R$ 18,00	R$ 20.349,03
07/13/25 at 3:26:32 PM	LUPOBOULEVARDSHOP FEIRA DE SANTBR	-R$ 60,00	R$ 20.367,03
07/13/25 at 2:01:50 PM	YAN PING FEIRA FEIRA DE SANTBR	-R$ 37,73	R$ 20.427,03
07/13/25 at 1:53:13 PM	YAN PING FEIRA FEIRA DE SANTBR	-R$ 86,00	R$ 20.464,76
07/13/25 at 1:32:14 PM	SHOPPING IGUATEMI FEIRA DE SANTBR	-R$ 77,00	R$ 20.550,76
07/12/25 at 6:44:22 PM	Pix sent to Anderson Fernando Falla Alonso	-R$ 4.096,00	R$ 20.627,76
07/12/25 at 6:40:57 PM	Pix sent to Veronica de Queiroz Sergio	-R$ 3.000,00	R$ 24.723,76
07/12/25 at 6:34:20 PM	Pix received from Tiago Rios Ribeiro Caldas	R$ 25.576,00	R$ 27.723,76
07/12/25 at 6:02:43 PM	Pix sent to Raia Drogasil S/A	-R$ 177,85	R$ 2.147,76
07/12/25 at 4:24:54 PM	Pix sent to Ml Churrascaria e Conveniencia Ltda	-R$ 60,00	R$ 2.325,61
07/12/25 at 3:43:50 PM	Pix sent to Farma Rocha Produtos Farmaceuticos Ltda	-R$ 65,90	R$ 2.385,61
07/12/25 at 2:26:20 PM	Pix sent to Br Grill Comercio de Alimentos Ltda	-R$ 21,00	R$ 2.451,51
07/12/25 at 12:07:34 PM	Pix sent to Loterias Caixa	-R$ 36,00	R$ 2.472,51
07/12/25 at 11:59:16 AM	Pix sent to Loterias Caixa	-R$ 48,59	R$ 2.508,51
07/12/25 at 10:45:56 AM	Pix received from Jose Raimundo Pereira da Cruz	R$ 2.448,00	R$ 2.557,10
07/11/25 at 5:50:29 PM	Pix sent to Cencosud Brasil Comercial Ltda	-R$ 67,88	R$ 109,10
07/10/25 at 6:32:40 PM	Pix sent to Rosimeire Ferreira dos Santos	-R$ 260,00	R$ 176,98
07/10/25 at 12:40:58 PM	CASA DA MUKECA LTDA ME ALAGOINHAS BR	-R$ 132,56	R$ 436,98
07/10/25 at 07:10:00 AM	PANIFICACAO CENTRAL ALAGOINHAS BR	-R$ 6,00	R$ 569,54
07/09/25 at 6:04:34 PM	Pix sent to Alexandre Felipe Mu i de Almeida	-R$ 60,00	R$ 575,54
07/09/25 at 6:02:04 PM	Pix sent to Alexandre Felipe Mu i de Almeida	-R$ 40,00	R$ 635,54
07/08/25 at 3:37:29 PM	Pix sent to Atp Comercio de Alimentos Ltda	-R$ 25,26	R$ 675,54
07/07/25 at 5:45:55 PM	Pix sent to Cencosud Brasil Comercial Ltda	-R$ 31,13	R$ 700,80
07/07/25 at 08:29:20 AM	Payment to ALLIANZ SEGUROS S A	-R$ 409,91	R$ 731,93
07/07/25 at 08:29:18 AM	Payment to SUL AMERICA COMPANHIA DE SEGURO SAUDE	-R$ 2.686,17	R$ 1.141,84
07/06/25 at 6:39:30 PM	Pix sent to Igreja Batista Betel Em Alagoinhas	-R$ 300,00	R$ 3.828,01
07/06/25 at 1:17:44 PM	CASA DA MUKECA LTDA ME ALAGOINHAS BR	-R$ 109,00	R$ 4.128,01
07/06/25 at 11:01:56 AM	ATACADAO 924 AS ALAGOINHAS BR	-R$ 415,20	R$ 4.237,01
07/06/25 at 10:26:42 AM	Pix sent to Servico Autonomo de Agua e Esgoto	-R$ 195,61	R$ 4.652,21
07/05/25 at 09:54:19 AM	Pix sent to Wms Supermercados do Brasil Ltda	-R$ 170,91	R$ 4.847,82
07/05/25 at 08:01:36 AM	Pix sent to Rosemara de Cassia da Silva	-R$ 2.000,00	R$ 5.018,73
07/04/25 at 9:23:37 PM	Pix sent to Nova Candeias Comercio de Combustivel Ltda	-R$ 199,45	R$ 7.018,73
07/04/25 at 8:26:40 PM	AntonioMedeirosDe SALVADOR BR	-R$ 36,00	R$ 7.218,18
07/04/25 at 7:53:59 PM	ENAPARK. SHOPPING BARR SALVADOR BR	-R$ 14,00	R$ 7.254,18

Date	Transaction	Amount	Balance
07/04/25 at 7:51:09 PM	FISIA NFS2035 SALVADOR BR	-R$ 229,99	R$ 7.268,18
07/04/25 at 7:32:46 PM	AREZZO REGUEIRA SALVADOR BR	-R$ 190,00	R$ 7.498,17
07/04/25 at 7:00:40 PM	LUPOBARRA SALVADOR BR	-R$ 211,00	R$ 7.688,17
07/04/25 at 6:34:16 PM	YAN PING S BARRA SALVADOR BR	-R$ 32,61	R$ 7.899,17
07/04/25 at 6:30:03 PM	YAN PING S BARRA SALVADOR BR	-R$ 31,78	R$ 7.931,78
07/04/25 at 6:23:12 PM	BURGER KING SALVADOR BR	-R$ 91,70	R$ 7.963,56
07/04/25 at 6:04:28 PM	SHOPPING BARRA SALVADOR BR	-R$ 66,80	R$ 8.055,26
07/04/25 at 5:07:08 PM	Pix sent to Alagoinhas Citrus Comercio Atacadista Hortifrutigr	-R$ 89.217,00	R$ 8.122,06
07/04/25 at 5:05:28 PM	Pix sent to Sms Estacionamentos e Servicos Ltda	-R$ 30,00	R$ 97.339,06
07/04/25 at 4:56:01 PM	TED received from GREEN VAULT EXPORT LTDA	R$ 89.217,36	R$ 97.369,06
07/04/25 at 4:52:23 PM	Pix received from J Raimundo Pereira da Cruz	R$ 7.344,00	R$ 8.151,70
07/04/25 at 2:47:14 PM	Pix received from Alagoinhas Citrus Comercio Atacadista Hortifrutigranjeiros Ltda	R$ 400,00	R$ 807,70
07/04/25 at 2:46:18 PM	HOSPITAL SAO RAFA SALVADOR BR	-R$ 400,00	R$ 407,70
07/04/25 at 2:26:46 PM	REI DO MATE - HSR SALVADOR BR	-R$ 26,40	R$ 807,70
07/03/25 at 7:11:54 PM	Pix sent to Tuna Pagamentos Ltda	-R$ 147,00	R$ 834,10
07/03/25 at 4:47:21 PM	Pix sent to Marcelo Cristiniano da Cruz	-R$ 50,00	R$ 981,10
07/03/25 at 2:27:18 PM	Pix sent to Br Grill Comercio de Alimentos Ltda	-R$ 16,00	R$ 1.031,10
07/03/25 at 11:56:57 AM	Pix sent to Raia Drogasil S/A	-R$ 1.759,64	R$ 1.047,10
07/02/25 at 3:45:17 PM	Pix sent to Raia Drogasil Sa	-R$ 79,20	R$ 2.806,74
07/02/25 at 3:19:40 PM	Pix sent to Jjax 5 Santos Comercio de Sobremesa Ltda	-R$ 20,00	R$ 2.885,94
07/02/25 at 11:46:12 AM	Pix sent to Cencosud Brasil Comercial Ltda	-R$ 19,98	R$ 2.905,94
07/02/25 at 07:33:04 AM	Returned Pix from Raia Drogasil S/A	R$ 1.406,63	R$ 2.925,92
07/02/25 at 07:10:18 AM	Pix sent to Raia Drogasil S/A	-R$ 1.406,63	R$ 1.519,29
07/01/25 at 2:06:11 PM	Payment to BANCO C6 S.A.	-R$ 1.589,65	R$ 2.925,92
07/01/25 at 2:03:18 PM	Pix sent to Instituicao Adventista Nordeste Brasileira de Educacao e Assistencia Social	-R$ 666,75	R$ 4.515,57
07/01/25 at 1:59:34 PM	Pix sent to Instituicao Adventista Nordeste Brasileira de Educacao e Assistencia Social	-R$ 741,75	R$ 5.182,32
07/01/25 at 1:57:31 PM	Pix sent to Marconi Jannuzzelli Junior	-R$ 2.606,50	R$ 5.924,07
07/01/25 at 1:55:31 PM	Pix received from Green Citrus	R$ 6.500,00	R$ 8.530,57
07/01/25 at 1:36:28 PM	Pix sent to Rosimeire Ferreira dos Santos	-R$ 130,00	R$ 2.030,57
06/30/25 at 6:55:07 PM	Returned Pix from Empreendimentos Pague Menos S/A	R$ 1.406,75	R$ 2.160,57
06/30/25 at 6:07:23 PM	Pix sent to Empreendimentos Pague Menos S/A	-R$ 1.406,75	R$ 753,82
06/29/25 at 6:46:09 PM	Pix sent to Igreja Batista Betel Em Alagoinhas	-R$ 200,00	R$ 2.160,57
06/29/25 at 10:06:46 AM	Returned Pix from Empreendimentos Pague Menos S/A	R$ 1.406,75	R$ 2.360,57
06/29/25 at 10:03:43 AM	Pix sent to Empreendimentos Pague Menos S/A	-R$ 1.406,75	R$ 953,82
06/28/25 at 6:40:53 PM	SUPERMERCADO TODA HORA ALAGOINHAS BR	-R$ 450,00	R$ 2.360,57
06/28/25 at 6:06:54 PM	ATACADAO 924 AS ALAGOINHAS BR	-R$ 1.075,00	R$ 2.810,57

