

# Understanding the Orange Juice Supply and Consumer Demand

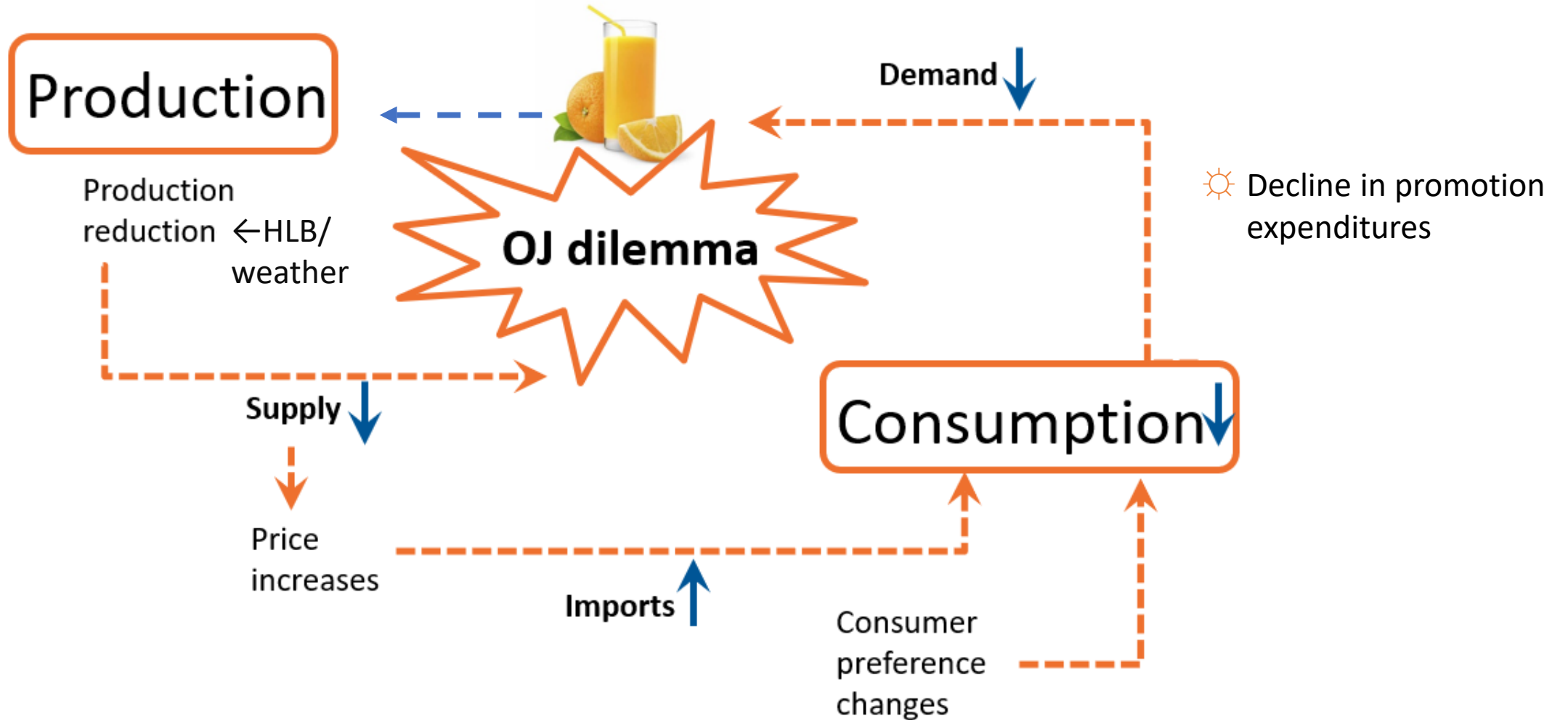
*Presentation to 2023 International Citrus & Beverage Conference*  
Thursday, September 21, 2023

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Director, Economic and Market Research  
Florida Department of Citrus

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FLORIDA DEPARTMENT OF CITRUS

# OJ Market Situation – The OJ Dilemma

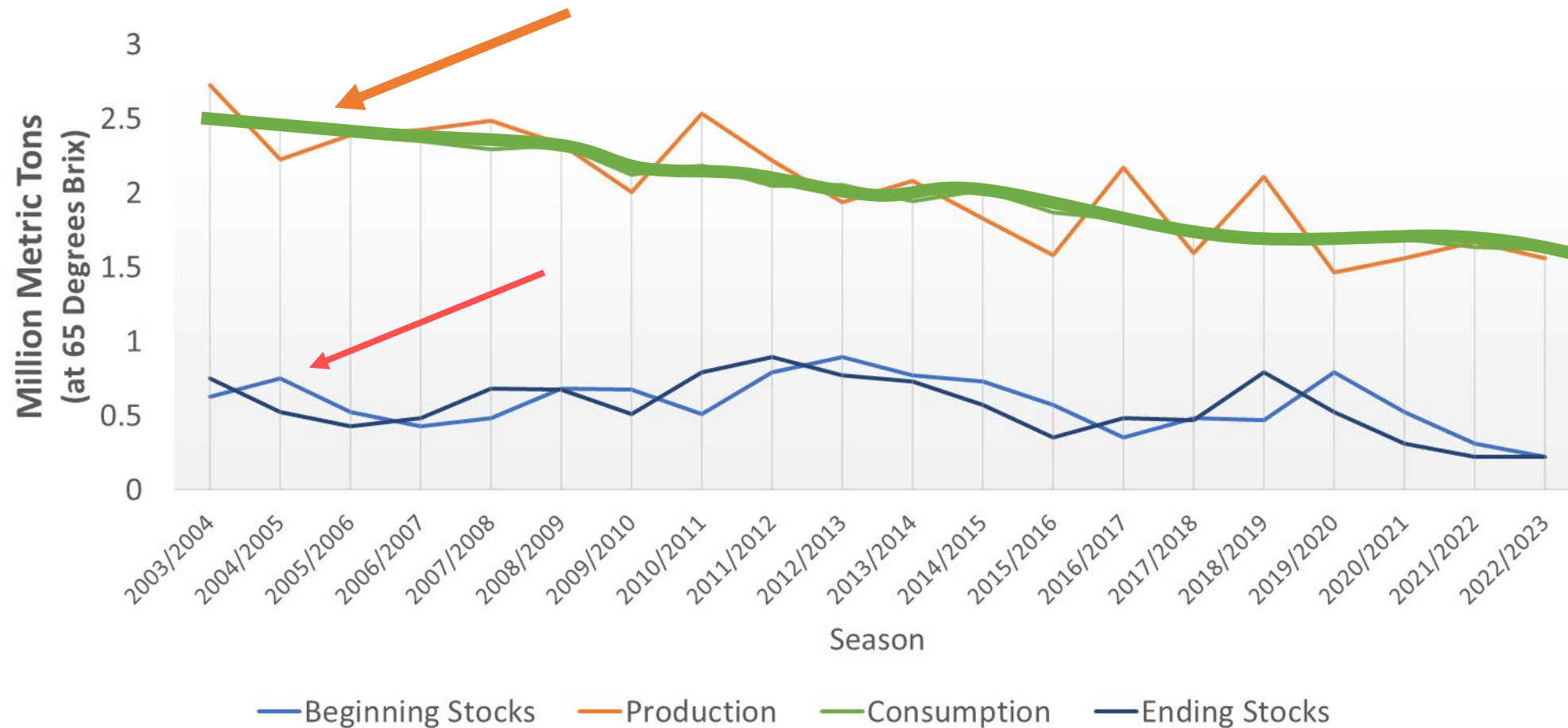


# How do we evaluate consumer demand for orange juice?

First, we must differentiate between OJ Demand and OJ Consumption:

- Demand represents the desire and willingness to purchase goods or services, while consumption refers to the actual act of using those goods or services after they have been acquired.
- Demand is a pre-purchase concept, while consumption is a post-purchase concept.
- Declining production and inventories reduce available product for consumption

# Global Orange Juice Consumption Declines with Supply Shortages



Source: Foreign Agricultural Service/USDA <https://apps.fas.usda.gov/psdonline/app/index.html#/app/home>.

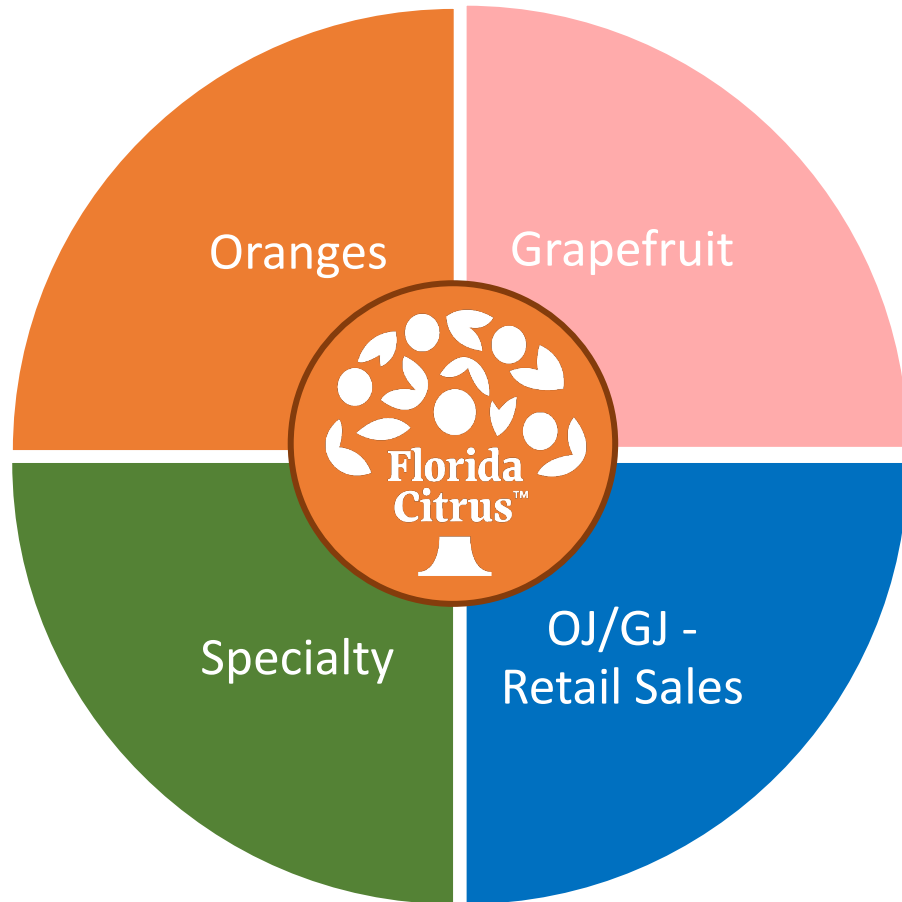
# Florida Citrus Outlook 2022-23 Season (September 2023)

Available on-line at:

<https://www.floridacitrus.org/grower/economic-market-resources/economic-reports/>



# Florida Citrus Outlook Structure

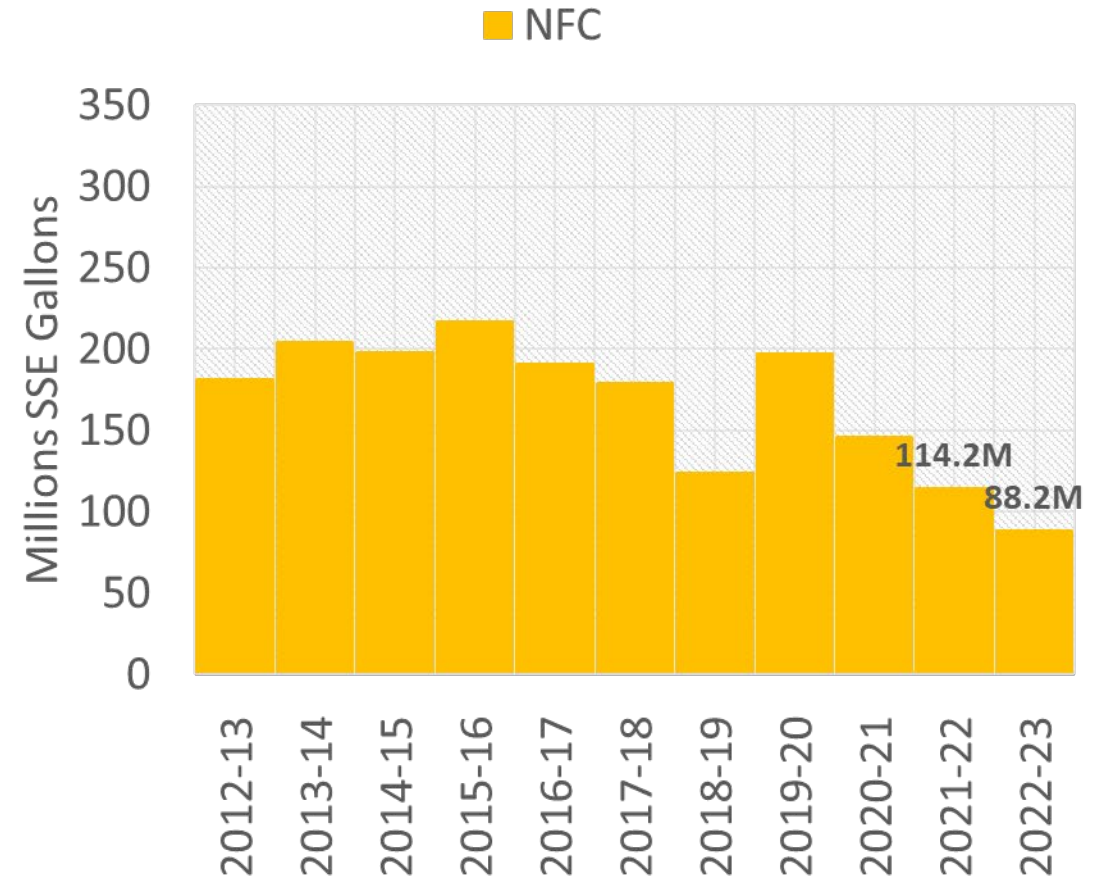
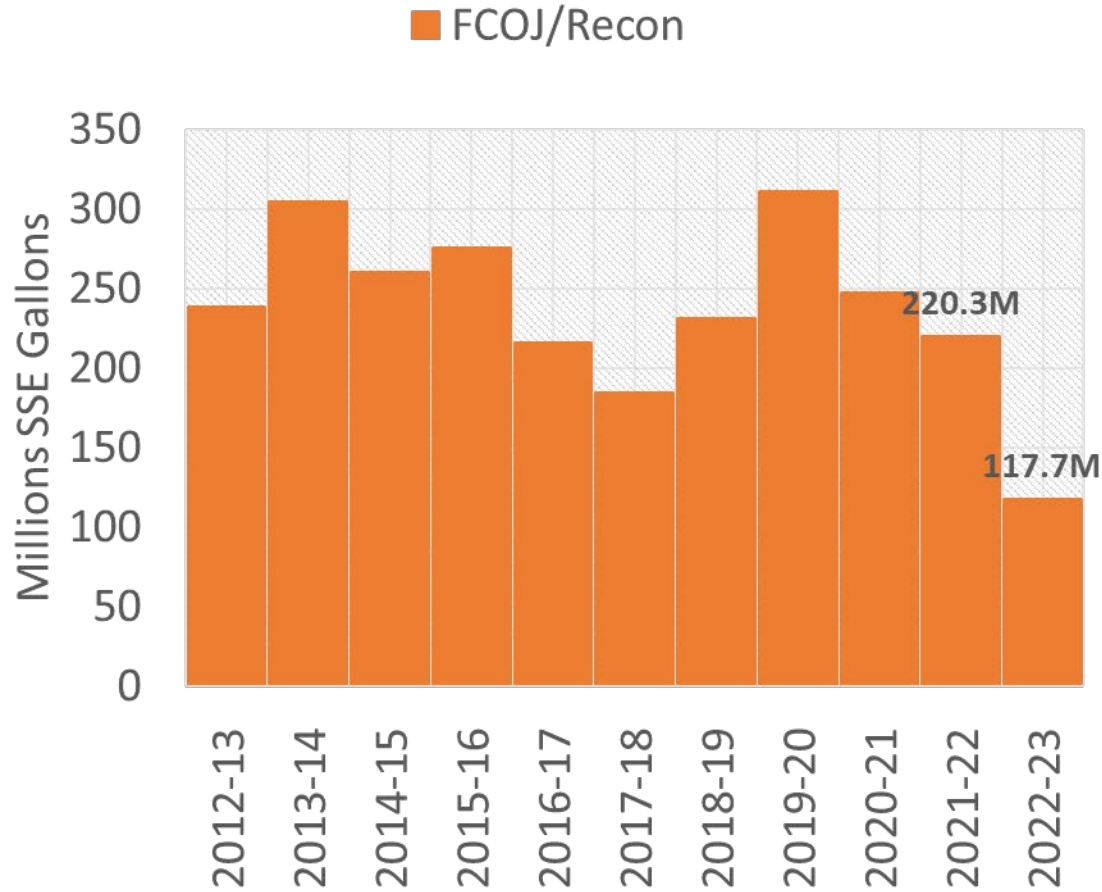


- World OJ Availability
- Florida Utilization and Movement
  - Florida Processed
  - Florida Fresh
- U.S. OJ/GJ Disappearance
- OJ/GJ - Retail Sales
- Certified Fresh Destinations

# Florida Processor OJ Availability

- Beginning Inventory
- Pack from Fruit: production, juice yields
- Imports
- Movement (domestic, exports)
- Ending Inventory
- External Trends\* (weather-related events, etc.)

# OJ Beginning Inventory – Week 1 of Florida Citrus Season



Florida Citrus Season (Oct - Sept)

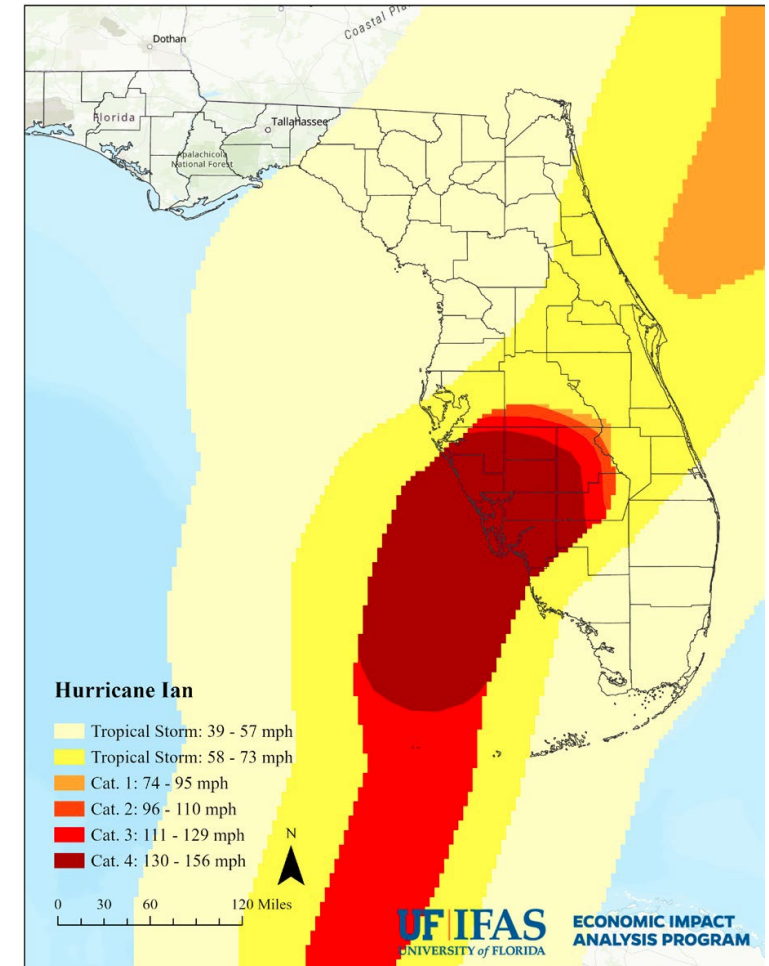
Conversion: 1 single-strength equivalent gallon = 1.029 pounds solids



## Impact of Hurricanes Ian + Nicole 2023 & January 2022 Freeze

- Florida's production recovery further hindered by multiple weather-related events in 2022.
- Primary impacts to citrus were fruit losses and tree damage from freeze, winds and standing water.
- 375,000+ commercial citrus acreage across Florida faced production losses as a result of hurricane or tropical storm force winds.
- Early estimates of tree damage indicate a loss between 8-11% of the industry's 55.75M commercial citrus trees (Source: FCM).

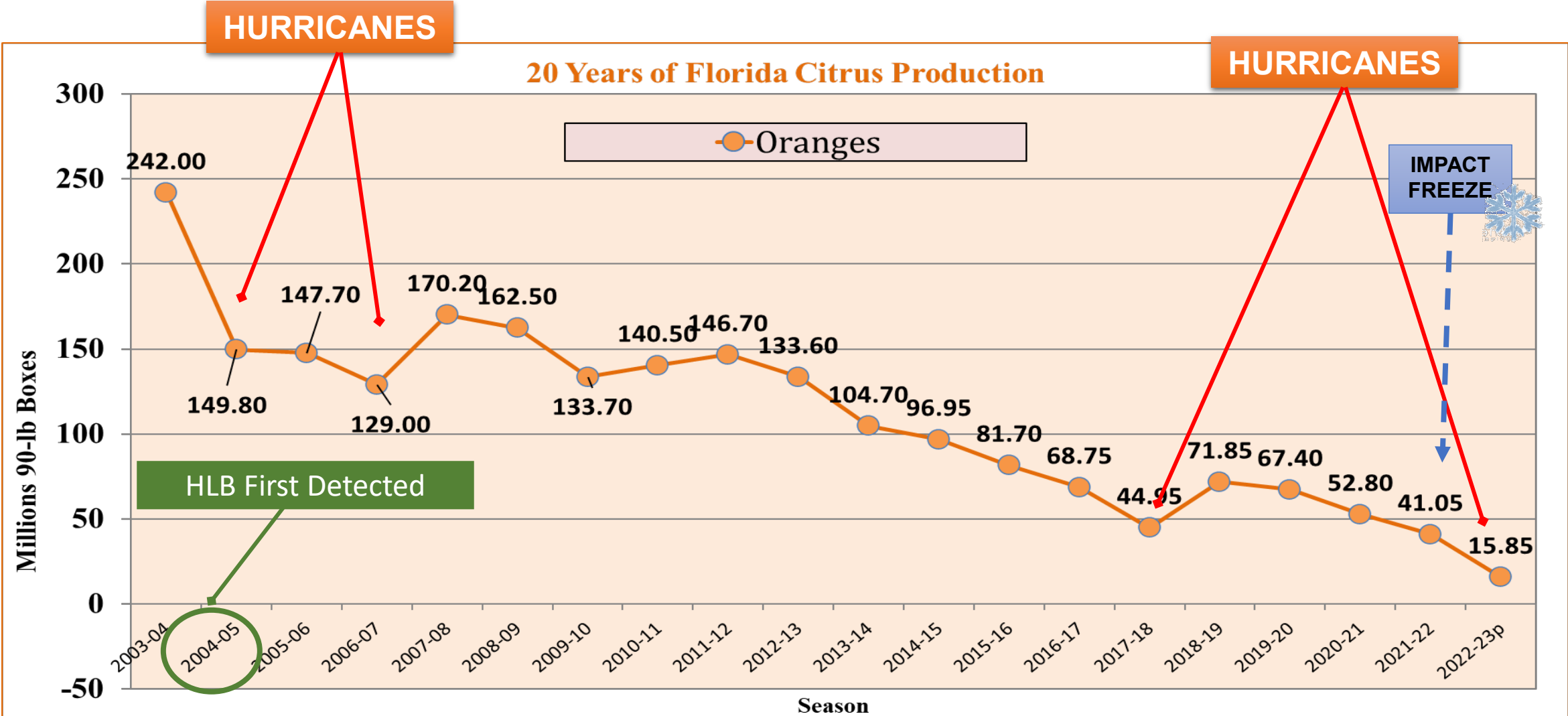
Commercial citrus producers in the State to incur losses estimated to range between **\$518M to \$675.6M.**



\*Source: Christa D. Court, Qiao, X., Saha, B., He, F., McDaid, K. "Preliminary Assessment of Agricultural Losses Resulting from Hurricane Ian," Economic Impact Analysis Program, University of Florida-IFAS, Food & Resource Economics Department, Gainesville, FL, October 17, 2022.