Date	Transaction	Amount	Balance
06/28/25 at 12:21:18 PM	Pix received from Alagoinhas Citrus Comercio Atacadista Hortifrutigranjeiros Ltda	R$ 575,00	R$ 3.885,57
06/28/25 at 10:49:18 AM	Withdrawal - TECBAN Terminal	-R$ 1.000,00	R$ 3.310,57
06/28/25 at 10:00:26 AM	RESTAURANTE E CHURRASC FEIRA DE SANTBR	-R$ 32,00	R$ 4.310,57
06/28/25 at 09:55:28 AM	POSTO COQUEIRO FEIRA DE SANTBR	-R$ 100,00	R$ 4.342,57
06/27/25 at 6:47:38 PM	JAMILE ALMEIDA FIGUERE ALAGOINHAS BR	-R$ 160,96	R$ 4.442,57
06/26/25 at 4:33:34 PM	FS2-FEIRA DE SANTANA D FEIRA DE SANTBR	-R$ 110,30	R$ 4.603,53
06/26/25 at 3:47:40 PM	SANARE FARAMACIA FEIRA DE SANTBR	-R$ 307,00	R$ 4.713,83
06/26/25 at 3:32:04 PM	RaiaDrogasilSA FEIRA DE SANTBR	-R$ 22,27	R$ 5.020,83
06/26/25 at 1:44:28 PM	PEROLA RESTAURANTE E L FEIRA DE SANTBR	-R$ 59,39	R$ 5.043,10
06/26/25 at 09:39:32 AM	Pix sent to Companhia de Eletricidade do Estado da Bahia Coelba	-R$ 567,61	R$ 5.102,49
06/26/25 at 09:20:45 AM	Pix sent to Jackson Marques dos Santos	-R$ 700,00	R$ 5.670,10
06/26/25 at 09:01:45 AM	Payment to SUL AMERICA COMPANHIA DE SEGURO SAUDE	-R$ 2.785,62	R$ 6.370,10
06/26/25 at 08:37:42 AM	Pix sent to Veronica de Queiroz Sergio	-R$ 1.200,00	R$ 9.155,72
06/26/25 at 08:35:11 AM	Pix sent to Jackson Marques dos Santos	-R$ 2.500,00	R$ 10.355,72
06/26/25 at 6:33:44 PM	Pix received from Tiago Rios Ribeiro Caldas	R$ 10.000,00	R$ 12.855,72
06/25/25 at 6:46:11 PM	Pix sent to Start Telecom Ltda	-R$ 99,99	R$ 2.855,72
06/25/25 at 6:45:35 PM	Pix sent to Start Telecom Ltda	-R$ 104,96	R$ 2.955,71
06/25/25 at 2:30:45 PM	Pix sent to Torres Filho Cia Ltda	-R$ 195,00	R$ 3.060,67
06/25/25 at 11:13:48 AM	Pix sent to Veronica de Queiroz Sergio	-R$ 1.000,00	R$ 3.255,67
06/24/25 at 12:08:15 PM	MILKY MOO GUARAJUBA CAMACARI BR	-R$ 48,00	R$ 4.255,67
06/24/25 at 11:10:38 AM	SAL E BRASA EXPRESS CAMACARI BR	-R$ 58,00	R$ 4.303,67
06/24/25 at 11:03:58 AM	PASTEL CARIOCA CAMACARI BR	-R$ 16,00	R$ 4.361,67
06/24/25 at 11:02:44 AM	BOBS GUARAJUBA CAMACARI BR	-R$ 87,00	R$ 4.377,67
06/24/25 at 10:18:40 AM	LOJAS AMERICANAS CAMACARI BR	-R$ 29,99	R$ 4.464,67
06/23/25 at 9:42:49 PM	FARMACIA SILVA ROCHA ALAGOINHAS BR	-R$ 43,88	R$ 4.494,66
06/23/25 at 7:38:34 PM	G BARBOSA 37 ALAGOINHAS BR	-R$ 72,42	R$ 4.538,54
06/23/25 at 7:07:11 PM	ATACADAO 924 AS ALAGOINHAS BR	-R$ 165,36	R$ 4.610,96
06/23/25 at 5:35:55 PM	Pix sent to Hd2 Calcados Ltda	-R$ 119,98	R$ 4.776,32
06/23/25 at 4:10:23 PM	Pix received from Jose Raimundo Pereira da Cruz	R$ 4.896,00	R$ 4.896,30
06/23/25 at 3:52:13 PM	Pix sent to Alice Edianne Coelho Nascimento 06899799596	-R$ 35,00	R$ 0,30
06/23/25 at 3:51:04 PM	Pix received from Alagoinhas Citrus Comercio Atacadista Hortifrutigranjeiros Ltda	R$ 10,00	R$ 35,30
06/22/25 at 08:36:47 AM	G BARBOSA 37 ALAGOINHAS BR	-R$ 22,07	R$ 25,30
06/22/25 at 08:21:00 AM	SUPERMERCADO TODA HORA ALAGOINHAS BR	-R$ 165,88	R$ 47,37
06/21/25 at 9:00:44 PM	RaiaDrogasilSA ALAGOINHAS BR	-R$ 21,49	R$ 213,25
06/19/25 at 5:29:16 PM	Pix sent to Cencosud Brasil Comercial Ltda	-R$ 63,91	R$ 234,74
06/19/25 at 3:22:07 PM	Pix sent to Gleiziane Machado da Silva	-R$ 11,00	R$ 298,65

Date	Transaction	Amount	Balance
06/19/25 at 3:06:58 PM	Pix sent to Rosimeire Ferreira dos Santos	-R$ 145,00	R$ 309,65
06/19/25 at 08:35:28 AM	Pix sent to Loterias Caixa	-R$ 47,50	R$ 454,65
06/18/25 at 7:50:02 PM	Pix sent to Jamile Almeida Figueredo	-R$ 165,95	R$ 502,15
06/18/25 at 7:33:45 PM	Pix sent to Claro	-R$ 244,79	R$ 668,10
06/18/25 at 6:57:58 PM	SUPERMERCADO TODA HORA ALAGOINHAS BR	-R$ 35,93	R$ 912,89
06/18/25 at 6:46:42 PM	SALAO DE BELEZA EL SHA ALAGOINHAS BR	-R$ 130,00	R$ 948,82
06/18/25 at 2:04:14 PM	CLINICA MULTIVIVA ALAGOINHAS BR	-R$ 650,00	R$ 1.078,82
06/18/25 at 1:12:04 PM	Pix received from Alagoinhas Citrus Comercio Atacadista Hortifrutigranjeiros Ltda	R$ 1.000,00	R$ 1.728,82

Simple statement for verification, subject to updates.

Important: This information is confidential and intended exclusively for specific individual(s) and purposes, and is protected by law. The system uses various sources for consultation, and the information is updated at different times, so the statement may be subject to change at any time and/or contain outdated information. The maintenance of the XP account, its related products and services will comply with the rules established in the contract and may be suspended or canceled at any time, without prior consent. This material is for informational and summary purposes only and does not constitute a recommendation and/or guarantee of service contracting, which will be subject to eligibility analysis by XP and supplemented by additional information from the Application. In case of conflict between this material and the contract, the contract shall prevail. If you have any questions about the transactions, please visit our website: www.xpi.com.br, or call 4003-3710 (capitals and metropolitan areas) and/or 0800 880 3710 (other locations). For complaints, contact our Ombudsman at 0800 722 3710.

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I, André Vinícius Inacio Penna Mello, telephone number 415 425-2508, mailing address P.O. Box 90487, San Diego, CA 92169, certify that the professional translation of this document from Portuguese to English has been performed by myself, a qualified translator fluent in both languages, and that the following is an accurate and complete translation of the document.

_____ **Date: August 5, 2025.**

Conta Digital Extrato
Data da consulta: 18/07/2025 19:03:12

JACKSON MARQUES DOS SANTOS
Documento: 331.338.218-57
Saldo disponível no final do período filtrado: R$ 241.445,90

Banco XP S.A | Agência: 0001 | Conta: 2274633
De: 18/06/2025 Até: 18/07/2025

Data	Descrição	Valor	Saldo
18/07/25 às 15:46:34	Pix recebido de J Raimundo Pereira da Cruz	R$ 4.896,00	R$ 241.445,90
18/07/25 às 15:34:49	TED recebida de JAGRAO COMERCIAL EXPORTADORA LTDA	R$ 57.870,72	R$ 66.549,90
18/07/25 às 15:34:49	TED recebida de GREEN VAULT EXPORT LTDA	R$ 170.000,00	R$ 236.549,90
18/07/25 às 12:28:58	SUPERMERCADO TODA HORA ALAGOINHAS BR	-R$ 44,08	R$ 8.679,18
18/07/25 às 12:22:36	PLASBOM COMERCIO DE EMB ALAGOINHAS BR	-R$ 2,40	R$ 8.723,26
18/07/25 às 07:02:16	SOUZA SUPERMERCADO ALAGOINHAS BR	-R$ 4,99	R$ 8.725,66
17/07/25 às 16:29:58	Pix enviado para Igor Augusto Campos	-R$ 12,00	R$ 8.730,65
17/07/25 às 16:23:01	Pix recebido de M de Santana Ferreira Floricultura Me	R$ 425,00	R$ 8.742,65
17/07/25 às 14:00:02	Pix enviado para Rosimeire Ferreira dos Santos	-R$ 130,00	R$ 8.317,65
17/07/25 às 07:05:38	SOUZA SUPERMERCADO ALAGOINHAS BR	-R$ 4,99	R$ 8.447,65
17/07/25 às 06:43:54	PANIFICACAO CENTRAL ALAGOINHAS BR	-R$ 7,20	R$ 8.452,64
16/07/25 às 22:03:36	ESPORTE ARENA ALAGOINHAS BR	-R$ 150,00	R$ 8.459,84
16/07/25 às 15:53:40	SALAO ELSHADAY ALAGOINHAS BR	-R$ 265,00	R$ 8.609,84
16/07/25 às 15:43:45	Pix enviado para Salao de Beleza Elshaday Ltda	-R$ 40,00	R$ 8.874,84
16/07/25 às 12:34:26	Pix enviado para M de Santana Ferreira Floricultura	-R$ 425,00	R$ 8.914,84
16/07/25 às 09:19:37	Pix enviado para M de Santana Ferreira Floricultura	-R$ 425,00	R$ 9.339,84
15/07/25 às 19:29:01	VIA MARIA RESTAURANTE CANDEIAS BR	-R$ 135,92	R$ 9.764,84
15/07/25 às 18:06:23	SMS ESTACIONAMENTO SALVADOR BR	-R$ 28,00	R$ 9.900,76
15/07/25 às 16:24:03	BigmixServicos SALVADOR BR	-R$ 4,49	R$ 9.928,76
14/07/25 às 17:12:17	G BARBOSA 37 ALAGOINHAS BR	-R$ 17,29	R$ 9.933,25
14/07/25 às 10:23:08	Pagamento para M E GOMES ENSINO DE IDIOMAS EIRELI	-R$ 528,90	R$ 9.950,54
14/07/25 às 08:28:55	Pix enviado para Jackson Marques dos Santos	-R$ 3.600,00	R$ 10.479,44
14/07/25 às 08:26:26	Pix enviado para Telefonica Brasil S.A.	-R$ 59,00	R$ 14.079,44
14/07/25 às 08:24:56	Pix enviado para Telefonica Brasil S.A.	-R$ 78,37	R$ 14.138,44
14/07/25 às 08:24:18	Pix enviado para Telefonica Brasil S.A.	-R$ 75,00	R$ 14.216,81
14/07/25 às 07:48:58	Pix enviado para Bluegreen Pagamentos Ltda	-R$ 5.465,58	R$ 14.291,81
13/07/25 às 16:54:58	ShoppingFeiraDe FEIRA DE SANTBR	-R$ 11,00	R$ 19.757,39
13/07/25 às 16:49:00	LOJAS RIACHUELO FEIRA DE SANTBR	-R$ 449,94	R$ 19.768,39
13/07/25 às 16:30:27	HNA*OBOTICARIO FEIRA DE SANTBR	-R$ 61,80	R$ 20.218,33