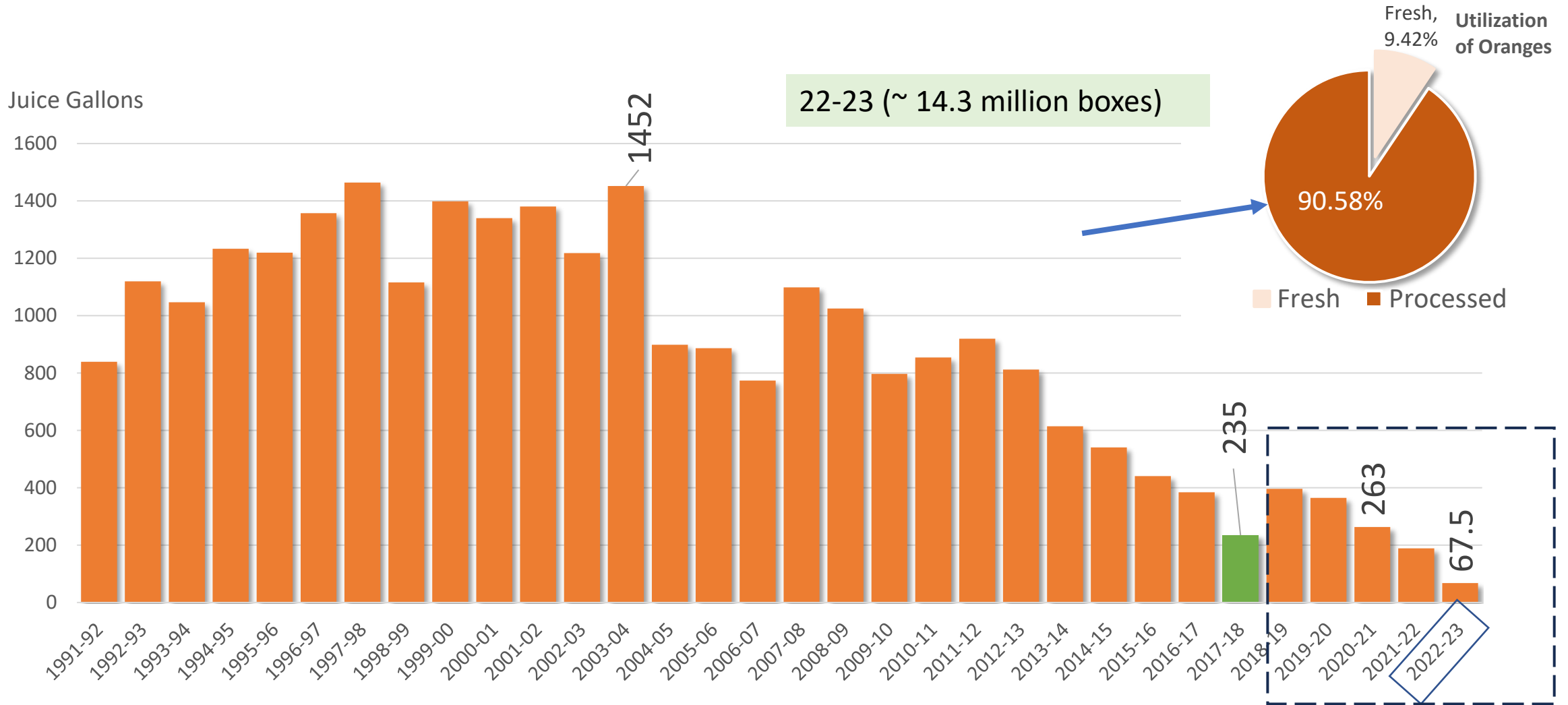
\*\* Total citrus tree replacement estimates based on grower surveys and a \$54.29 tree replacement and care UF/IFAS estimate adjusted to 2022 dollars.

# Decline in Florida Orange Crop due to HLB/Adverse Weather events



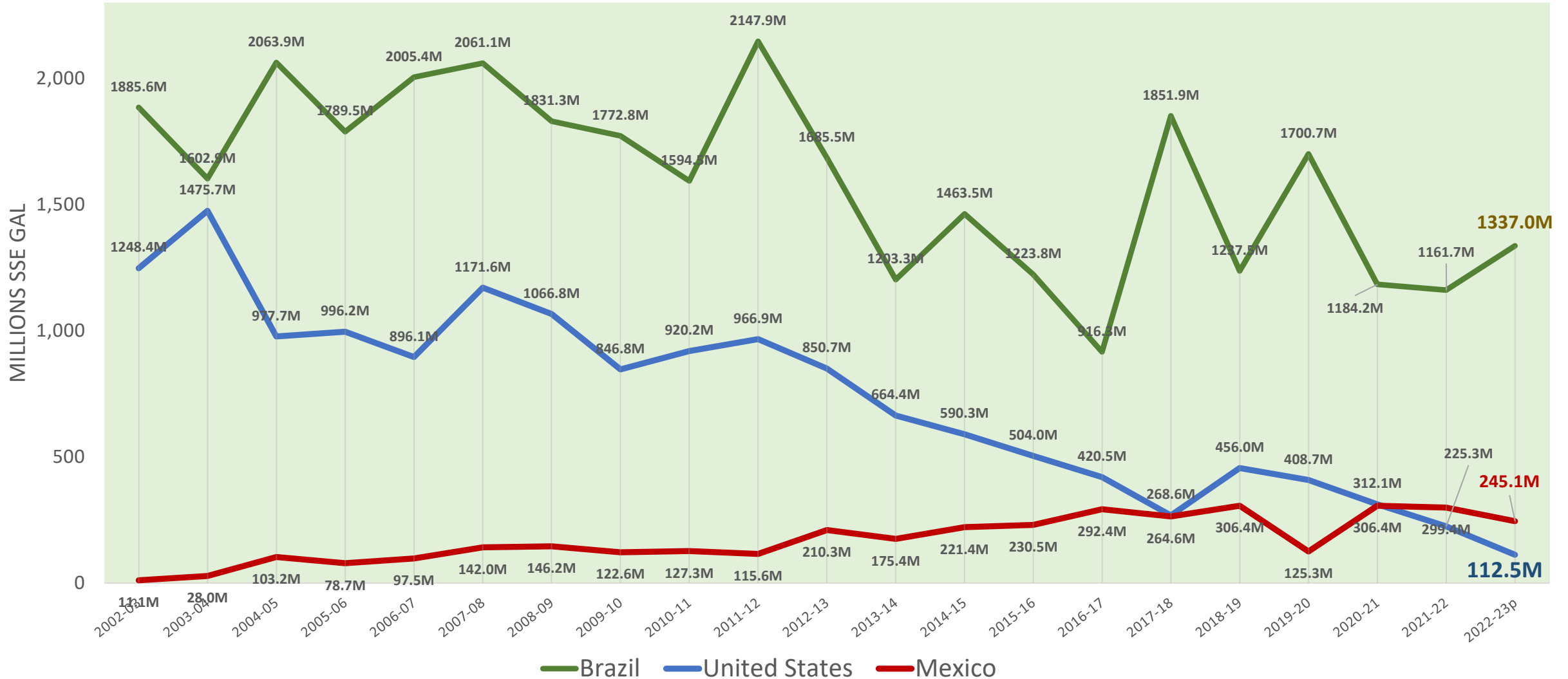
Source: USDA

# Florida-sourced oranges accounted for 63% of U.S. OJ Production in 22-23



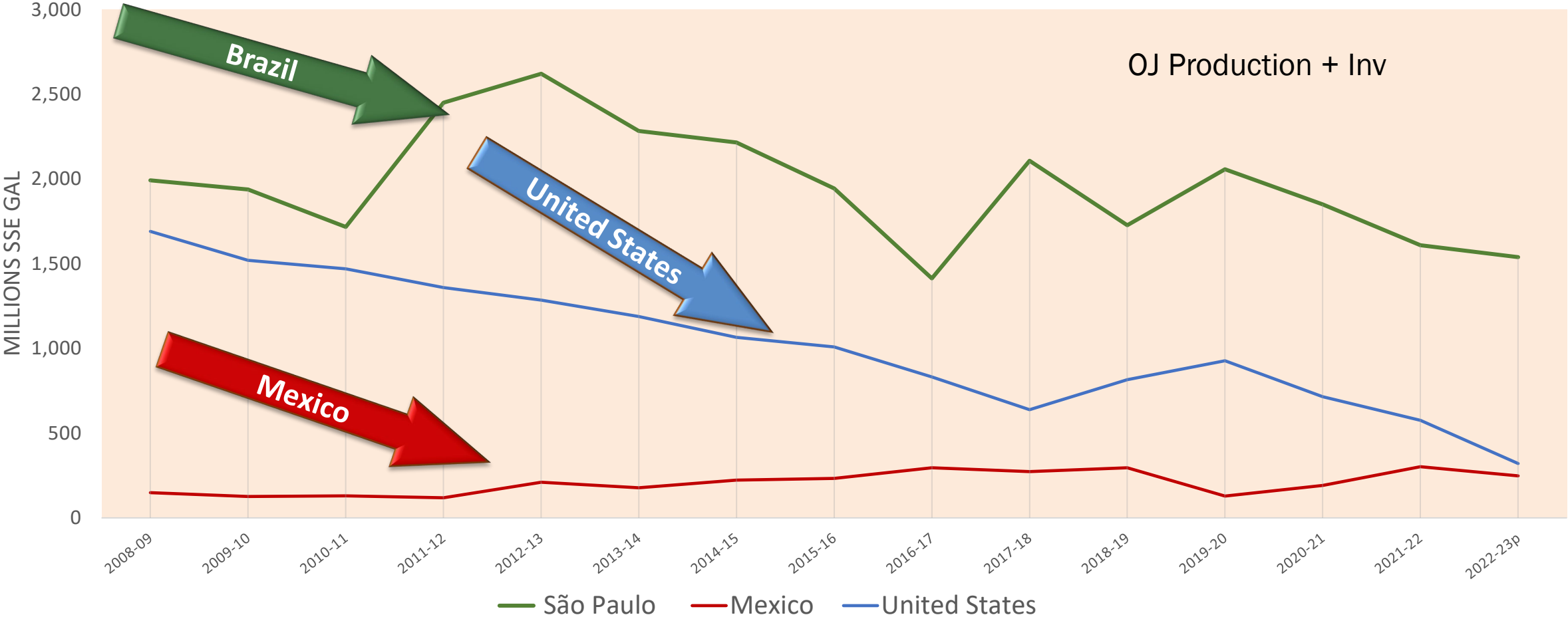
# Leading World OJ suppliers

Estimated Overall OJ **production** up between 4-5% last season



# Leading OJ suppliers to US market

Estimated Overall **availability** down between 15-16% due to reduced inventory



## Brazil Orange Juice Exports

Destination	Season-to-date July - June				Change from 3 season average	
	2019-20	2020-21	2021-22	2022-23		
million SSE Gallons					%	
<b>USMCA<sup>b</sup></b>	<b>Total</b>	<b>246.2</b>	<b>291.5</b>	<b>283.1</b>	<b>444.4</b>	<b>+62.4</b>
	<i>FCOJ</i>	134.8	155.8	121.5	193.9	+41.2
	<i>SSOJ (NFC)</i>	111.4	135.7	161.7	250.5	+83.9
<b>Europe<sup>c</sup></b>	<b>Total</b>	<b>1,074.8</b>	<b>968.3</b>	<b>889.2</b>	<b>716.4</b>	<b>-26.7</b>
	<i>FCOJ</i>	840.0	712.6	669.9	528.3	-28.7
	<i>SSOJ (NFC)</i>	234.8	255.7	219.3	188.1	-20.5
<b>East Asia<sup>d</sup></b>	<b>Total</b>	<b>150.7</b>	<b>144.1</b>	<b>164.3</b>	<b>147.4</b>	<b>-3.7</b>
<b>Others</b>	<b>Total</b>	<b>67.9</b>	<b>83.7</b>	<b>74.4</b>	<b>55.1</b>	<b>-26.9</b>
<b>Total</b>		<b>1,539.6</b>	<b>1,487.6</b>	<b>1,411.1</b>	<b>1,363.2</b>	<b>-7.9</b>

Europe is  
Leading  
Destination  
for Brazil OJ

<sup>a</sup>Assumes exports with codes 2009.11.00 (FCOJ) and 2009.19.00 (Other) are 66° Brix, while exports with code 2009.12.00 (NFC) are 11.8° Brix.

<sup>b</sup>U.S., Canada, and Mexico.