Data	Descrição	Valor	Saldo
13/07/25 às 16:27:34	ZP*HAPPY KIDS PIRACICABA BR	-R$ 60,00	R$ 20.280,13
13/07/25 às 16:03:01	QSQ FEIRA DE SANT FEIRA DE SANTBR	-R$ 8,90	R$ 20.340,13
13/07/25 às 15:56:45	SHOPPING IGUATEMI FEIRA DE SANTBR	-R$ 18,00	R$ 20.349,03
13/07/25 às 15:26:32	LUPOBOULEVARDSHOP FEIRA DE SANTBR	-R$ 60,00	R$ 20.367,03
13/07/25 às 14:01:50	YAN PING FEIRA FEIRA DE SANTBR	-R$ 37,73	R$ 20.427,03
13/07/25 às 13:53:13	YAN PING FEIRA FEIRA DE SANTBR	-R$ 86,00	R$ 20.464,76
13/07/25 às 13:32:14	SHOPPING IGUATEMI FEIRA DE SANTBR	-R$ 77,00	R$ 20.550,76
12/07/25 às 18:44:22	Pix enviado para Anderson Fernando Falla Alonso	-R$ 4.096,00	R$ 20.627,76
12/07/25 às 18:40:57	Pix enviado para Veronica de Queiroz Sergio	-R$ 3.000,00	R$ 24.723,76
12/07/25 às 18:34:20	Pix recebido de Tiago Rios Ribeiro Caldas	R$ 25.576,00	R$ 27.723,76
12/07/25 às 18:02:43	Pix enviado para Raia Drogasil S/A	-R$ 177,85	R$ 2.147,76
12/07/25 às 16:24:54	Pix enviado para Ml Churrascaria e Conveniencia Ltda	-R$ 60,00	R$ 2.325,61
12/07/25 às 15:43:50	Pix enviado para Farma Rocha Produtos Farmaceuticos Ltda	-R$ 65,90	R$ 2.385,61
12/07/25 às 14:26:20	Pix enviado para Br Grill Comercio de Alimentos Ltda	-R$ 21,00	R$ 2.451,51
12/07/25 às 12:07:34	Pix enviado para Loterias Caixa	-R$ 36,00	R$ 2.472,51
12/07/25 às 11:59:16	Pix enviado para Loterias Caixa	-R$ 48,59	R$ 2.508,51
12/07/25 às 10:45:56	Pix recebido de Jose Raimundo Pereira da Cruz	R$ 2.448,00	R$ 2.557,10
11/07/25 às 17:50:29	Pix enviado para Cencosud Brasil Comercial Ltda	-R$ 67,88	R$ 109,10
10/07/25 às 18:32:40	Pix enviado para Rosimeire Ferreira dos Santos	-R$ 260,00	R$ 176,98
10/07/25 às 12:40:58	CASA DA MUKECA LTDA ME ALAGOINHAS BR	-R$ 132,56	R$ 436,98
10/07/25 às 07:10:00	PANIFICACAO CENTRAL ALAGOINHAS BR	-R$ 6,00	R$ 569,54
09/07/25 às 18:04:34	Pix enviado para Alexandre Felipe Mutti de Almeida	-R$ 60,00	R$ 575,54
09/07/25 às 18:02:04	Pix enviado para Alexandre Felipe Mutti de Almeida	-R$ 40,00	R$ 635,54
08/07/25 às 15:37:29	Pix enviado para Atp Comercio de Alimentos Ltda	-R$ 25,26	R$ 675,54
07/07/25 às 17:45:55	Pix enviado para Cencosud Brasil Comercial Ltda	-R$ 31,13	R$ 700,80
07/07/25 às 08:29:20	Pagamento para ALLIANZ SEGUROS S A	-R$ 409,91	R$ 731,93
07/07/25 às 08:29:18	Pagamento para SUL AMERICA COMPANHIA DE SEGURO SAUDE	-R$ 2.686,17	R$ 1.141,84
06/07/25 às 18:39:30	Pix enviado para Igreja Batista Betel Em Alagoinhas	-R$ 300,00	R$ 3.828,01
06/07/25 às 13:17:44	CASA DA MUKECA LTDA ME ALAGOINHAS BR	-R$ 109,00	R$ 4.128,01
06/07/25 às 11:01:56	ATACADAO 924 AS ALAGOINHAS BR	-R$ 415,20	R$ 4.237,01
06/07/25 às 10:26:42	Pix enviado para Servico Autonomo de Agua e Esgoto	-R$ 195,61	R$ 4.652,21
05/07/25 às 09:54:19	Pix enviado para Wms Supermercados do Brasil Ltda	-R$ 170,91	R$ 4.847,82
05/07/25 às 08:01:36	Pix enviado para Rosemara de Cassia da Silva	-R$ 2.000,00	R$ 5.018,73
04/07/25 às 21:23:37	Pix enviado para Nova Candeias Comercio de Combustivel Ltda	-R$ 199,45	R$ 7.018,73
04/07/25 às 20:26:40	AntonioMedeirosDe SALVADOR BR	-R$ 36,00	R$ 7.218,18
04/07/25 às 19:53:59	ENAPARK. SHOPPING BARR SALVADOR BR	-R$ 14,00	R$ 7.254,18

Data	Descrição	Valor	Saldo
04/07/25 às 19:51:09	FISIA NFS2035 SALVADOR BR	-R$ 229,99	R$ 7.268,18
04/07/25 às 19:32:46	AREZZO REGUEIRA SALVADOR BR	-R$ 190,00	R$ 7.498,17
04/07/25 às 19:00:40	LUPOBARRA SALVADOR BR	-R$ 211,00	R$ 7.688,17
04/07/25 às 18:34:16	YAN PING S BARRA SALVADOR BR	-R$ 32,61	R$ 7.899,17
04/07/25 às 18:30:03	YAN PING S BARRA SALVADOR BR	-R$ 31,78	R$ 7.931,78
04/07/25 às 18:23:12	BURGER KING SALVADOR BR	-R$ 91,70	R$ 7.963,56
04/07/25 às 18:04:28	SHOPPING BARRA SALVADOR BR	-R$ 66,80	R$ 8.055,26
04/07/25 às 17:07:08	Pix enviado para Alagoinhas Citrus Comercio Atacadista Hortifrutigr	-R$ 89.217,00	R$ 8.122,06
04/07/25 às 17:05:28	Pix enviado para Sms Estacionamentos e Servicos Ltda	-R$ 30,00	R$ 97.339,06
04/07/25 às 16:56:01	TED recebida de GREEN VAULT EXPORT LTDA	R$ 89.217,36	R$ 97.369,06
04/07/25 às 16:52:23	Pix recebido de J Raimundo Pereira da Cruz	R$ 7.344,00	R$ 8.151,70
04/07/25 às 14:47:14	Pix recebido de Alagoinhas Citrus Comercio Atacadista Hortifrutigranjeiros Ltda	R$ 400,00	R$ 807,70
04/07/25 às 14:46:18	HOSPITAL SAO RAFA SALVADOR BR	-R$ 400,00	R$ 407,70
04/07/25 às 14:26:46	REI DO MATE - HSR SALVADOR BR	-R$ 26,40	R$ 807,70
03/07/25 às 19:11:54	Pix enviado para Tuna Pagamentos Ltda	-R$ 147,00	R$ 834,10
03/07/25 às 16:47:21	Pix enviado para Marcelo Cristiniano da Cruz	-R$ 50,00	R$ 981,10
03/07/25 às 14:27:18	Pix enviado para Br Grill Comercio de Alimentos Ltda	-R$ 16,00	R$ 1.031,10
03/07/25 às 11:56:57	Pix enviado para Raia Drogasil S/A	-R$ 1.759,64	R$ 1.047,10
02/07/25 às 15:45:17	Pix enviado para Raia Drogasil Sa	-R$ 79,20	R$ 2.806,74
02/07/25 às 15:19:40	Pix enviado para Jjax 5 Santos Comercio de Sobremesa Ltda	-R$ 20,00	R$ 2.885,94
02/07/25 às 11:46:12	Pix enviado para Cencosud Brasil Comercial Ltda	-R$ 19,98	R$ 2.905,94
02/07/25 às 07:33:04	Pix devolvido de Raia Drogasil S/A	R$ 1.406,63	R$ 2.925,92
02/07/25 às 07:10:18	Pix enviado para Raia Drogasil S/A	-R$ 1.406,63	R$ 1.519,29
01/07/25 às 14:06:11	Pagamento para BANCO C6 S.A.	-R$ 1.589,65	R$ 2.925,92
01/07/25 às 14:03:18	Pix enviado para Instituicao Adventista Nordeste Brasileira de Educacao e Assistencia Social	-R$ 666,75	R$ 4.515,57
01/07/25 às 13:59:34	Pix enviado para Instituicao Adventista Nordeste Brasileira de Educacao e Assistencia Social	-R$ 741,75	R$ 5.182,32
01/07/25 às 13:57:31	Pix enviado para Marconi Jannuzzelli Junior	-R$ 2.606,50	R$ 5.924,07
01/07/25 às 13:55:31	Pix recebido de Green Citrus	R$ 6.500,00	R$ 8.530,57
01/07/25 às 13:36:28	Pix enviado para Rosimeire Ferreira dos Santos	-R$ 130,00	R$ 2.030,57
30/06/25 às 18:55:07	Pix devolvido de Empreendimentos Pague Menos S/A	R$ 1.406,75	R$ 2.160,57
30/06/25 às 18:07:23	Pix enviado para Empreendimentos Pague Menos S/A	-R$ 1.406,75	R$ 753,82
29/06/25 às 18:46:09	Pix enviado para Igreja Batista Betel Em Alagoinhas	-R$ 200,00	R$ 2.160,57
29/06/25 às 10:06:46	Pix devolvido de Empreendimentos Pague Menos S/A	R$ 1.406,75	R$ 2.360,57
29/06/25 às 10:03:43	Pix enviado para Empreendimentos Pague Menos S/A	-R$ 1.406,75	R$ 953,82
28/06/25 às 18:40:53	SUPERMERCADO TODA HORA ALAGOINHAS BR	-R$ 450,00	R$ 2.360,57
28/06/25 às 18:06:54	ATACADAO 924 AS ALAGOINHAS BR	-R$ 1.075,00	R$ 2.810,57

Data	Descrição	Valor	Saldo
28/06/25 às 12:21:18	Pix recebido de Alagoinhas Citrus Comercio Atacadista Hortifrutigranjeiros Ltda	R$ 575,00	R$ 3.885,57
28/06/25 às 10:49:18	Saque - TERMINAL TECBAN	-R$ 1.000,00	R$ 3.310,57
28/06/25 às 10:00:26	RESTAURANTE E CHURRASC FEIRA DE SANTBR	-R$ 32,00	R$ 4.310,57
28/06/25 às 09:55:28	POSTO COQUEIRO FEIRA DE SANTBR	-R$ 100,00	R$ 4.342,57
27/06/25 às 18:47:38	JAMILE ALMEIDA FIGUERE ALAGOINHAS BR	-R$ 160,96	R$ 4.442,57
26/06/25 às 16:33:34	FS2-FEIRA DE SANTANA D FEIRA DE SANTBR	-R$ 110,30	R$ 4.603,53
26/06/25 às 15:47:40	SANARE FARAMACIA FEIRA DE SANTBR	-R$ 307,00	R$ 4.713,83
26/06/25 às 15:32:04	RaiaDrogasilSA FEIRA DE SANTBR	-R$ 22,27	R$ 5.020,83
26/06/25 às 13:44:28	PEROLA RESTAURANTE E L FEIRA DE SANTBR	-R$ 59,39	R$ 5.043,10
26/06/25 às 09:39:32	Pix enviado para Companhia de Eletricidade do Estado da Bahia Coelba	-R$ 567,61	R$ 5.102,49
26/06/25 às 09:20:45	Pix enviado para Jackson Marques dos Santos	-R$ 700,00	R$ 5.670,10
26/06/25 às 09:01:45	Pagamento para SUL AMERICA COMPANHIA DE SEGURO SAUDE	-R$ 2.785,62	R$ 6.370,10
26/06/25 às 08:37:42	Pix enviado para Veronica de Queiroz Sergio	-R$ 1.200,00	R$ 9.155,72
26/06/25 às 08:35:11	Pix enviado para Jackson Marques dos Santos	-R$ 2.500,00	R$ 10.355,72
26/06/25 às 08:33:44	Pix recebido de Tiago Rios Ribeiro Caldas	R$ 10.000,00	R$ 12.855,72
25/06/25 às 18:46:11	Pix enviado para Start Telecom Ltda	-R$ 99,99	R$ 2.855,72
25/06/25 às 18:45:35	Pix enviado para Start Telecom Ltda	-R$ 104,96	R$ 2.955,71
25/06/25 às 14:30:45	Pix enviado para Torres Filho Cia Ltda	-R$ 195,00	R$ 3.060,67
25/06/25 às 11:13:48	Pix enviado para Veronica de Queiroz Sergio	-R$ 1.000,00	R$ 3.255,67
24/06/25 às 12:08:15	MILKY MOO GUARAJUBA CAMACARI BR	-R$ 48,00	R$ 4.255,67
24/06/25 às 11:10:38	SAL E BRASA EXPRESS CAMACARI BR	-R$ 58,00	R$ 4.303,67
24/06/25 às 11:03:58	PASTEL CARIOCA CAMACARI BR	-R$ 16,00	R$ 4.361,67
24/06/25 às 11:02:44	BOBS GUARAJUBA CAMACARI BR	-R$ 87,00	R$ 4.377,67
24/06/25 às 10:18:40	LOJAS AMERICANAS CAMACARI BR	-R$ 29,99	R$ 4.464,67
23/06/25 às 21:42:49	FARMACIA SILVA ROCHA ALAGOINHAS BR	-R$ 43,88	R$ 4.494,66
23/06/25 às 19:38:34	G BARBOSA 37 ALAGOINHAS BR	-R$ 72,42	R$ 4.538,54
23/06/25 às 19:07:11	ATACADAO 924 AS ALAGOINHAS BR	-R$ 165,36	R$ 4.610,96
23/06/25 às 17:35:55	Pix enviado para Hd2 Calcados Ltda	-R$ 119,98	R$ 4.776,32
23/06/25 às 16:10:23	Pix recebido de Jose Raimundo Pereira da Cruz	R$ 4.896,00	R$ 4.896,30
23/06/25 às 15:52:13	Pix enviado para Alice Edianne Coelho Nascimento 06899799596	-R$ 35,00	R$ 0,30
23/06/25 às 15:51:04	Pix recebido de Alagoinhas Citrus Comercio Atacadista Hortifrutigranjeiros Ltda	R$ 10,00	R$ 35,30
22/06/25 às 08:36:47	G BARBOSA 37 ALAGOINHAS BR	-R$ 22,07	R$ 25,30
22/06/25 às 08:21:00	SUPERMERCADO TODA HORA ALAGOINHAS BR	-R$ 165,88	R$ 47,37
21/06/25 às 21:00:44	RaiaDrogasilSA ALAGOINHAS BR	-R$ 21,49	R$ 213,25
19/06/25 às 17:29:16	Pix enviado para Cencosud Brasil Comercial Ltda	-R$ 63,91	R$ 234,74
19/06/25 às 15:22:07	Pix enviado para Gleiziane Machado da Silva	-R$ 11,00	R$ 298,65

Data	Descrição	Valor	Saldo
19/06/25 às 15:06:58	Pix enviado para Rosimeire Ferreira dos Santos	-R$ 145,00	R$ 309,65
19/06/25 às 08:35:28	Pix enviado para Loterias Caixa	-R$ 47,50	R$ 454,65
18/06/25 às 19:50:02	Pix enviado para Jamile Almeida Figueredo	-R$ 165,95	R$ 502,15
18/06/25 às 19:33:45	Pix enviado para Claro	-R$ 244,79	R$ 668,10
18/06/25 às 18:57:58	SUPERMERCADO TODA HORA ALAGOINHAS BR	-R$ 35,93	R$ 912,89
18/06/25 às 18:46:42	SALAO DE BELEZA EL SHA ALAGOINHAS BR	-R$ 130,00	R$ 948,82
18/06/25 às 14:04:14	CLINICA MULTIVIVA ALAGOINHAS BR	-R$ 650,00	R$ 1.078,82
18/06/25 às 13:12:04	Pix recebido de Alagoinhas Citrus Comercio Atacadista Hortifrutigranjeiros Ltda	R$ 1.000,00	R$ 1.728,82

Extrato simples para conferência, sujeito a atualizações.

Importante: Estas informações são confidencias e destinadas exclusivamente a indivíduo(s) e propósitos específicos, sendo protegidas por lei. O sistema utiliza diversas fontes de consulta e as informações são atualizadas em diferentes momentos, de modo que o extrato poderá sofrer alterações a qualquer momento e/ou apresentar alguma informação desatualizada. A manutenção da conta XP, seus produtos e serviços relacionados obedecerão às regras previstas em contrato podendo ser suspenso ou cancelado a qualquer tempo, sem necessidade de prévia concordância. Este material possui caráter meramente informativo e resumido, não sendo uma recomendação e/ou garantia da contratação de serviços, a qual ficará sujeita às análises de elegibilidade da XP e será complementado por demais informações do Aplicativo. Em caso de conflito entre este material e o contrato, o último prevalecerá. Caso exista alguma dúvida sobre os lançamentos, favor acessar o nosso site: www.xpi.com.br, ou ligar para os números 4003–3710 (capitais e regiões metropolitanas) e/ou 0800 880 3710 (demais localidades). Para reclamações, contate nossa Ouvidoria no telefone nº 0800 722 3710

Banco XP S.A

Av. Chedit Jafet, 75 | Torre Sul

São Paulo | SP

CEP: 04551-010

CNPJ: 33.264.668/0001-03

Atendimento ao Cliente: 11 4003-3710 (capitais e regiões metropolitanas) e 0800 880 3710 (demais regiões).
Ouvidoria: 0800 722 3710

www.xpi.com.br

www.xpi.com.br/atendimento

SANTA CRUZ CITRUS

DOMESTIC AND FOREIGN MARKET

DECLARATION

We hereby declare, for all due purposes, that Mr. Jackson Marques dos Santos, registered under CPF No. 331.338.218-57, provides representation/sales services for the company Santa Cruz Citrus Ltda, registered under CNPJ No. 13.425.295/0001-09, headquartered at Distrito Beija Flor, 11- Galpão - São José do Itaporã - Muritiba/Bahia - ZIP Code 44340-000.

We inform that the payments made to the aforementioned professional correspond exclusively to commissions on sales actually carried out, with no employment relationship between the parties, as follows:

- From January to December 2024: R$ 137,930.40 (one hundred thirty-seven thousand, nine hundred and thirty reais and forty cents);

- From January to August 2025: R$ 132,405.40 (one hundred thirty-two thousand, four hundred and five reais and forty cents).

Muritiba/Bahia, September 11, 2025.

José Raimundo P. da Cruz

Santa Cruz Citrus Ltda

CNPJ: 13.425.295/0001-09

Legal Representative: José Raimundo P. da Cruz

023 872 315 11

NOTARY OFFICE WITH PROTEST AUTHORITY OF CRUZ DAS ALMAS – BAHIA
RUA LEONEL RIBAS, NO. 188, CENTRO – CRUZ DAS ALMAS – BAHIA – ZIP CODE 44380-000

I certify by likeness (signature recognition) 0001 signature(s) of
JOSE RAIMUNDO PEREIRA DA CRUZ
Emol: R$3.33 Fis: R$2.37 FEC: R$0.84 Def: R$0.09 PGE: R$0.13
MP: R$0.07 FEU: R$0.07 Total: R$6.90
Seal(s): 1804.AB505199-7
In witness ( ) whereof
ANA CELMA MAIA FRANCA - CLERK
CRUZ DAS ALMAS - BAHIA 09/19/2025

Verify the seal(s) at:
www.tjba.jus.br/autenticidade

@santacruzcitrus
(75)99997-9044

TIAGOCALDAS
LEMON EXPORT
(75) 98106-3814

Address: Rodovia BR-101 , No Number - Rural Zone
Cruz das Almas - Bahia I ZIP Code: 44380-000

COMMISSION PAYMENT DECLARATION

The company **Tiago Caldas Exportação e Importação Ltda**, located at **Rodovia BR 101, No Number – Rural Zone – Cruz das Almas/Bahia – ZIP Code 44380-000**, registered under **CNPJ No. 55.991.043/0001-78**, through its legal representative, declares that **Mr. Jackson Marques dos Santos**, registered under **CPF No. 331.338.218-57**, has received from this company amounts exclusively as commissions on sales, as detailed below:

- Fiscal Year 2024: **R$ 168,768.00 (one hundred sixty-eight thousand, seven hundred sixty-eight reais);**
- Fiscal Year 2025 (January to August): **R$ 111,640.00 (one hundred eleven thousand, six hundred forty reais).**

We further declare that these amounts refer exclusively to **sales commissions** and do not constitute an employment relationship between the parties.

Cruz das Almas/Bahia, September 19, 2025.

Tiago Caldas Exportação e Importação Ltda
CNPJ: 13.425.295/0001-09
Legal Representative: Tiago Rios R. Caldas
110.696.105-69

NOTARY OFFICE WITH PROTEST AUTHORITY OF CRUZ DAS ALMAS – BAHIA
RUA LEONEL RIBAS, NO. 155, CENTRO – CRUZ DAS ALMAS – BAHIA – ZIP CODE 44380-000
(75) 3621-3993
CNPJ: 27.380.373/0001-91

I certify by likeness (signature recognition) 0001 signature(s) of
TIAGO RIOS RIBEIRO CALDAS
Emol: R$3.33 Fis: R$2.37 FEC: R$0.84 Def: R$0.09 PGE: R$0.13
MP: R$0.07 FEU: R$0.07 Total: R$6.90
Seal(s): 1804.AB506369-3
In witness) whereof
LUCAS DOS SANTOS REIS - CLERK
CRUZ DAS ALMAS - BAHIA 09/23/2025

Verify the seal(s) at:
www.tjba.jus.br/autenticidade

NOTARY OFFICE OF NOTES, PROTESTS, AND TITLES
CRUZ DAS ALMAS - BAHIA

I, Carolina Favero da Silva, telephone number 415 425-2508, mailing address P.O. Box 90487, San Diego, CA 92169, certify that the professional translation of this document from Portuguese to English has been performed by myself, a qualified translator fluent in both languages, and that the following is an accurate and complete translation of the document.


_____ Date: October 3, 2025.

SANTA CRUZ CITRUS
MERCADO INTERNO E EXTERNO

DECLARAÇÃO

Declaramos, para os devidos fins, que o Sr. Jackson Marques dos Santos, inscrito no CPF nº 331.338.218-57, presta serviços de representação/comercialização para a empresa Santa Cruz Citrus Ltda, inscrita no CNPJ nº 13.425.295/0001-09, com sede no Distrito Beija Flor, 11 – Galpão – São José do Itaporã – Muritiba/BA – CEP 44340-000.

Informamos que os pagamentos efetuados ao referido profissional correspondem exclusivamente a comissões sobre vendas efetivamente realizadas, não havendo vínculo empregatício entre as partes, sendo:

- No período de janeiro a dezembro de 2024: R$ 137.930,40 (cento e trinta e sete mil, novecentos e trinta reais e quarenta centavos);

- No período de janeiro a agosto de 2025: R$ 132.405,40 (cento e trinta e dois mil, quatrocentos e cinco reais e quarenta centavos).

Muritiba/BA, 11 de setembro de 2025.

José Raimundo P. da Cruz

Santa Cruz Citrus Ltda
CNPJ: 13.425.295/0001-09
Representante legal: José Raimundo P. da Cruz

023 872 315 11

TABELIONATO DE NOTAS COM FUNÇÃO DE PROTESTO DE CRUZ DAS ALMAS - BA
RUA LEONEL RIBAS, Nº 188, BAIRRO CENTRO - CRUZ DAS ALMAS -BA - CEP 44.380-000
(75) 3621-3993
CNPJ: 27.380.373/0001-01

Reconheço por Semelhança 0001 firma(s) de:
JOSE RAIMUNDO PEREIRA DA CRUZ
Emol:R$3,33 Fis:R$2,37 FEC:R$0,84 Def:R$0,09 PGE:R$0,13
MP:R$0,07 FEU:R$0,07 Total:R$6,90
Selo(s): 1804.AB505199 – 7
Em Testemunho ( ) da verdade.
ANA CELMA MAIA FRANCA – ESCREVENTE
CRUZ DAS ALMAS – BA 19/09/2025
Consulte o(s) selo(s) em:
www.tjba.jus.br/autenticidade

@santacruzcitrus
(75)99997-9044

TIAGO CALDAS
EXPORTAÇÃO DE LIMÃO
(75) 98106-3814

Endereço: Rodovia BR 101, SN - Zona Rural
Cruz das Almas - BA | CEP: 44380-000

DECLARAÇÃO DE PAGAMENTOS DE COMISSÕES

A empresa **Tiago Caldas Exportação e Importação Ltda**, situada à **Rodovia BR 101, S/N – Zona Rural – Cruz das Almas/BA – CEP 44380-000**, inscrita no **CNPJ sob nº 55.991.043/0001-78**, por meio de seu representante legal, declara que o **Sr. Jackson Marques dos Santos**, inscrito no **CPF nº 331.338.218-57**, recebeu desta empresa valores exclusivamente a título de comissões sobre vendas, conforme segue:

- Exercício de 2024: **R$ 168.768,00 (cento e sessenta e oito mil, setecentos e sessenta e oito reais);**
- Exercício de 2025 (janeiro a agosto**): R$ 111.640,00 (cento e onze mil, seiscentos e quarenta reais).**

Declaramos, ainda, que tais valores se referem unicamente a **comissões de vendas**, não caracterizando vínculo empregatício entre as partes.