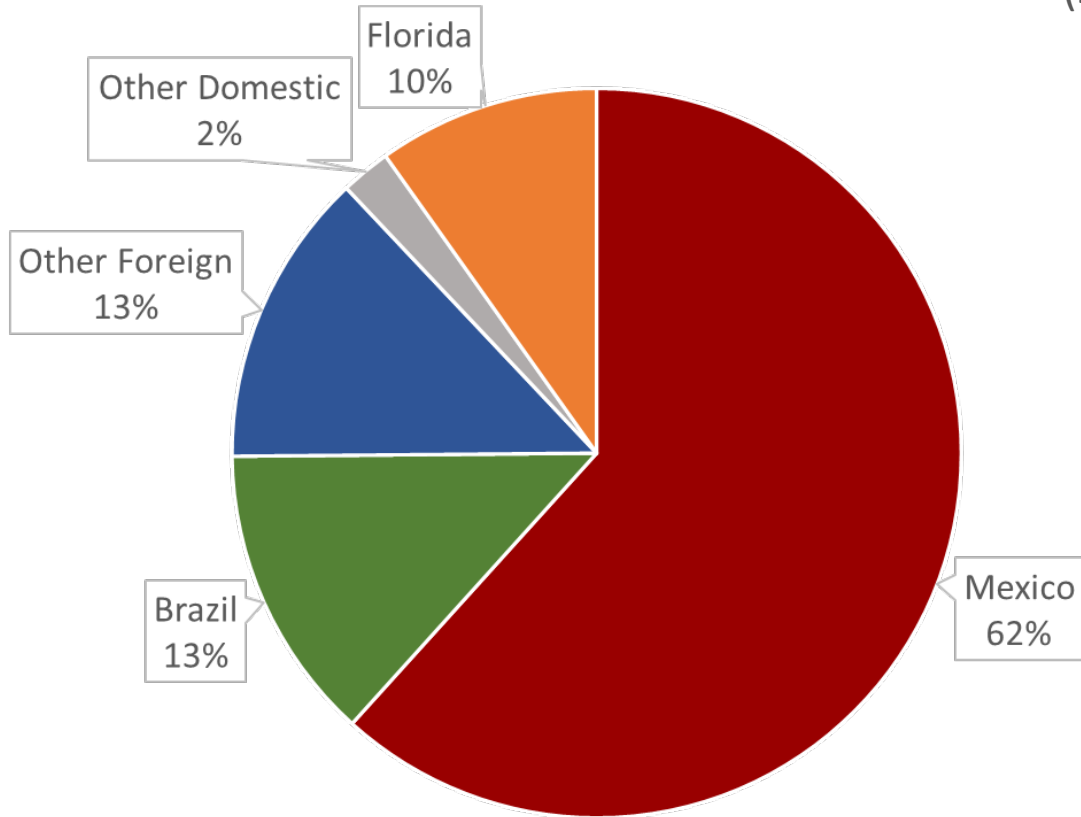
<sup>c</sup>Russia, Ukraine, and Turkey are included in Europe.

<sup>d</sup>China, Japan, Taiwan, Hong Kong, Macau, South Korea, North Korea, Philippines, and Vietnam.

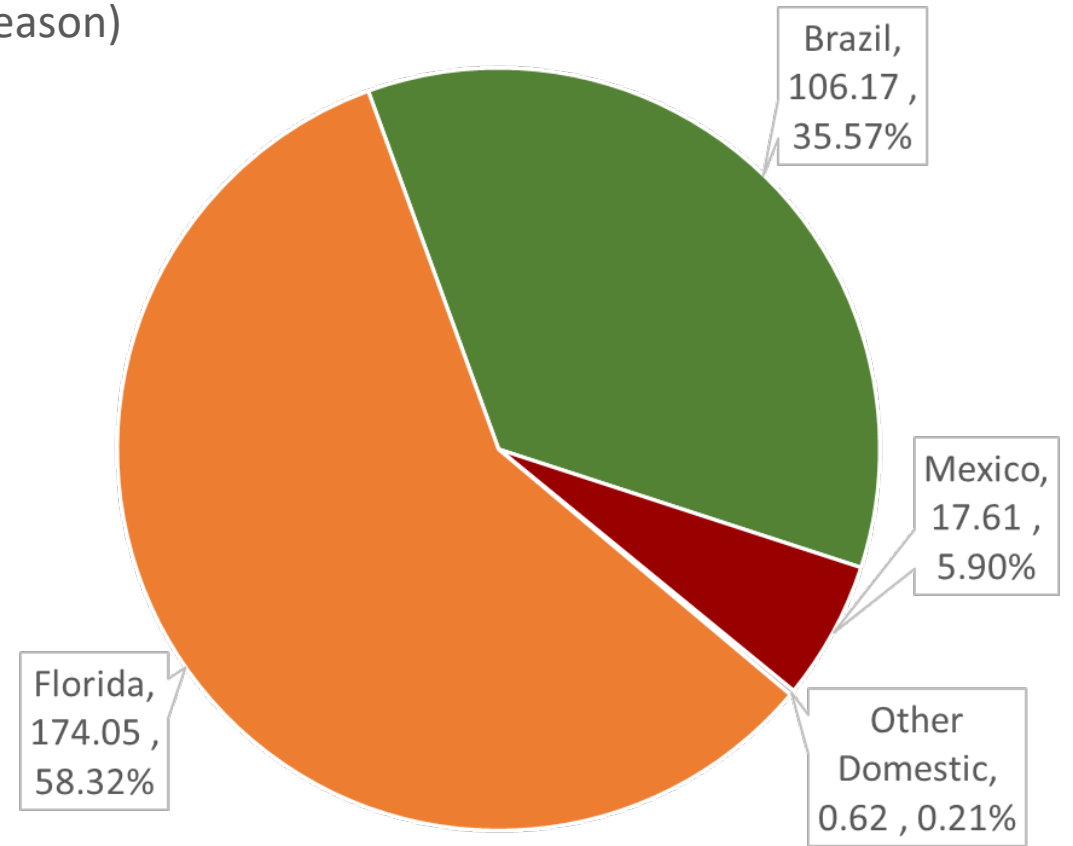
SOURCE: Secretary of External Commerce - Brazil

# Florida Processor OJ Receipts, by Source and Type

(2021-22 Season)



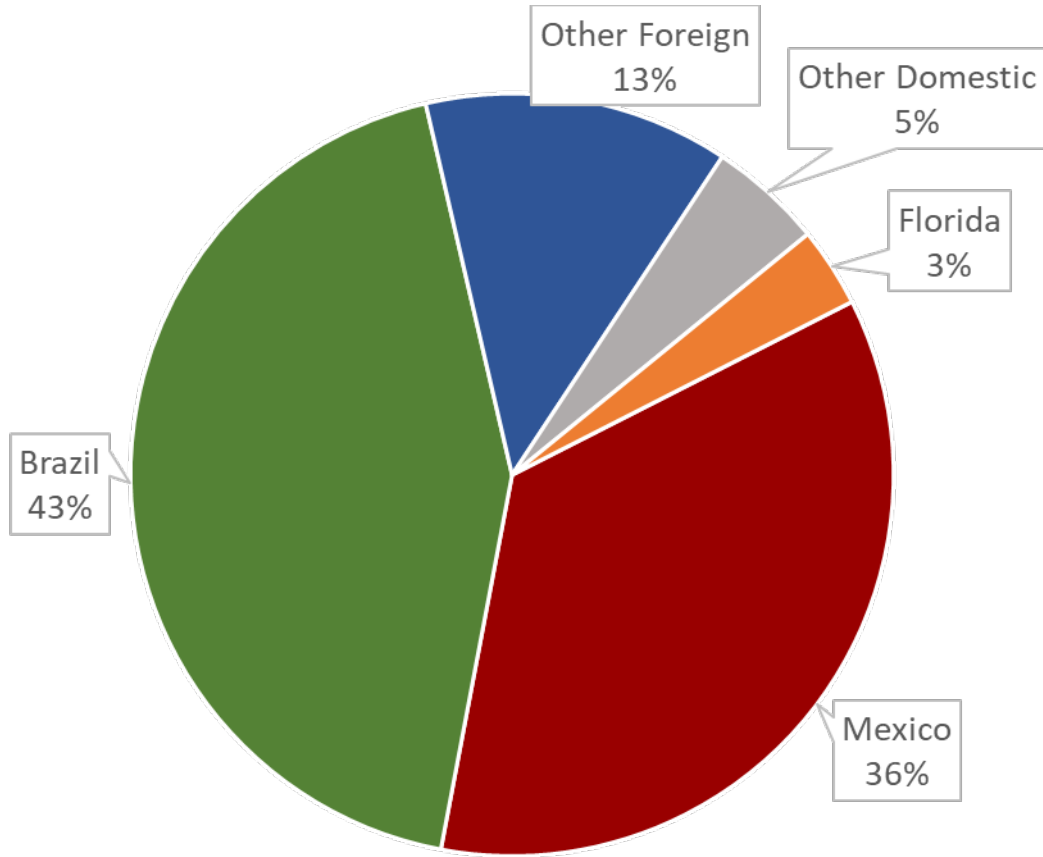
FCOJ FL/Imports/Domestic Receipts (209.95 M pounds solids)



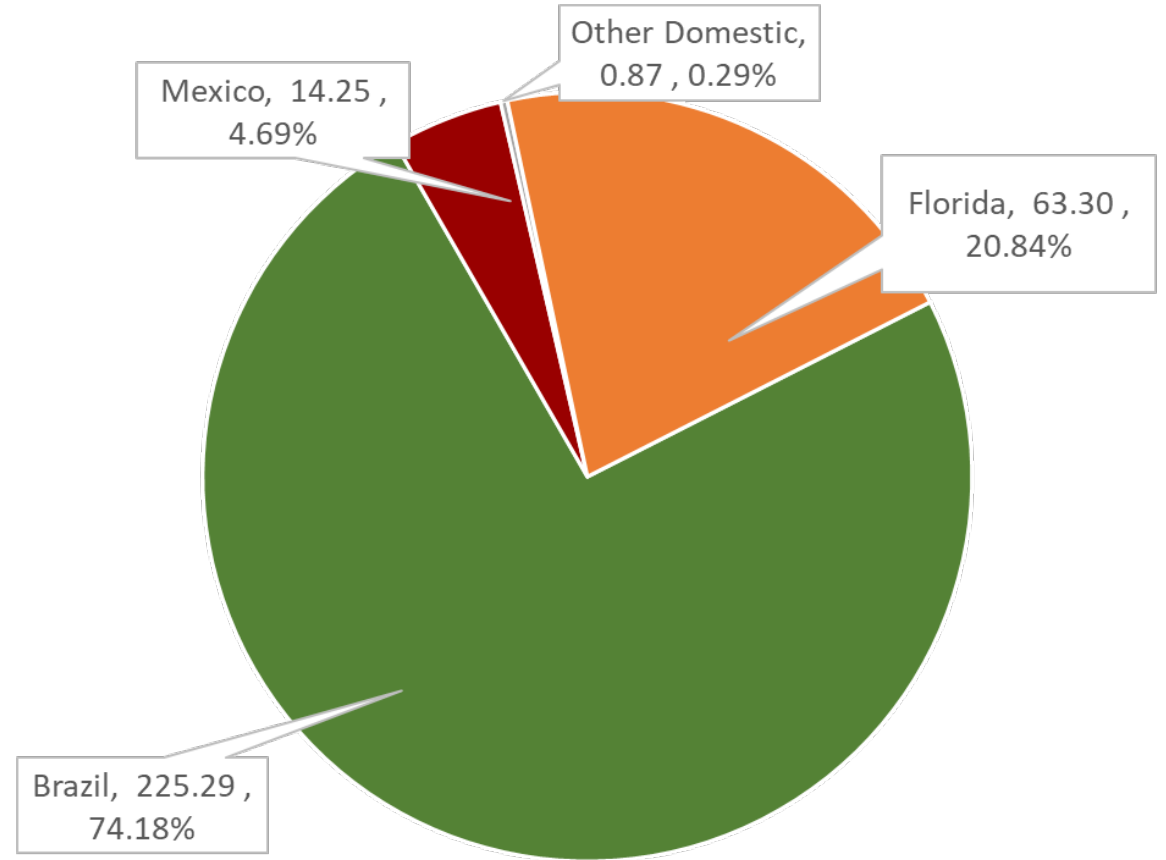
SSOJ FL/Imports/Domestic Receipts (310.77 M pounds solids)

# Florida Processor OJ Receipts, by Source and Type

(2022-23 Season)



FCOJ FL/Imports/Domestic Receipts (181.63 M pounds solids)