Cruz das Almas/BA, 19 de setembro de 2025.

Tiago Caldas Exportação e Importação Ltda
CNPJ: 55.991.043/0001-78
Representante legal: Tiago Ribeiro P. Caldas

110.696.105-69

TABELIONATO DE NOTAS COM FUNÇÃO DE PROTESTO DE CRUZ DAS ALMAS - BA
RUA LEONEL RIBAS, Nº 188, BAIRRO CENTRO - CRUZ DAS ALMAS - BA - CEP 44.380-000
(75) 3621-3993
CNPJ: 27.380.373/0001-91

Reconheço por Semelhança 0001 firma(s) de:
TIAGO RIOS RIBEIRO CALDAS
Emol: R$3,33 Fis: R$2,37 FEC: R$0,84 Def: R$0,09 PGE: R$0,13
TMP: R$0,07 FEU: R$0,07 Total: R$6,90
Selo(s): 1804 AB506369 – 3
Em Testemunho ( ) da verdade
LUCAS DOS SANTOS REIS – ESCREVENTE
CRUZ DAS ALMAS – BA 23/09/2025
Consulte o(s) selo(s) em:
www.tjba.jus.br/autenticidade

CRUZ DAS ALMAS-BA

indeed Access

Build a career you love.

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Homepage Career navigator Business Manager Salary

Business Manager Salary in Brazil

How much does a Business Manager earn in Brazil?

Average base salary

R$ 62,590 Pay for: Year

The salary range for a business manager position is R$ 62,590 per year in Brazil. 873 salaries reported. Updated March 27, 2026.

Business Manager positions open in Brazil.

See more job openings →

Vehicle Business Manager | Maringá - Paraná
C6 Bank **3.3** .
Maringá, PR
11 hours ago

0710/PR | Business Manager - Individual Clients | Sicredi Foz Morumbi Branch - Foz do Iguaçu/PR.
SICREDI **4.2** .
Foz do Iguaçu, PR
11 hours ago

Business and Services Manager I
Bradesco Bank **4.3** .
Curitiba, PR
11 hours ago

1/2

Cities with the highest salaries for the position of Business Manager near Brazil.

Cuiabá, MT
R$ 92,891 per year ›
6 salary reported

Porto Alegre, RS
R$ 73,618 per year ›
10 salary reported

Campinas, SP
R$ 73,204 per year ›
13th salary reported

Belo Horizonte, MG
R$ 70,957 per year ›
31 salary reported

São Paulo, SP
R$ 68,674 per year ›
70 salary reported

Curitiba, PR
R$ 63,628 per year ›
11 salary reported

Rio de Janeiro, RJ
R$ 60,884 per year ›
14 salary reported

Palhoça, SC
R$ 56,530 per year ›
2 salary reported

Manaus, AM
R$ 45,422 per year ›
3 salary reported

Where does a Business Manager position pay the most?

Compare salaries for the Business Manager position in different locations.

Enter the first location.

Enter a location

x

Enter the second location.

Enter a location

Compare

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BANCO CENTRAL DO BRASIL

Currency Converter

Quotation date 06/04/2026

Value

62.590,00

Convert from

Real (BRL)

To

United States Dollar (USD)

Conversion result

Conversion from: Real/BRL (790)
Amount to convert: 62,590.00

To: United States Dollar/USD (220)
Conversion result: 12,145.8511

Exchange rate used: 06/04/2026
Rate:
1 Real/BRL (790) = 0.1940542 US Dollars/USD (220)
1 US Dollar/USD (220) = 5.1532 Real/BRL (790)

- The calculation performed is for informational purposes only and does not replace the provisions of Brazilian exchange regulations for specific conversion cases.
- Conversions are available for dates entered from 01/02/1999 onwards.
- For non-working days, the exchange rate of the immediately preceding working day is assumed.
- The Central Bank assumes no responsibility for the non-simultaneous or lack of information provided, as well as for any errors in currency parities, or any other error, except for the parity relative to the United States dollar in relation to the Real. Likewise, it is not responsible for delays or unavailability of telecommunications services, interruptions, failures, or inaccuracies in the provision of services or information. It also assumes no responsibility for any loss or damage arising from such interruptions, delays, failures, or imperfections, as well as for the improper use of the information contained in the transaction.

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<http://[illegible]5749@N03/>

Acesso à informação

BANCO CENTRAL DO BRASIL

Currency Converter

Quotation date 06/04/2026

Value

241.445,90

Convert from

Real (BRL)

To

United States Dollar (USD)

Conversion result

Conversion from: Real/BRL (790)
Value to convert: 241,445.90

To: United States Dollar/USD (220)
Conversion result: 46,853.5861

Exchange rate used: 06/04/2026
Rate:
1 Real/BRL (790) = 0.1940542 US Dollars/USD (220)
1 US Dollar/USD (220) = 5.1532 Real/BRL (790)

- The calculation performed is for informational purposes only and does not replace the provisions of Brazilian exchange regulations for specific conversion cases.
- Conversions are available for dates entered from 01/02/1999 onwards.
- For non-working days, the exchange rate of the immediately preceding working day is assumed.
- The Central Bank assumes no responsibility for the non-simultaneous or lack of information provided, as well as for any errors in currency parities, or any other error, except for the parity relative to the United States dollar in relation to the Real. Likewise, it is not responsible for delays or unavailability of telecommunications services, interruptions, failures, or inaccuracies in the provision of services or information. It also assumes no responsibility for any loss or damage arising from such interruptions, delays, failures, or imperfections, as well as for the improper use of the information contained in the transaction.

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<http://[illegible]br.facebook.com/bancocentraldobrasil/
[illegible]5749@N03/>

Acesso à informação

Política monetária

Estabilidade financeira

Estatísticas

Cédulas e moedas

Publicações e pesquisa

To guarantee price stability, to safeguard a sound and efficient financial system, and to promote the economic well-being of society.

Customer service: 145 (local call cost)

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Exhibit D - Personal Documents

FEDERATIVE REPUBLIC OF BRAZIL
CIVIL REGISTRY OF NATURAL PERSONS

BIRTH CERTIFICATE

Name

JACKSON MARQUES DOS SANTOS

CPF

331.338 218-57

Registration

131946 01 55 1986 1 00016 192 0015265 84

Date of birth	Day	Month	Year
March thirty-first, nineteen eighty-six	31	03	1986

Time of birth	City of birth	State
10:00 PM	Nova Soure	Bahia

Place of birth	City of birth	State	Sex
Coração de Jesus Hospital Unit	Nova Soure	Bahia	Male

Parent's name	City of birth	State
Maria Nilza Marques dos Santos	No record	No record

Respective Grandparent

Pedro Antônio dos Santos; Maria Ferreira dos Santos

Parent's name	City of birth	State
José Alves Marques dos Santos	No record	No record

Respective Grandparent

Salvador Marques dos Santos; Inez Angélica dos Santos

Date of registration	Live birth registration number
April first, nineteen eighty-six	No record

Notes/ Annotations

Observations: "IN COMPLIANCE WITH THE PROVISIONS OF ART. 106 OF LAW No. 6,015, OF 12/31/1973, I HEREBY CERTIFY THAT THE REGISTERED PERSON MARRIED ON 01/19/2019 TO BRUNA JANAINA CARDIL, WHOSE SPOUSES RETAINED THEIR BIRTH NAMES, ACCORDING TO THE ENTRY RECORDED UNDER RECORD No. 3036, ON PAGE 26 OF BOOK B 11, SANTA ADÉLIA/SÃO PAULO. I CERTIFY, NOVA SOURE, 01/29/2019. ANANDA S. SANTOS, DEPUTY, NOTHING ELSE TO REPORT."

Breakdown of the act value: R$42.00, distributed as follows: Fees: R$20.29, Fiscal Tax: R$14.41, FECOM: R$5.12, PGE: R$0.81, FMMPBA: R$0.42, FEURB: R$0.42, Public Defense

CNS No. 13194-6
Extrajudicial Service of the Sole Office of the Judicial District of Nova Soure
Nova Soure - Bahia

Líbia Cavalcanti Queiroz de Melo
Civil Registry Registrar

Rua Primeiro de Junho, No. 366, House, Centro, 48460-000,
Nova Soure - Bahia

The content of this certificate is true. I certify.

Nova Soure - Bahia, August 26, 2025.

----//signature//----

Libia Cavalcanti Queiroz de Melo
Registrar

Ananda Silva dos Santos
Authorized Clerk

Authenticity Seal
Court of Justice of the State of Bahia
Notarial or Registry Act
2154AB1275378
4DRJP4H157
Verify at:
www.tjba.jus.br/autenticidade

IA 011447539

I, Carolina Favero da Silva, telephone number 415 425-2508, mailing address P.O. Box 90487, San Diego, CA 92169, certify that the professional translation of this document from Portuguese to English has been performed by myself, a qualified translator fluent in both languages, and that the following is an accurate and complete translation of the document.


_____ Date: October 3, 2025.

REPÚBLICA FEDERATIVA DO BRASIL
REGISTRO CIVIL DAS PESSOAS NATURAIS

CERTIDÃO DE NASCIMENTO

Nome

JACKSON MARQUES DOS SANTOS

Número do CPF

331.338.218-57

Matrícula

131946 01 55 1986 1 00016 192 0015265 84

Data de nascimento	Dia	Mês	Ano
Trinta e um de março de mil e novecentos e oitenta e seis	31	03	1986

Horário de nascimento	Município da naturalidade	UF
22:00 horas	Nova Soure	BA

Local de nascimento	Município de nascimento	UF	Sexo
Unidade Hospitalar Coração de Jesus	Nova Soure	BA	Masculino

Nome do(a) Genitor(a)	Município de nascimento	UF
Maria Nilza Marques dos Santos	Não Consta	N/C

Avô(ó)(s) respectivo(s)

Pedro Antônio dos Santos; Maria Ferreira dos Santos

Genitor(a)	Município de nascimento	UF
José Alves Marques dos Santos	Não Consta	N/C

Avô(ó)(s) respectivo(s)

Salvador Marques dos Santos; Inez Angélica dos Santos

Data de registro	DNV
Primeiro de abril de mil e novecentos e oitenta e seis	Não Consta

Anotações/Averbações

Observações: "CUMPRINDO O DISPOSTO NO ART. 106 DA LEI Nº 6.015, DE 31/12/1973, FAÇO CONSTAR DE MODO A FICAR CONSIGNADO QUE O REGISTRADO CASOU NO DIA 19/01/2019, COM BRUNA JANAÍNA CARDILI, CUJOS CONSORTES CONTINUARAM COM OS MESMOS NOMES DE SOLTEIROS , CONFORME ASSENTO LAVRADO SOB O TERMO Nº 3036, AS FOLHAS 26, DO LIVRO B 11. SANTA ADÉLIA/SP. DOU FÉ, NOVA SOURE, 29/01/2019. ANANDA S. SANTOS, SUBST. LEGAL, NADA MAIS CONSTA."