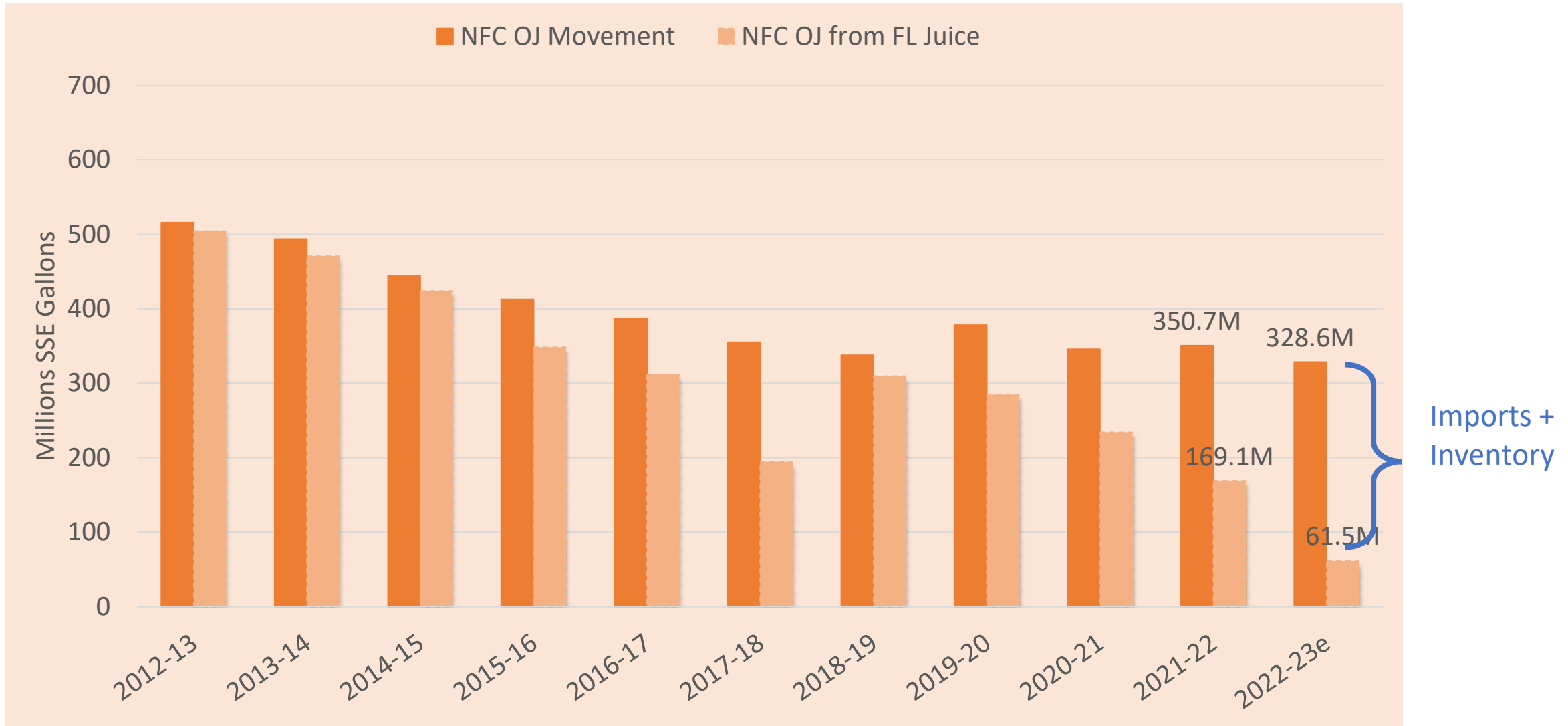


SSOJ FL/Imports/Domestic Receipts (303.79 M pounds solids)

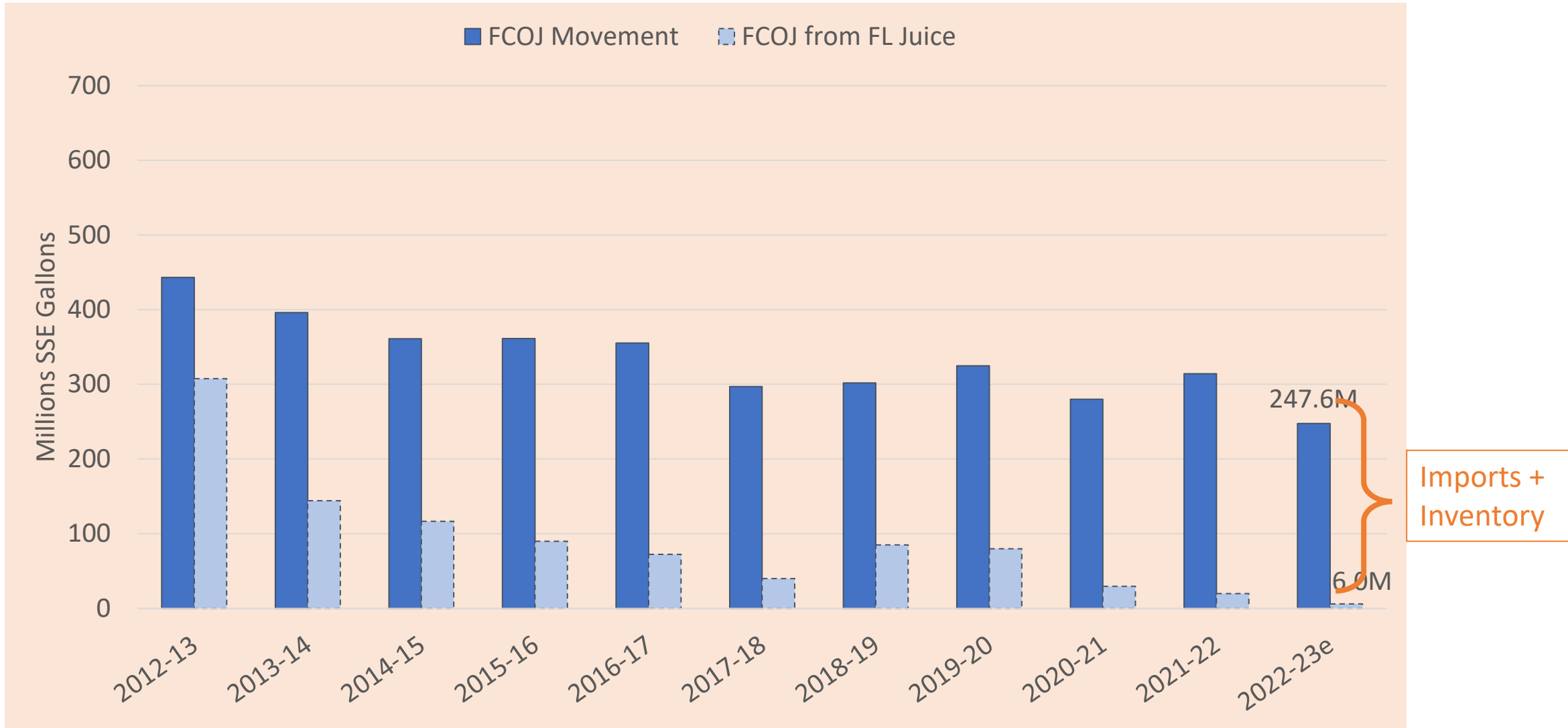
Actual for the Florida Citrus Season (October - September) based on data available through August 2023.



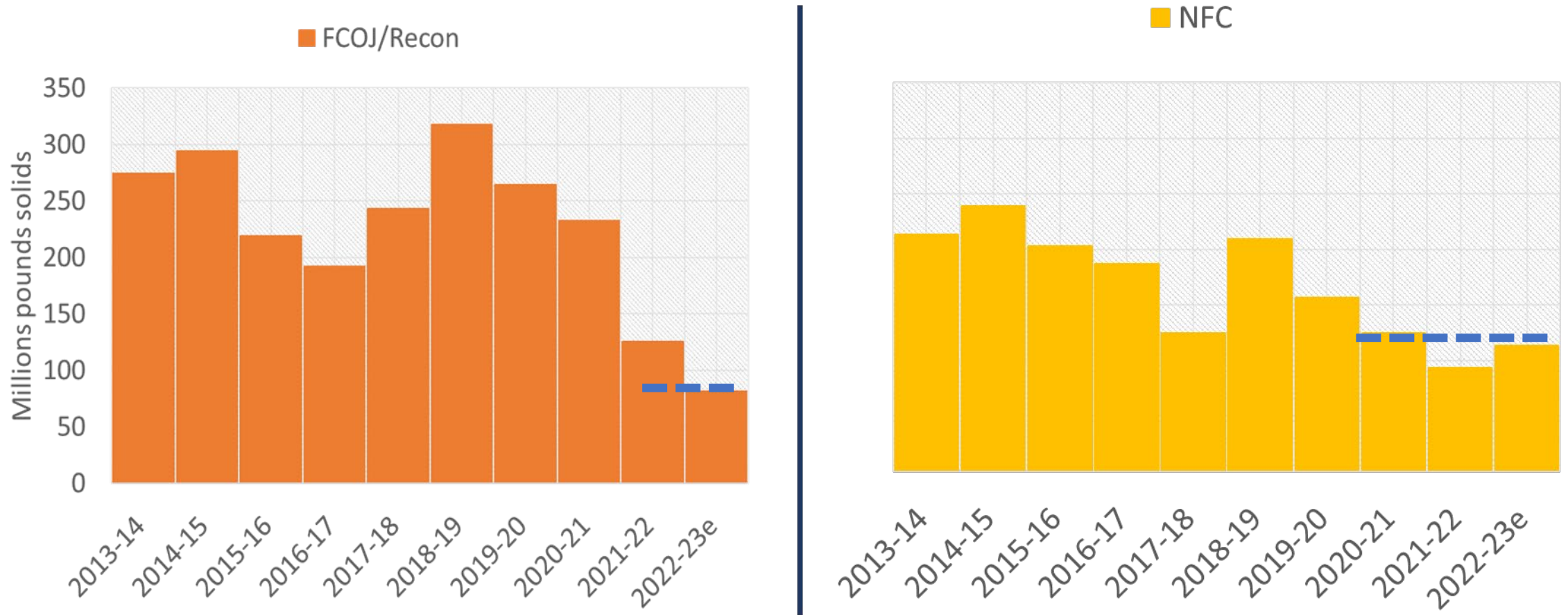
# Florida Processor Movement and Pack, By Season and Type



# Florida Processor Movement and Pack, By Season and Type



# Estimated FL OJ Ending Inventory – September 2023



Florida Citrus Season (October - September)

Preliminary estimates for the Florida Citrus Season (October - September) based on data available through August 2023.

# U.S. OJ Supply & Domestic Use – Proxy for Consumption

Season	Beginning Inventory	Other U.S. Production	U.S. Imports	U.S. Exports	Ending Inventory	Disappearance
	----- million SSE gallons -----					
2018-19	369.6	456.0	481.8	41.9	533.5	731.9
2019-20	533.5	408.7	292.2	47.8	421.8	764.9
2020-21	421.8	315.9	393.8	43.2	371.9	716.5
2021-22	371.9	218.8	440.6	42.2	234.9	754.1
<b>2022-23p</b>	<b>234.9</b>	<b>107.3</b>	<b>573.6</b>	<b>30.4</b>	<b>208.9</b>	<b>676.4</b>

Preliminary estimates for the Florida Citrus Season (October - September) based on data available through August 2023.



### **Further Declines in Inventory Expected:**

- The current reduction in global orange juice availability is anticipated to lead to ongoing declines in inventory levels.
- Increase in global production in 2023-24 not likely to offset reduction in ending inventories.

### **Rising Prices in the Face of Supply Shortage:**

- With the existing supply shortage, prices are experiencing an upward trend, exacerbated by the backdrop of already high inflation rates.

### **Reduced availability and rising prices of orange juice may contribute to changes in consumer spending habits, impacting the category.**

- OJ scarcity and high prices may lead to consumers exploring alternative beverages, potentially affecting long-term market preferences.



### **Sustaining Demand for Orange Juice:**

- The demand for orange juice exists, albeit somewhat fragile.

### **Forward-Thinking Approach:**

- Recognizing the importance of this \$6.9B industry, Florida is making strategic investments in replanting efforts today to ensure a more resilient and productive future.
- Collaborative industry efforts to identify solutions (CRAFT, tree therapies, expedited propagation of tolerant trees, ongoing research efforts).

### **Nurturing Demand for Long-Term Viability:**

- It's imperative to foster and support the demand for orange juice through strategic marketing.



# Understanding the Orange Juice Supply and Consumer Demand

*HOW DO OJ MARKETING PROGRAM AWARENESS IMPACT WILLINGNESS TO PAY FOR ORANGE JUICE?*

September 21, 2023

*LISA HOUSE, Professor and Chair*

*Co-author: Dr. Sungeun Yoon, Assistant Research Scientist*

*FOOD AND RESOURCE ECONOMICS DEPARTMENT*



# OVERVIEW OF FLORIDA AGRICULTURAL MARKET RESEARCH CENTER “OJ TRACKER”

- Monthly survey of adult, primary grocery shoppers in the U.S. (approximately 500/month)
- Began in 2016, continues monthly (**July 2016 – July 2023 included in presentation**)
  - Dataset has 43,686 observations across 7 years and grows monthly
- **Participants answer questions about:**
  - General food purchase habits
  - Specific questions about orange juice purchases and preferences
  - Sociodemographic characteristics



# ORANGE JUICE MARKETING PROGRAMS

- **Florida Department of Citrus (Generic) Marketing Programs**
  - Increase consumer demand for Florida orange juice by increasing awareness of the health and nutrition benefits of Florida Orange Juice
  - The Amazing 5 – Awareness to Millennial Moms (2015-2019)
  - The Original Wellness Drink - Driving preference and sales of Florida OJ to Lapsed buyers (Since 2020)
- **Marketing Channels**
  - e-Commerce: Instacart, Walmart, Kroger, Target, Amazon, etc.
  - Social media: Facebook/Instagram, Pinterest, Google Search, YouTube, etc.
- **Brand Marketing Programs**

# GENERIC ORANGE JUICE MARKETING

Wellness made *easy* and *delicious.*

Florida Orange Juice The Original Wellness Drink.™

**Kroger** Discover More >

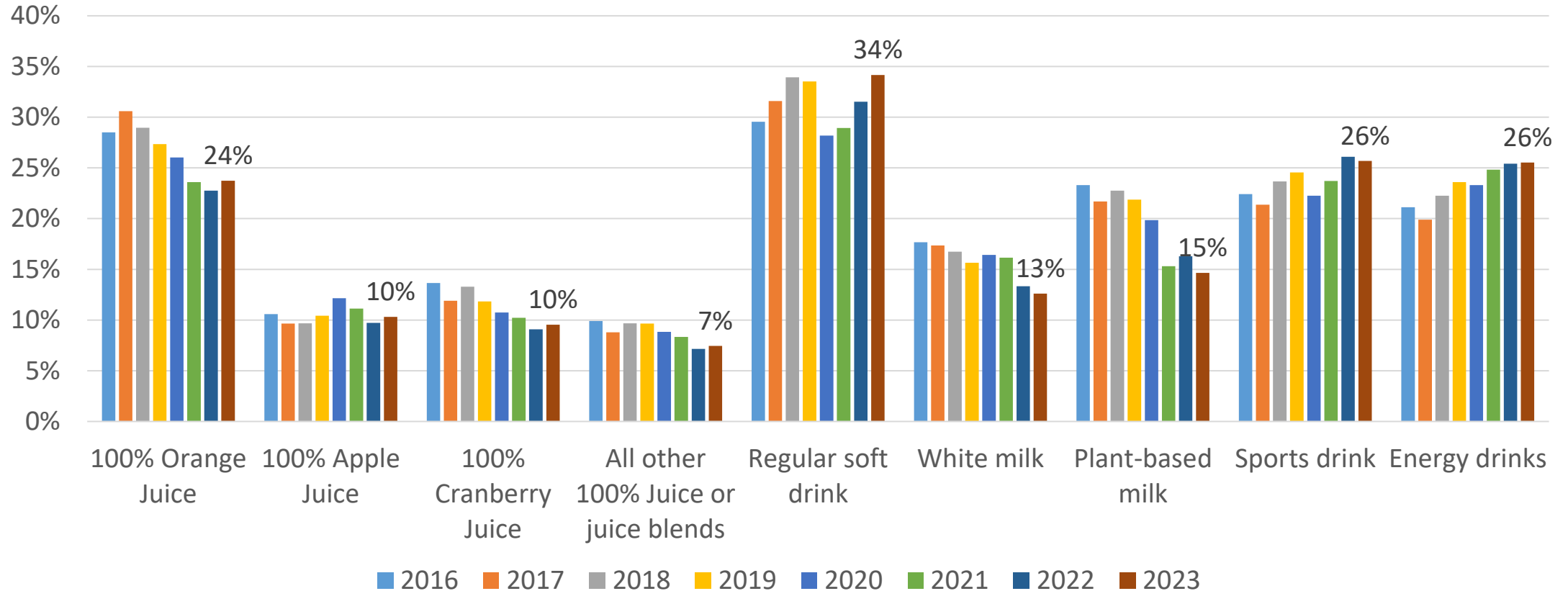
Wellness made easy.  
Florida Orange Juice.

Florida Orange Juice The Original Wellness Drink.™

**SHOP NOW**

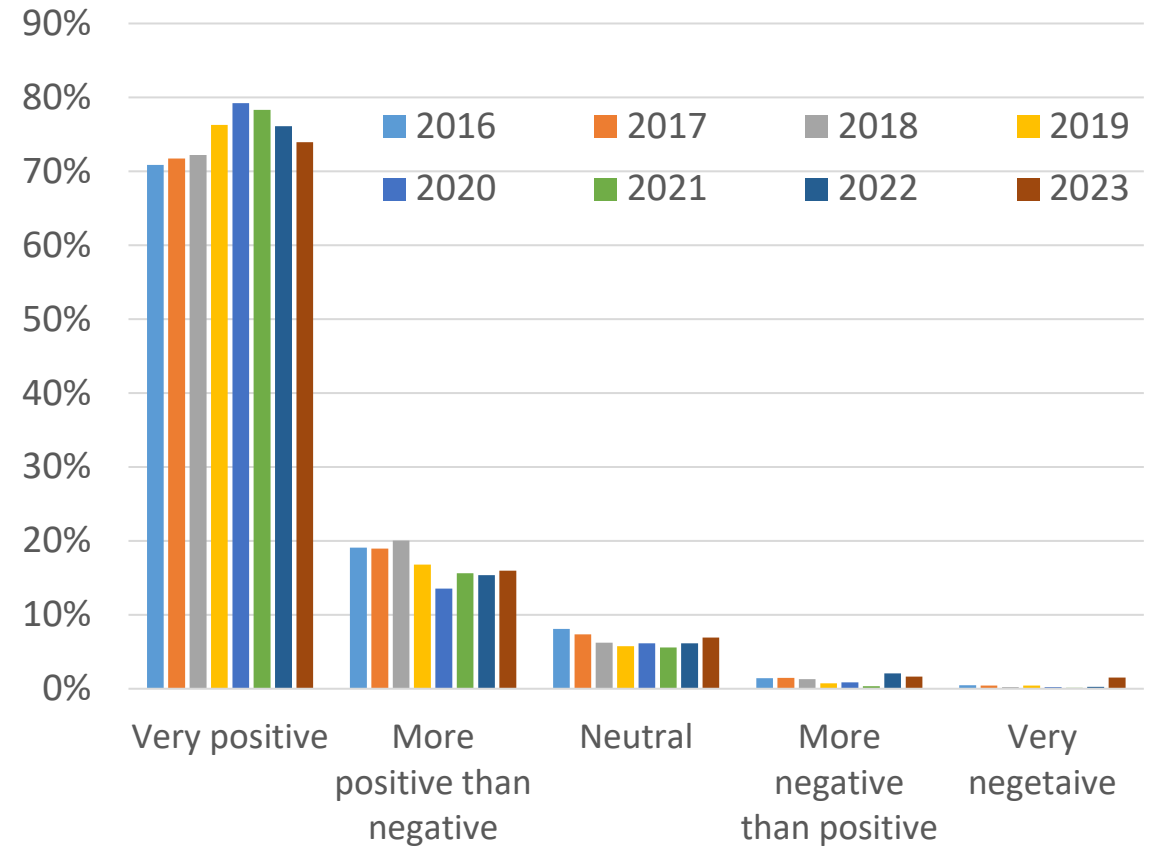
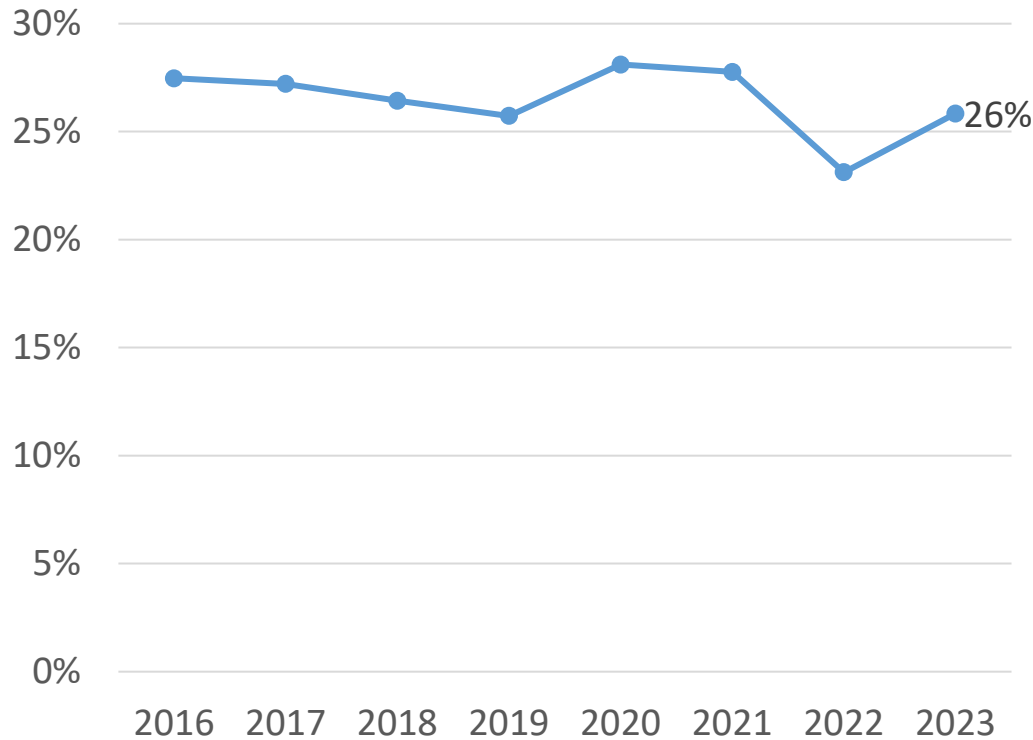


# OJ PROMOTION AWARENESS



During the past 30 days, do you recall hearing or seeing any mention of promotion or advertisement for each of the types of beverages below from any sources. (Select all that apply)