Discriminação do valor ato: R$ 42,00, distribuído da seguinte forma: Emolumentos R$ 20,29, Taxa Fiscal R$ 14,41, FECOM R$ 5,12, PGE R$ 0,81, FMMPBA R$ 0,42, FEURB R$ 0,42, Def. Pública

CNS nº 13194-6
Serventia Extrajudicial do Ofício Único da Comarca de Nova Soure
Nova Soure - BA

Líbia Cavalcanti Queiroz de Melo
Oficial de Registro Civil
Rua Primeiro de Junho, Nº 366, Casa, Centro, 48460-000, Nova Soure - BA

O conteúdo da certidão é verdadeiro. Dou fé.

Nova Soure - BA, 26 de agosto de 2025.

Líbia Cavalcanti Queiroz de Melo
Oficial(a)

Ananda Silva dos Santos
Escrevente Autorizada

Selo de Autenticidade
Tribunal de Justiça do Estado da Bahia
Ato Notarial ou de Registro
2154AB1275378
4DRJP4H157
Consulte:
www.tjba.jus.br/autenticidade

IA01144753 9

Indústria Gráfica Brasileira Ltda

REPÚBLICA FEDERATIVA DO BRASIL

Assinatura do titular / *Signature du titulaire / Bearer's signature / Firma del titular*

GI363939

Este passaporte deve ser assinado pelo titular, salvo em caso de incapacidade.

Ce passeport doit être signé par le titulaire, sauf en cas d'incapacité.

This passport must be signed, except where the bearer is unable to do so.

Este pasaporte debe ser firmado por el titular, salvo en caso de incapacidad.



PASSAPORTE
PASSPORT

REPÚBLICA FEDERATIVA DO BRASIL

TIPO / *TYPE* **P**

PAÍS EMISSOR / *ISSUING COUNTRY* **BRA**

PASSAPORTE Nº / *PASSPORT No.* **GI363939**

SOBRENOME / *SURNAME*
MARQUES DOS SANTOS



NOME / *GIVEN NAMES*
JACKSON

NACIONALIDADE / *NATIONALITY*
BRASILEIRO(A)

DATA DO NASCIMENTO / *DATE OF BIRTH*
31 MAR/MAR 1986

CPF / *PERSONAL NUMBER*
331338218-57

SEXO / *SEX*
M

NATURALIDADE / *PLACE OF BIRTH*
NOVA SOURE/BA

FILIAÇÃO / *FILIATION*
JOSE ALVES MARQUES DOS SANTOS

MARIA NILZA MARQUES DOS SANTOS



DATA DE EXPEDIÇÃO / *DATE OF ISSUE*
04 DEZ/DEC 2023

AUTORIDADE / *AUTHORITY*
SR/PF/BA

VÁLIDO ATÉ / *DATE OF EXPIRY*
03 DEZ/DEC 2033

P<BRAMARQUES<DOS<SANTOS<<JACKSON<<<<<<<<<<<<<

GI363939<7BRA8603315M3312038331338218 57<<<06


REPÚBLICA FEDERATIVA DO BRASIL
VISTOS / VISAS
VISA
UNITED STATES OF AMERICA
Issuing Post Name
RECIFE
Control Number
20241851300001
Surname
MARQUES DOS SANTOS
Given Name
JACKSON
Visa Type /Class
R B1/B2
Passport Number
GI363939
Sex
M
Birth Date
31MAR1986
Nationality
BRZL
Entries
M
Issue Date
05JUL2024
Expiration Date
02JUL2034
0101
Annotation
U8494174
VNUSAMARQUES<DOS<SANTOS<<JACKSON<<<<<<<<<<<<
GI363939<7BRA8603315M3407024B3RCFONVSU162175

1213922CE0000000003399205

FEDERATIVE REPUBLIC OF BRAZIL
CIVIL REGISTRY OF NATURAL PERSONS

MARRIAGE CERTIFICATE

NAMES	CPF
JACKSON MARQUES DOS SANTOS	**331.338.218-57**
BRUNA JANAINA CARDILI	**405.291.048-65**

REGISTRATION
121392 01 55 2019 2 00011 026 0003036 48

Full birth names, dates of birth, place of birth, nationality, and filiation of the spouses

JACKSON MARQUES DOS SANTOS
Date of Birth: 03/31/1986 - Place of Birth: Nova Soure - Bahia - Nationality: Brazilian
Filiation: MARIA NILZA MARQUES DOS SANTOS
JOSÉ ALVES MARQUES DOS SANTOS

BRUNA JANAINA CARDILI
Date of Birth: 07/16/1993 - Place of Birth: Catanduva - São Paulo - Nationality: Brazilian
Filiation: ELIZANGELA JANAINA CARDILI
JULIO CARDILI JUNIOR

DATE OF MARRIAGE REGISTRATION (IN FULL)	DAY	MONTH	YEAR
January nineteenth, two thousand nineteen	19	01	2019

MARITAL PROPERTY REGIME

Partial Community Property

NAME EACH SPOUSE BEGAN TO USE (IF CHANGED)

The spouses continue to use the same name.

ADDITIONS / ANNOTATIONS TO BE INCLUDED

This certificate includes annotation elements in the margin of the record (CPF). Marriage recorded in Book B No. 11, on page 26, under No. 3036. Nothing further remains for me to certify.

REGISTRATION NOTES

No information.

CIVIL REGISTRY OF NATURAL PERSONS, GUARDIANSHIPS AND TRUSTEESHIPS OF SANTA ADÉLIA

Assuero Rodrigues Neto
Registrar

Judicial District and City of Santa Adélia/São Paulo
ZIP Code: 15950-000

Rua Duque de Caxias, No. 401
Phone (17) 3571-4052
Email: arn.cartorio@gmail.com

The content of this certificate is true. I certify.
Santa Adélia, September 1, 2020.

----//signature//----
Mariana Brito de Souza
Deputy Registrar

Exempt from fees and emoluments.

Verifier: (4)

12139-2 - AA 000009318

12139-2-009001-010000-0320

I, Carolina Favero da Silva, telephone number 415 425-2508, mailing address P.O. Box 90487, San Diego, CA 92169, certify that the professional translation of this document from Portuguese to English has been performed by myself, a qualified translator fluent in both languages, and that the following is an accurate and complete translation of the document.



_____ Date: July 8, 2025.

1213922CE0000000003399205

REPÚBLICA FEDERATIVA DO BRASIL
REGISTRO CIVIL DAS PESSOAS NATURAIS

CERTIDÃO DE CASAMENTO

NOMES	CPF
JACKSON MARQUES DOS SANTOS	331.338.218-57
BRUNA JANAINA CARDILI	405.291.048-65

MATRÍCULA

121392 01 55 2019 2 00011 026 0003036 48

Nomes completos de solteiro, datas de nascimento, naturalidade, nacionalidade e filiação dos cônjuges

JACKSON MARQUES DOS SANTOS
Nascimento: 31/03/1986 Naturalidade: Nova Soure - BA Nacionalidade: brasileiro
Filiação: MARIA NILZA MARQUES DOS SANTOS
JOSÉ ALVES MARQUES DOS SANTOS

BRUNA JANAINA CARDILI
Nascimento: 16/07/1993 Naturalidade: Catanduva - SP Nacionalidade: brasileira
Filiação: ELIZANGELA JANAINA CARDILI
JULIO CARDILI JUNIOR

DATA DO REGISTRO DO CASAMENTO (POR EXTENSO)	DIA	MÊS	ANO
Dezenove de janeiro de dois mil e dezenove	19	01	2019

REGIME DE BENS DO CASAMENTO
Comunhão Parcial de Bens

NOME QUE CADA UM DOS CÔNJUGES PASSOU A UTILIZAR (QUANDO HOUVER ALTERAÇÃO)
Os cônjuges continuam a usar o mesmo nome.

AVERBAÇÕES / ANOTAÇÕES À ACRESCER
A presente certidão envolve elementos de averbação na margem do termo (CPF). Casamento lavrado no livro B nº 11, à folhas nº 26, sob o nº 3036. Nada mais me cumpria certificar.

ANOTAÇÕES DE CADASTRO
Nada consta.

REGISTRO CIVIL DAS PESSOAS NATURAIS INTERDIÇÕES E TUTELA DE SANTA ADÉLIA

Assuero Rodrigues Neto
Oficial

Comarca e Cidade de Santa Adélia/SP
CEP: 15.950-000
Rua: Duque de Caxias, nº 401
(17) 3571-4052
E-mail: arn.cartorio@gmail.com

O conteúdo da certidão é verdadeiro. Dou fé.
Santa Adélia, 01 de setembro de 2020.

Mariana Brito de Souza
Substituta do Oficial

Isenta de custas e emolumentos.

Conferente: (4)

12139-2 - AA 000009318

12139-2-009001-010000-0320

1213922CE000000002034325B
To verify the authenticity of this document, scan the printed QR Code or visit the website: https://selodigital.tjsp.jus.br

FEDERATIVE REPUBLIC OF BRAZIL
CIVIL REGISTRY OF NATURAL PERSONS

----//signature//----

BIRTH CERTIFICATE

Name
BRUNA JANAINA CARDILI

CPF
405.291.048-65

Registration
121392 01 55 1993 1 00005 204 0003366 99

Date of birth	Day	Month	Year
July sixteenth, nineteen ninety-three	16	07	1993

Time of birth	City of birth	State
12:00 PM	Catanduva	São Paulo

Place of birth	City of birth	State	Sex
São Domingos Hospital	Catanduva	São Paulo	Female

Parent's name	City of birth	State
ELIZANGELA JANAINA CARDILI	Santa Adélia	São Paulo

Respective Grandparent
VERA ANTONIA ALONSO FLORES

Parent's name	City of birth	State
JULIO CARDILI JUNIOR	Ururaí	São Paulo

Respective Grandparent
FRANCISCA SOLER CARDILI; JULIO CARDILI

Date of registration	Live birth registration number
July twenty-first, nineteen ninety-three	NO RECORD.

Notes/ Annotations

In the margin of the record, the following NOTE: The person registered at birth was married on 01/19/2019 in Santa Adélia to Mr. Jackson Marques dos Santos under No. 3036, page 26, book B11. Santa Adélia, 01/29/2019. Lucas Ferreira Fernandes - Acting Registrar. This certificate includes information of an annotation in the margin of the record (CPF). Birth occurred at São Domingos Hospital, in the city of Catanduva - São Paulo. Recorded in Book A No. 5, on page No. 204V, under No. 3366.I have nothing further to certify.

CNS No. 121392
CIVIL REGISTRY OF NATURAL PERSONS, GUARDIANSHIPS AND TRUSTEESHIPS OF SANTA ADÉLIA
Judicial District and City of Santa Adélia/São Paulo

Mena Silva Cruz
Registrar

Avenida: Dr. Luiz Dumont, 550
ZIP Code: 15.950-000 - Santa Adélia - São Paulo

The content of this certificate is true. I certify.

Santa Adélia - São Paulo, August 19, 2025.

----//signature//----
Julia Ferreira
Deputy Clerk

Fees - Registrar: R$73.81; SEFAZ: R$14.76; ISS: R$3.88; Total: R$92.45

Verifier: (5)

HA 00230930B

I, Carolina Favero da Silva, telephone number 415 425-2508, mailing address P.O. Box 90487, San Diego, CA 92169, certify that the professional translation of this document from Portuguese to English has been performed by myself, a qualified translator fluent in both languages, and that the following is an accurate and complete translation of the document.


_____ Date: October 3, 2025.

REPÚBLICA FEDERATIVA DO BRASIL
REGISTRO CIVIL DAS PESSOAS NATURAIS

1213922CE000000002034325B
Para conferir a procedência deste documento efetue a leitura do QR Code impresso ou acesse o endereço eletrônico https://selodigital.tjsp.jus.br

CERTIDÃO DE NASCIMENTO

Nome
BRUNA JANAINA CARDILI

Número do CPF
405.291.048-65

Matrícula
121392 01 55 1993 1 00005 204 0003366 99

Data de nascimento	Dia	Mês	Ano
Dezesseis de julho de um mil novecentos e noventa e três	16	07	1993

Horário de nascimento	Município da naturalidade	UF
12:00 horas	Catanduva	SP

Local de nascimento	Município de nascimento	UF	Sexo
Hospital São Domingos	Catanduva	SP	Feminino

Nome do(a) Genitor(a)	Município de nascimento	UF
ELIZANGELA JANAINA CARDILI	Santa Adélia	SP

Avô(ó)(s) respectivo(s)
VERA ANTONIA ALONSO FLORES

Genitor(a)	Município de nascimento	UF
JULIO CARDILI JUNIOR	Ururaí	SP

Avô(ó)(s) respectivo(s)
FRANCISCA SOLER CARDILI; JULIO CARDILI

Data de registro	DNV
Vinte e um de julho de um mil novecentos e noventa e três	NÃO CONSTA.

Anotações/Averbações
Na margem do termo consta a seguinte ANOTAÇÃO: A registrada em nascimento casou-se aos 19/01/19 em Santa Adélia com o Sr. Jackson Marques dos Santos sob Nº3036 Fls26 livro B11. Santa Adélia 29/01/2019. Lucas Ferreira Fernandes-Oficial Interino. A presente certidão envolve elementos de averbação à margem do termo (CPF). Nascimento ocorrido no(a) Hospital São Domingos, na cidade de Catanduva - SP. Lavrado no livro A nº 05, à folha nº 204V, sob o nº 3366. Nada mais me cumpria certificar.

CNS n°121392
REGISTRO CIVIL DAS PESSOAS NATURAIS INTERDIÇÕES E TUTELA DE SANTA ADÉLIA
Comarca e Cidade de Santa Adélia/SP

Mena Silva Cruz
Oficial

Avenida: Dr. Luiz Dumont, 550
CEP: 15.950-000 - Santa Adélia - SP

O conteúdo da certidão é verdadeiro. Dou fé.

Santa Adélia - SP, 19 de agosto de 2025.

Julia Ferreira
Escrevente Substituta

Custas R$ - Oficial: 73,81; SEFAZ: 14,76; ISS: 3,88; Total: 92,45

Conferente: (5)

HA 00230930 8

Bruna Janaina Cardili

Assinatura do titular / *Signature du titulaire /*
Bearer's signature / Firma del titular

REPÚBLICA FEDERATIVA DO BRASIL

GJ302719

Este passaporte deve ser assinado
pelo titular, salvo em caso de incapacidade.

Ce passeport doit être signé
par le titulaire, sauf en cas d'incapacité.

This passport must be signed,
except where the bearer is unable to do so.

Este pasaporte debe ser firmado
por el titular, salvo en caso de incapacidad.



PASSAPORTE
PASSPORT

REPÚBLICA FEDERATIVA DO BRASIL

TIPO / *TYPE*: **P**

PAÍS EMISSOR / *ISSUING COUNTRY*: **BRA**

PASSAPORTE Nº / *PASSPORT No.*: **GJ302719**

SOBRENOME / *SURNAME*
CARDILI



NOME / *GIVEN NAMES*
BRUNA JANAINA

NACIONALIDADE / *NATIONALITY*
BRASILEIRO(A)

DATA DO NASCIMENTO / *DATE OF BIRTH*: **16 JUL/JUL 1993**

CPF / *PERSONAL NUMBER*: **405291048-65**

SEXO / *SEX*: **F**

NATURALIDADE / *PLACE OF BIRTH*: **CATANDUVA/SP**

FILIAÇÃO / *FILIATION*
JULIO CARDILI JUNIOR

ELIZANGELA JANAINA CARDILI



DATA DE EXPEDIÇÃO / *DATE OF ISSUE*
06 MAI/MAY 2024

VÁLIDO ATÉ / *DATE OF EXPIRY*
05 MAI/MAY 2034

AUTORIDADE / *AUTHORITY*
SR/PF/BA

P<BRACARDILI<<BRUNA<JANAINA<<<<<<<<<<<<<<<<<<<<
GJ302719<9BRA9307160F3405053405291048 65<<<24


REPÚBLICA FEDERATIVA DO BRASIL
VISTOS / VISAS
VISA
UNITED STATES OF AMERICA
Issuing Post Name
RECIFE
Control Number
20241851300004
Surname
CARDILI
Given Name
BRUNA JANAINA
Visa Type /Class
R B1/B2
Passport Number
GJ302719
Sex
F
Birth Date
16JUL1993
Nationality
BRZL
Entries
M
Issue Date
05JUL2024
Expiration Date
02JUL2034
0100
Annotation
U8494171
VNUSACARDILI<<BRUNA<JANAINA<<<<<<<<<<<<<<<<
GJ302719<9BRA9307160F3407024B3RCFONVSR121386

FEDERATIVE REPUBLIC OF BRAZIL
CIVIL REGISTRY OF NATURAL PERSONS

BIRTH CERTIFICATE

NAME:

NOAH CARDILI MARQUES

CPF

598.075.568-30

REGISTRATION:

1160040155 2021 1 00165 065 0096532 11

DATE OF BIRTH IN FULL	DAY	MONTH	YEAR
November eleventh, two thousand twenty-one	11	11	2021

TIME OF BIRTH	CITY OF BIRTH
8:03 PM	Catanduva - São Paulo

CITY OF REGISTRATION AND FEDERATION UNIT	PLACE, CITY OF BIRTH AND STATE	SEX
Catanduva - São Paulo	São Domingos Hospital, of this city, Catanduva - SP	Male

FILIATION

JACKSON MARQUES DOS SANTOS, born in Nova Soure - Bahia
BRUNA JANAINA CARDILI, born in Catanduva - São Paulo
Residents at Rua Cesar Rossi 725, Jardim Paulista, Santa Adélia/São Paulo

GRANDPARENTS

JOSÉ ALVES MARQUES DOS SANTOS and MARIA NILZA MARQUES DOS SANTOS
JULIO CARDILI JUNIOR and ELIZANGELA JANAINA CARDILI

TWIN	NAME AND REGISTRATION NUMBER OF TWIN(S)
No	NO INFORMATION

DATE OF REGISTRATION IN FULL	REGISTRATION NUMBER OF TWIN(S)
November twelfth, two thousand twenty-one	30-86022334-7

NOTES/ ANNOTATIONS

The registrant was born in Catanduva, SP, in accordance with Article 54, paragraph 4th of Law 6,015/73.

REGISTRATION NOTES

There was nothing further for me to certify.

CIVIL REGISTRY OFFICE
Rua Alagoas No. 769 - Centro
Catanduva - São Paulo - ZIP Code 15801-310
Phone: (17) 3521- 4084 / Fax: 3522-1632
Dr. Matheus Bressani Barbosa
Registrar
SILVANA CHIARI POSSEBON
RODRIGO LAZARINI BUSO
AGNALDO VALENTIM POSSEBON
RODRIGO LEANDRO ZAGHI
ESTELA RUTE NAVARRO CHIARI
BIANCA MARINELI DIONISIO
SARA DE ANDRADE CALIANO PELLIGRINI
GEISE CABRAL BELINI CORDEIRO
ANDRIELI RODRIGUES FERNANDES

The content of this certificate is true. I certify.
Catanduva, November 12, 2021.

----//signature//----

Rodrigo Leandro Zaghi
Clerk

1st COPY - EXEMPT FROM FEES

Rodrigo Leandro Zaghi
Authorized Clerk

1160042PV0000000081233219

Total: 0.00 | ISS: 0.00

Check the seal on the website below
https://selodigital.tjsp.jus.br

CIVIL REGISTRY OFFICE OF NATURAL PERSONS
OF CATANDUVA - STATE OF SÃO PAULO
Matheus Bressani Barbosa - Registrar
Rua Alagoas, 769
Phone: (17) 3521-4084 / 3522-1632 - ZIP Code 15801-310
Email: cartoriocatanduva@gmail.com

11600-4 - AA000108554

116004 - AA000108554 08/21

I, Carolina Favero da Silva, telephone number 415 425-2508, mailing address P.O. Box 90487, San Diego, CA 92169, certify that the professional translation of this document from Portuguese to English has been performed by myself, a qualified translator fluent in both languages, and that the following is an accurate and complete translation of the document.



_____ Date: July 11, 2025.

REPÚBLICA FEDERATIVA DO BRASIL
REGISTRO CIVIL DAS PESSOAS NATURAIS

CERTIDÃO DE NASCIMENTO

NOME:

NOAH CARDILI MARQUES

CPF
598.075.568-30

MATRÍCULA:

1160040155 2021 1 00165 065 0096532 11

DATA DE NASCIMENTO POR EXTENSO	DIA	MÊS	ANO
Onze de novembro de dois mil e vinte e um	11	11	2021

HORA DE NASCIMENTO	NATURALIDADE
20:03	Catanduva - SP

MUNICÍPIO DE REGISTRO E UNIDADE DA FEDERAÇÃO	LOCAL, MUNICÍPIO DE NASCIMENTO E UF	SEXO
Catanduva - SP	Hospital São Domingos, desta cidade - Catanduva - SP	Masculino

FILIAÇÃO
JACKSON MARQUES DOS SANTOS, natural de Nova Soure - BA
BRUNA JANAINA CARDILI, natural de Catanduva - SP
Residentes à rua Cesar Rossi, 725, Jardim Paulista, Santa Adélia/SP

AVÓS
JOSÉ ALVES MARQUES DOS SANTOS e MARIA NILZA MARQUES DOS SANTOS
JULIO CARDILI JUNIOR e ELIZANGELA JANAINA CARDILI

GÊMEO	NOME E MATRÍCULA DO(S) GÊMEO(S)
Não	NADA CONSTA

DATA DO REGISTRO POR EXTENSO	NÚMERO DA DECLARAÇÃO DE NASCIDO VIVO
Doze de novembro de dois mil e vinte e um	30-86022334-7

AVERBAÇÕES/ANOTAÇÕES A ACRESCER
O registrado é natural de Catanduva, SP, conforme art. 54, parágrafo 4º da Lei 6.015/73.

ANOTAÇÕES DE CADASTRO
Nada mais me cumpria certificar.

O conteúdo da certidão é verdadeiro. Dou fé.
Catanduva, 12 de novembro de 2021.

Rodrigo Leandro Zaghi
Escrevente

1ª VIA - ISENTA DE EMOLUMENTOS

Rodrigo Leandro Zaghi
Escrevente Autorizado

CARTÓRIO DE REGISTRO CIVIL
Rua Alagoas nº 769 - Centro
Catanduva - SP - CEP 15801-310
Fone: (17) 3521-4084 / 3522-1632
Dr. Matheus Bressani Barbosa
Oficial Delegado
SILVANA CHIARI POSSEBON
RODRIGO LAZARINI BUSO
AGNALDO VALENTIM POSSEBON
RODRIGO LEANDRO ZAGHI
ESTELA RUTE NAVARRO CHIARI
BIANCA MARINELI DIONISIO
SARA DE ANDRADE CALIANO PELLIGRINI
GEISE CABRAL BELINI CORDEIRO
ANDRIELI RODRIGUES FERNANDES

OFICIAL DE REGISTRO CIVIL DAS PESSOAS NATURAIS
DE CATANDUVA - ESTADO DE SÃO PAULO
Matheus Bressani Barbosa - Oficial
Rua Alagoas, 769
Fone (17) 3521-4084/3522-1632 - CEP 15801-310
e-mail: cartoriocatanduva@gmail.com

1160042PV0000000081233219

Total 0,00 ISS 0,00

Consulte o selo no site abaixo
https://selodigital.tjsp.jus.br

116004 - AA000108554 08/21

116004 - AA000108554

Menor de 12 anos de idade

Child under the age of 12

REPÚBLICA FEDERATIVA DO BRASIL

Assinatura do titular / *Signature du titulaire / Bearer's signature / Firma del titular*

GJ302721

Este passaporte deve ser assinado pelo titular, salvo em caso de incapacidade.