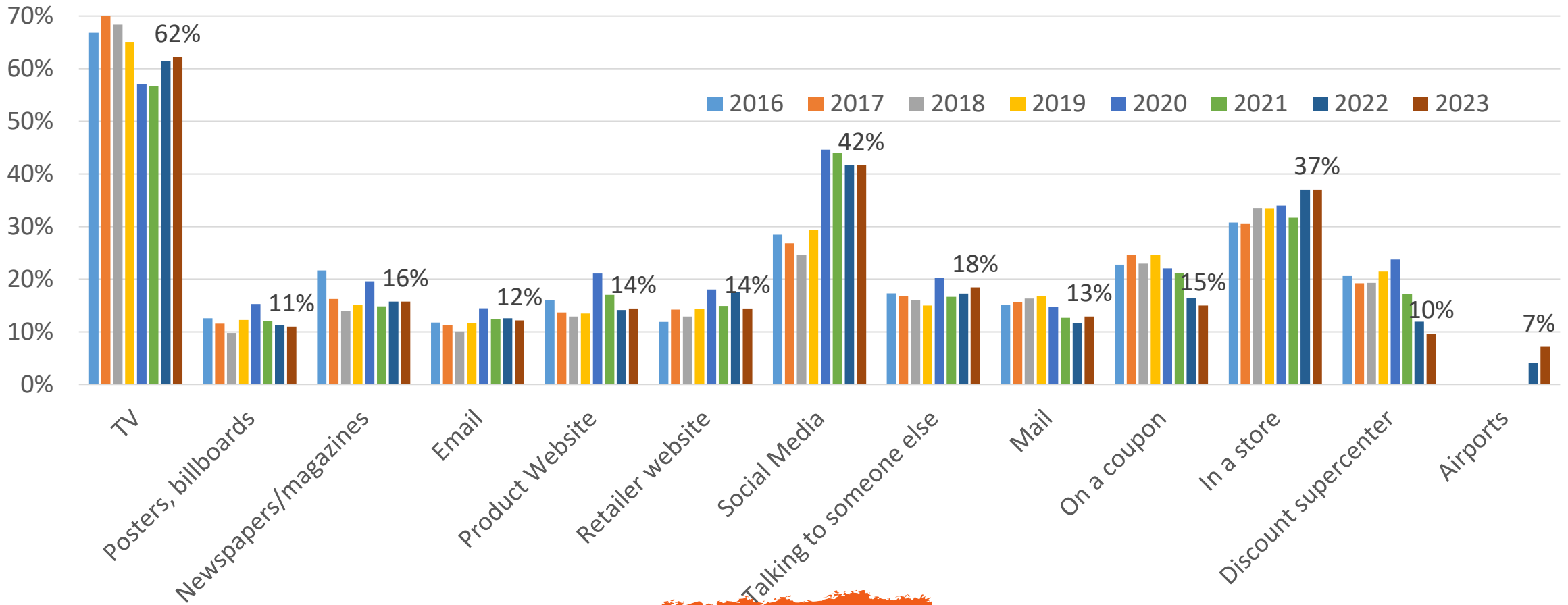
# OJ MEDIA AWARENESS & TEMPERATURE



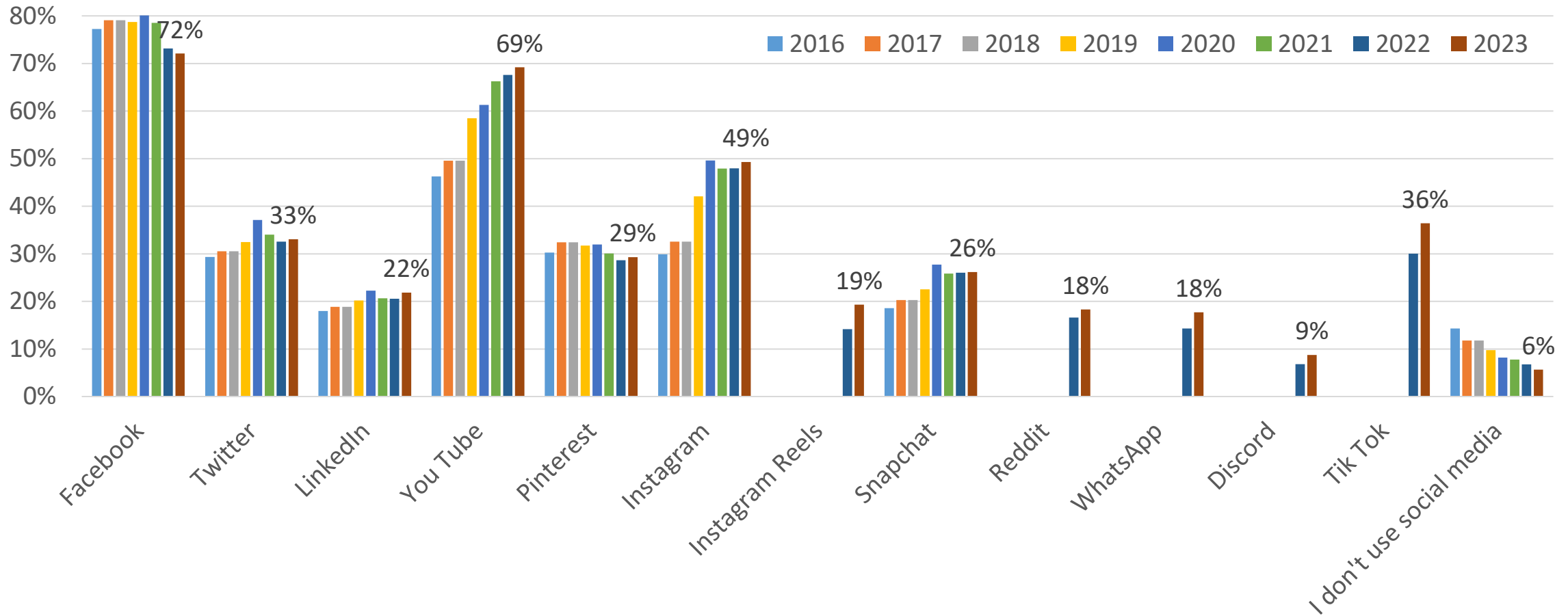
Have you seen, heard, or read anything about Orange Juice anywhere in the past 30 days?

Would you say the things you have seen, heard, or read about Orange Juice in the past 30 days have been:

# PLACES THAT CONSUMERS HAVE SEEN, HEARD, OR READ ABOUT ORANGE JUICE



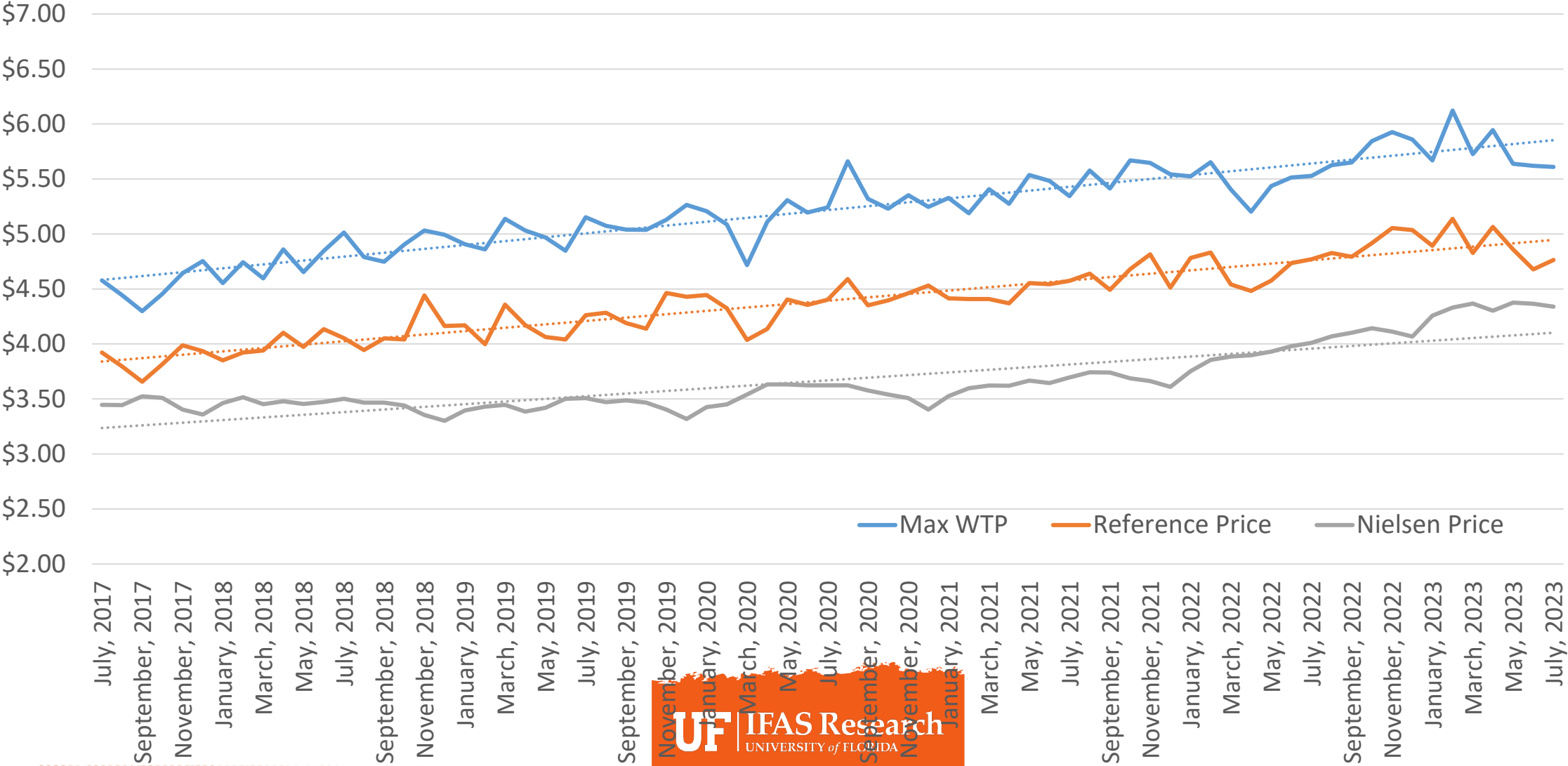
# SOCIAL MEDIA USE OVER TIME



# CONSUMER PRICE PERCEPTION

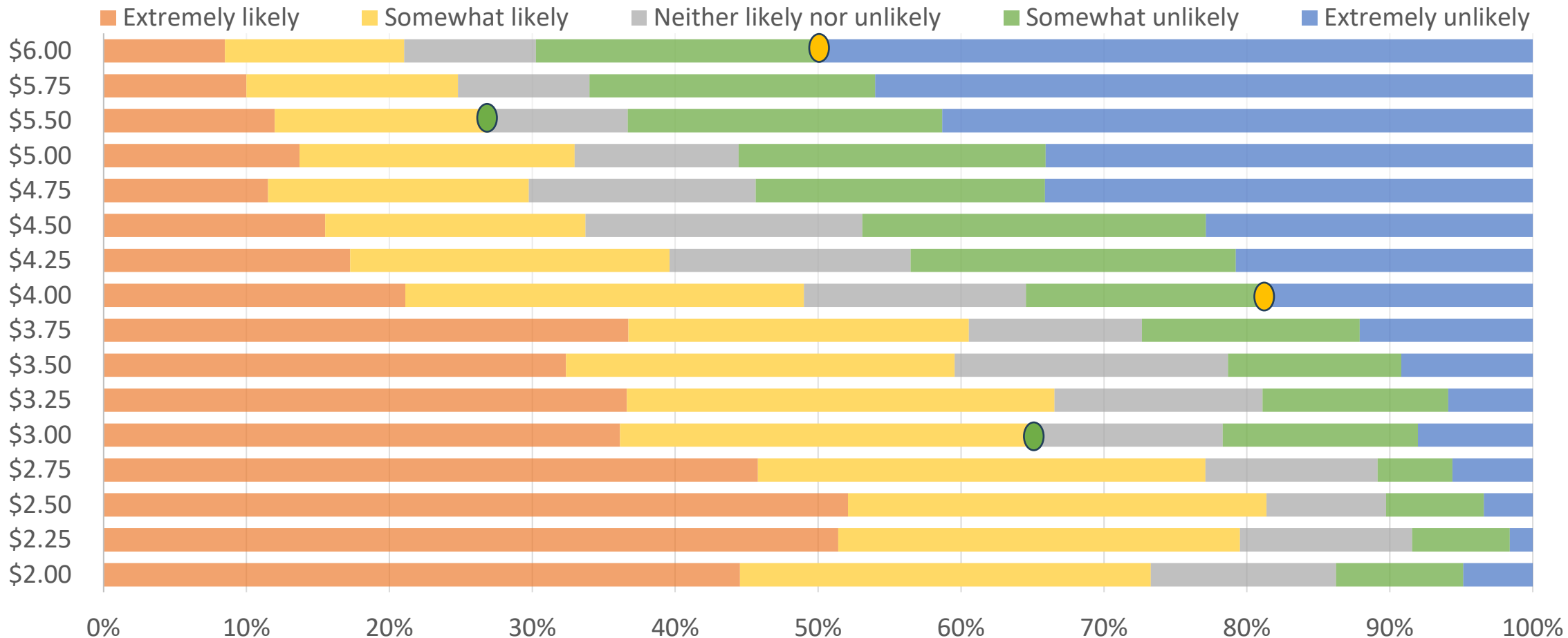
- **Maximum Willingness to Pay (WTP)**
  - At what price would you think this 52oz container of 100% Orange Juice is starting to get expensive, but you still might consider buying it?
- **Reference Price**
  - Indicate how much you usually pay to purchase a 52 oz. container of 100% Orange Juice, not made from concentrate in the refrigerated section?
- **Likelihood to Purchase at a Randomly Given Price from \$2.00 to \$6.00**
  - At the price \$, how likely would you be to purchase this 52 oz container of 100% Orange Juice?