Ce passeport doit être signé par le titulaire, sauf en cas d'incapacité.

This passport must be signed, except where the bearer is unable to do so.

Este pasaporte debe ser firmado por el titular, salvo en caso de incapacidad.



PASSAPORTE
PASSPORT

REPÚBLICA FEDERATIVA DO BRASIL

TIPO / *TYPE*: P

PAÍS EMISSOR / *ISSUING COUNTRY*: BRA

PASSAPORTE Nº / *PASSPORT No.*: GJ302721

SOBRENOME / *SURNAME*
CARDILI MARQUES



NOME / *GIVEN NAMES*
NOAH

NACIONALIDADE / *NATIONALITY*
BRASILEIRO(A)

DATA DO NASCIMENTO / *DATE OF BIRTH*
11 NOV/NOV 2021

CPF / *PERSONAL NUMBER*
598075568-30

SEXO / *SEX*
M

NATURALIDADE / *PLACE OF BIRTH*
CATANDUVA/SP

FILIAÇÃO / *FILIATION*
JACKSON MARQUES DOS SANTOS

BRUNA JANAINA CARDILI

O titular, enquanto menor, está autorizado pelos genitores, pelo prazo deste documento, a viajar apenas com um dos pais, indistintamente. Res. CNJ 131/11, Art. 13.

DATA DE EXPEDIÇÃO / *DATE OF ISSUE*
06 MAI/MAY 2024

AUTORIDADE / *AUTHORITY*
SR/PF/BA

VÁLIDO ATÉ / *DATE OF EXPIRY*
05 MAI/MAY 2027

P<BRACARDILI<MARQUES<<NOAH<<<<<<<<<<<<<<<<<<<<

GJ302721<2BRA2111119M2705055980755683O<<<80


REPÚBLICA FEDERATIVA DO BRASIL
VISTOS / VISAS
VISA
UNITED STATES OF AMERICA
Issuing Post Name
RECIFE
Surname
CARDILI MARQUES
Given Name
NOAH
Passport Number
GJ302721
Entries
M
Annotation
Issue Date
05JUL2024
Sex
M
Control Number
202418513000002
Visa Type /Class
R B1/B2
Birth Date
11NOV2021
Nationality
BRZL
Expiration Date
02JUL2034
0100
U8494173
**
VNUSACARDILI<MARQUES<<NOAH<<<<<<<<<<<<<<<<<<<
GJ302721<2BRA2111119M3407024B3RCFONVST921537

FEDERATIVE REPUBLIC OF BRAZIL
CIVIL REGISTRY OF NATURAL PERSONS

BIRTH CERTIFICATE

NAME:

LUCAS CARDILI MARQUES

REGISTRATION:

1160040255 2015 1 00138 299 0080877 69

DATE OF BIRTH IN FULL	DAY	MONTH	YEAR
January seventh, two thousand fifteen	07	01	2015

TIME OF BIRTH	CITY OF BIRTH AND FEDERATION UNIT
3:08 PM	Catanduva – São Paulo

CITY OF REGISTRATION AND FEDERATION UNIT	PLACE OF BIRTH	SEX
Catanduva - São Paulo	São Domingos Hospital, of this city	Male

FILIATION

BRUNA JANAINA CARDILI, born in Catanduva and registered in Santa Adélia - São Paulo
JACKSON MARQUES DOS SANTOS, born in Nova Soure - Bahia

GRANDPARENTS

JOSÉ ALVES MARQUES DOS SANTOS and MARIA NILZA MARQUES DOS SANTOS (Paternal)
JULIO CARDILI JUNIOR and ELIZANGELA JANAINA CARDILI (Maternal)

TWIN	NAME AND REGISTRATION NUMBER OF TWIN(S)
No	NO INFORMATION

DATE OF REGISTRATION (IN FULL)	REGISTRATION NUMBER OF TWIN(S)
January eighth, two thousand fifteen	30665356120

NOTES/ ANNOTATIONS

NO INFORMATION.

CIVIL REGISTRY OFFICE
Rua Alagoas No. 769 - Centro
ZIP Code 15801-310 - Catanduva-SP
Phone: (17) *[unreadable]* / Fax: 3525-1587
Dr. Matheus Bressani Barbosa
[unreadable]
SILVANA *[unreadable]* POSSEBON
AGNALDO VALENTIN POSSEBON
RODRIGO LAZARIN [unreadable]
RODRIGO LEANDRO ZAGHI
ESTELA RUTE NAVARRO CHIARI
MILENE CRISTINA LOPES
Deputy Clerks

CIVIL REGISTRY OFFICE OF NATURAL PERSONS
OF CATANDUVA - STATE OF SÃO PAULO
Matheus Bressani Barbosa - Registrar
Rua Alagoas, 769
Phone: (17) 3521-4084 / 3522-1632 - ZIP Code 15801-160
Email: civilcatanduva@ig.com.br

The content of this certificate is true. I certify.
Catanduva, January 8, 2015.

----//signature//----

Estela Rute Navarro Chiari
Clerk

1st COPY - EXEMPT FROM FEES

Estela Rute Navarro Chiari
Authorized Clerk

11600-4 - AA 000018351

11600-4-018001-019000-1214

I, Carolina Favero da Silva, telephone number 415 425-2508, mailing address P.O. Box 90487, San Diego, CA 92169, certify that the professional translation of this document from Portuguese to English has been performed by myself, a qualified translator fluent in both languages, and that the following is an accurate and complete translation of the document.



_____ Date: July 11, 2025.

REPÚBLICA FEDERATIVA DO BRASIL
REGISTRO CIVIL DAS PESSOAS NATURAIS

CERTIDÃO DE NASCIMENTO

NOME:

LUCAS CARDILI MARQUES

MATRÍCULA:

1160040255 2015 1 00138 299 0080877 69

DATA DE NASCIMENTO POR EXTENSO	DIA	MÊS	ANO
Sete de janeiro de dois mil e quinze	07	01	2015

HORA	MUNICÍPIO DE NASCIMENTO E UNIDADE DA FEDERAÇÃO
15:08	Catanduva - SP

MUNICÍPIO DE REGISTRO E UNIDADE DA FEDERAÇÃO	LOCAL DE NASCIMENTO	SEXO
Catanduva - SP	Hospital São Domingos, desta cidade	Masculino

FILIAÇÃO
BRUNA JANAINA CARDILI, natural de Catanduva e reg. em Santa Adélia - SP
JACKSON MARQUES DOS SANTOS, natural de Nova Soure - BA

AVÓS
JOSÉ ALVES MARQUES DOS SANTOS e MARIA NILZA MARQUES DOS SANTOS (Paternos)
JULIO CARDILI JUNIOR e ELIZANGELA JANAINA CARDILI (Maternos)

GÊMEO	NOME E MATRÍCULA DO(S) GÊMEO(S)
Não	NADA CONSTA

DATA DO REGISTRO POR EXTENSO	NÚMERO DA DECLARAÇÃO DE NASCIDO VIVO
Oito de janeiro de dois mil e quinze	30665356120

OBSERVAÇÕES/AVERBAÇÕES
NADA CONSTA.

CARTORIO DO REGISTRO CIVIL
Rua Alagoas Nº 769 - Centro
Cep 15801-010 - Catanduva SP
Fone (17) [illegible] Fax 3525-1587
Dr. Matheus Bressani Barbosa
Oficial
SILVANA MARI POUSEBON
AGNALDO VALENTIM POUSEBON
RODRIGO LAZARINI BUENO
RODRIGO LEANDRO ZAGHI
ESTELA RUTE NAVARRO CHIARI
MILENE CRISTINA LOPES
Prepostos Escreventes

O conteúdo da certidão é verdadeiro. Dou fé.
Catanduva, 08 de janeiro de 2015.

Estela Rute Navarro Chiari
Escrevente

1ª VIA - ISENTA DE EMOLUMENTOS

Estela Rute Navarro Chiari
Escrevente Autorizada

OFICIAL DE REGISTRO CIVIL DAS PESSOAS NATURAIS
DE CATANDUVA - ESTADO DE SÃO PAULO
Matheus Bressani Barbosa - Oficial
Rua Alagoas, 769
Fone (17) 3521-4084/3522-1632 - CEP 15801-160
e-mail: civilcatanduva@ig.com.br

11600-4-018001-019000-1214

11600-4 - AA 000018351

Menor de 12 anos de idade

Child under the age of 12

REPÚBLICA FEDERATIVA DO BRASIL

Assinatura do titular / *Signature du titulaire / Bearer's signature / Firma del titular*

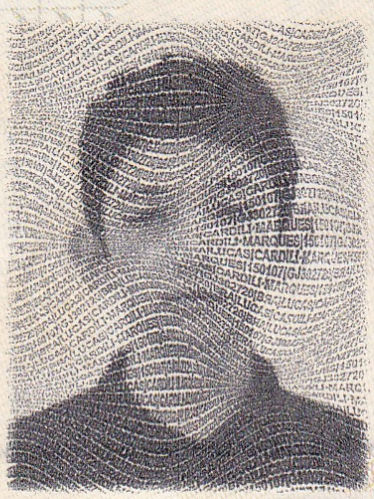
GJ302720

Este passaporte deve ser assinado pelo titular, salvo em caso de incapacidade.

Ce passeport doit être signé par le titulaire, sauf en cas d'incapacité.

This passport must be signed, except where the bearer is unable to do so.

Este pasaporte debe ser firmado por el titular, salvo en caso de incapacidad.



PASSAPORTE
PASSPORT

REPÚBLICA FEDERATIVA DO BRASIL

TIPO / *TYPE*: P

PAÍS EMISSOR / *ISSUING COUNTRY*: BRA

PASSAPORTE Nº / *PASSPORT No.*: GJ302720

SOBRENOME / *SURNAME*
CARDILI MARQUES

NOME / *GIVEN NAMES*
LUCAS

NACIONALIDADE / *NATIONALITY*
BRASILEIRO(A)

DATA DO NASCIMENTO / *DATE OF BIRTH*
07 JAN/JAN 2015

CPF / *PERSONAL NUMBER*
576454288-05

SEXO / *SEX*: M

NATURALIDADE / *PLACE OF BIRTH*
CATANDUVA/SP

FILIAÇÃO / *FILIATION*
JACKSON MARQUES DOS SANTOS

BRUNA JANAINA CARDILI





O titular, enquanto menor, está autorizado pelos genitores, pelo prazo deste documento, a viajar apenas com um dos pais, indistintamente. Res. CNJ 131/11, Art. 13.

DATA DE EXPEDIÇÃO / *DATE OF ISSUE*
06 MAI/MAY 2024

AUTORIDADE / *AUTHORITY*
SR/PF/BA

VÁLIDO ATÉ / *DATE OF EXPIRY*
05 MAI/MAY 2029

P<BRACARDILI<MARQUES<<LUCAS<<<<<<<<<<<<<<<<<<<

GJ302720<9BRA1501076M2905051576454288O5<<<06


REPÚBLICA FEDERATIVA DO BRASIL
VISTOS / VISAS
VISA
UNITED STATES OF AMERICA
Issuing Post Name
RECIFE
Control Number
20241851300003
Surname
CARDILI MARQUES
Given Name
LUCAS
Visa Type /Class
R B1/B2
Passport Number
GJ302720
Sex
M
Birth Date
07JAN2015
Nationality
BRZL
Entries
M
Issue Date
05JUL2024
Expiration Date
02JUL2034
1011
Annotation
U8494172
* *
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