# MAXIMUM WTP AND REFERENCE PRICE

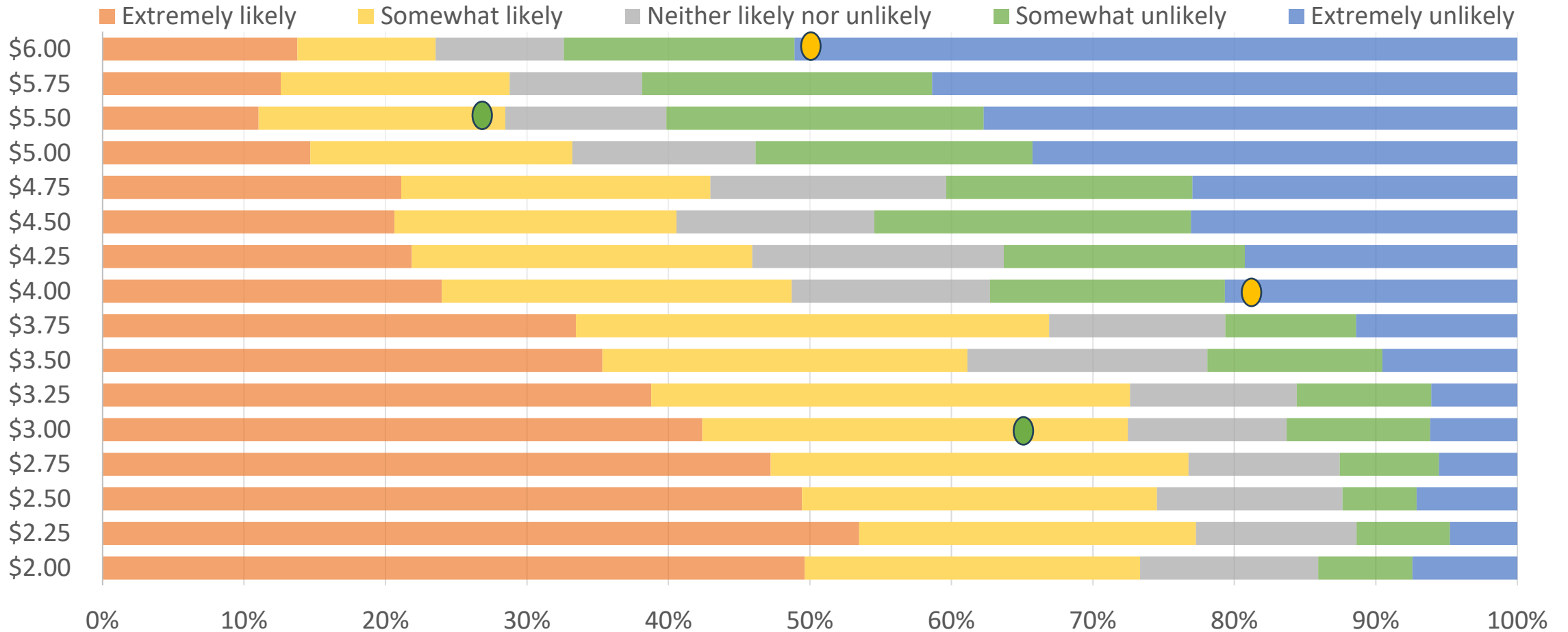




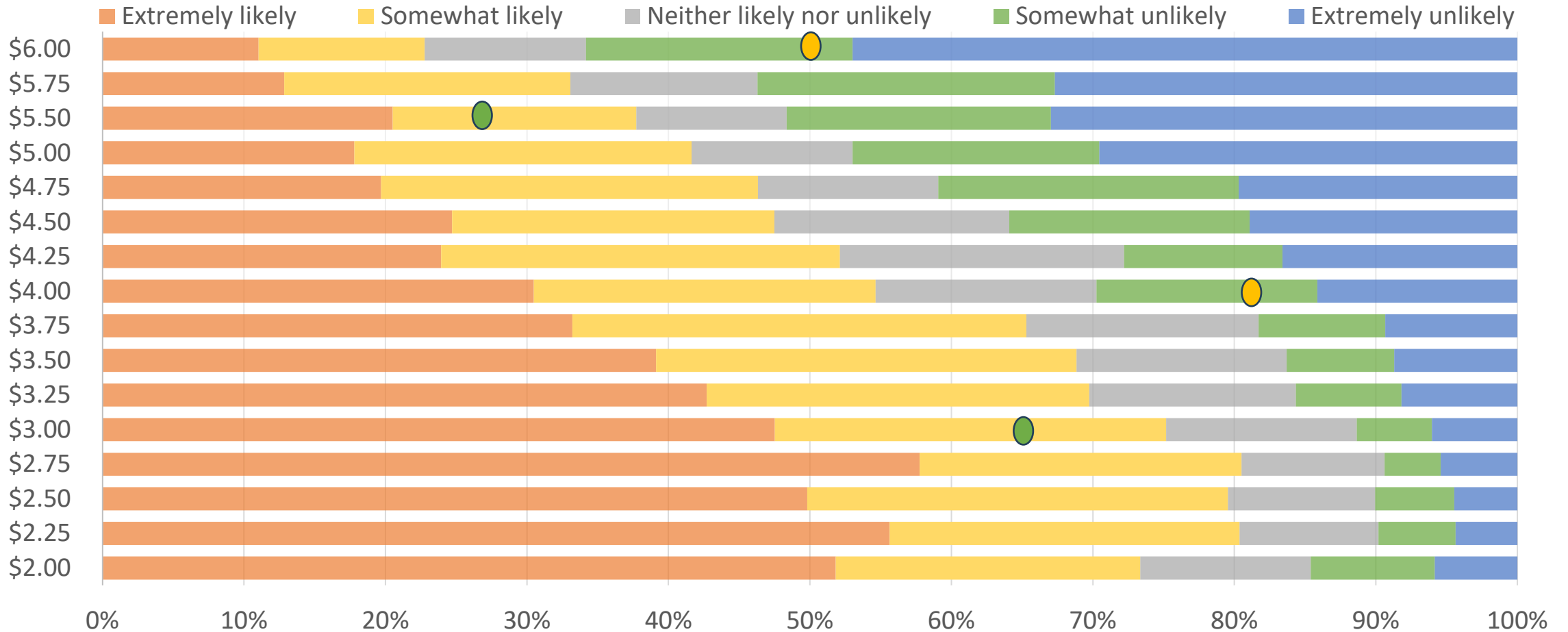
# LIKELIHOOD TO ACCEPT GIVEN PRICES, 2017



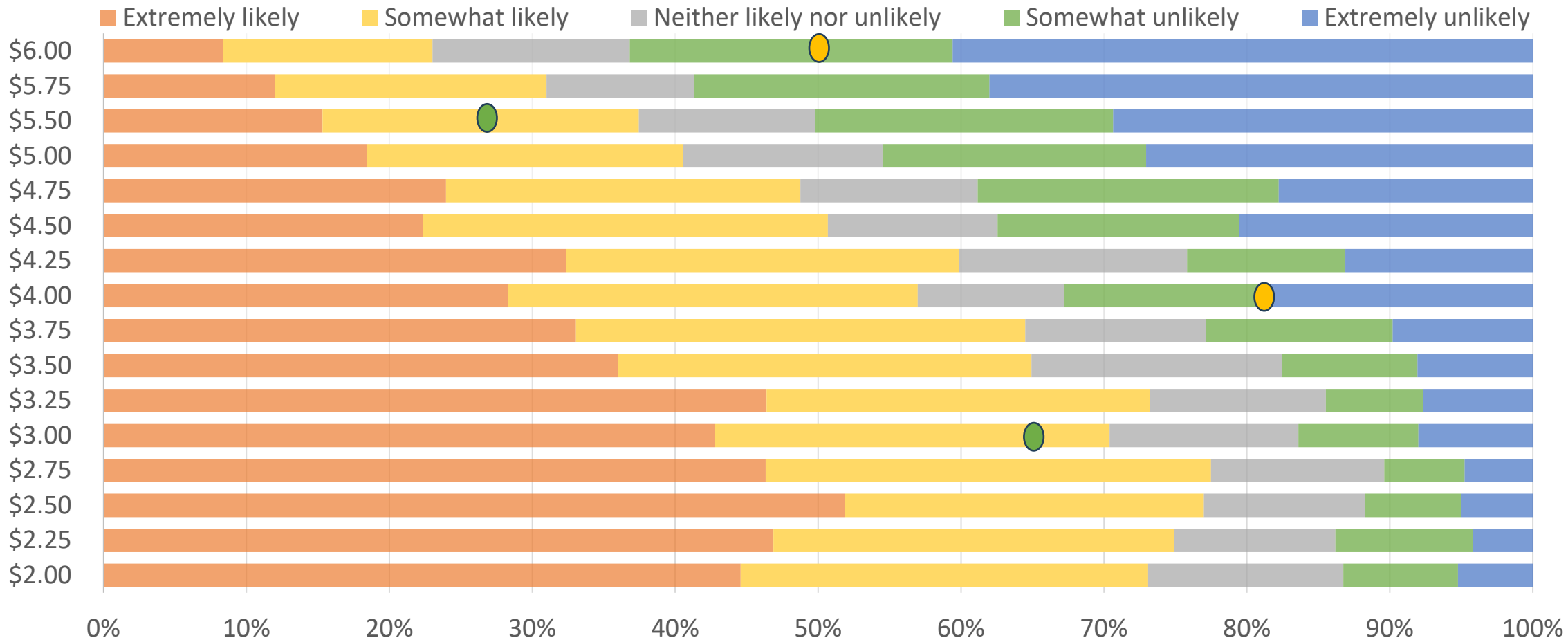
# LIKELIHOOD TO ACCEPT GIVEN PRICES, 2018



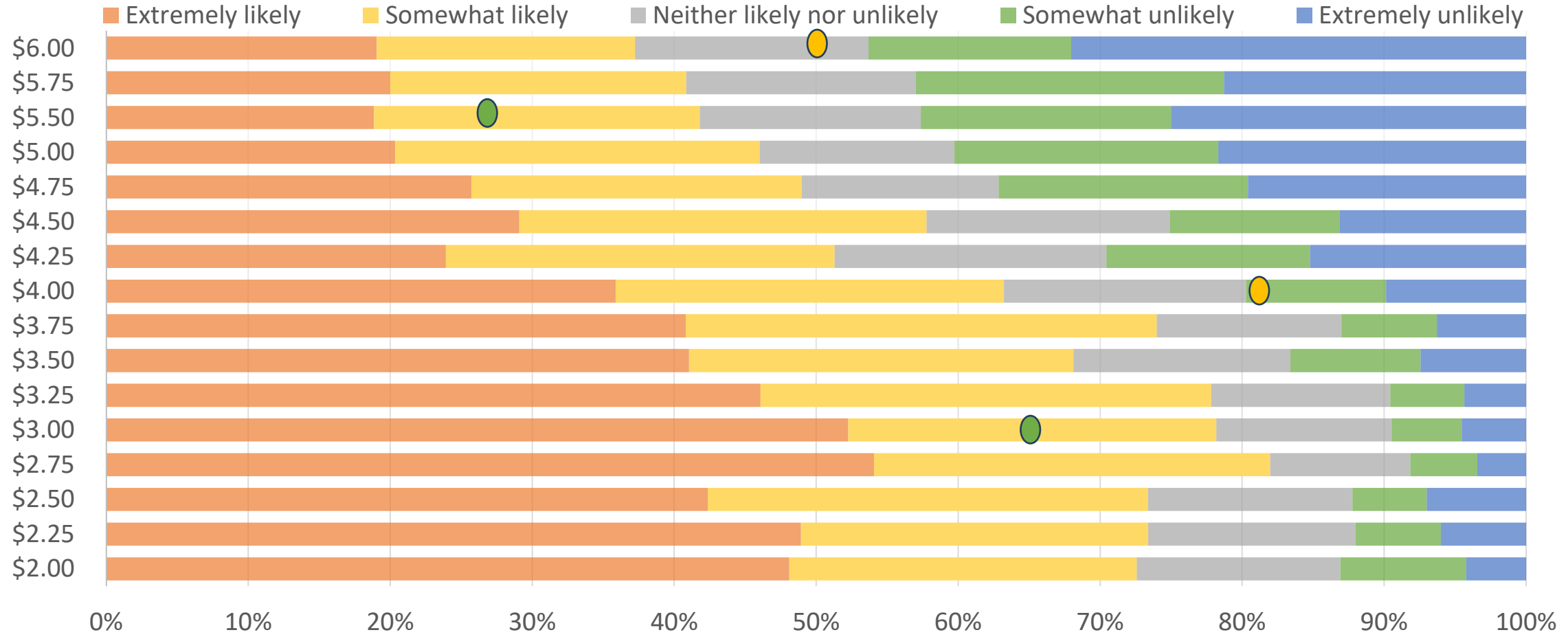
# LIKELIHOOD TO ACCEPT GIVEN PRICES, 2019



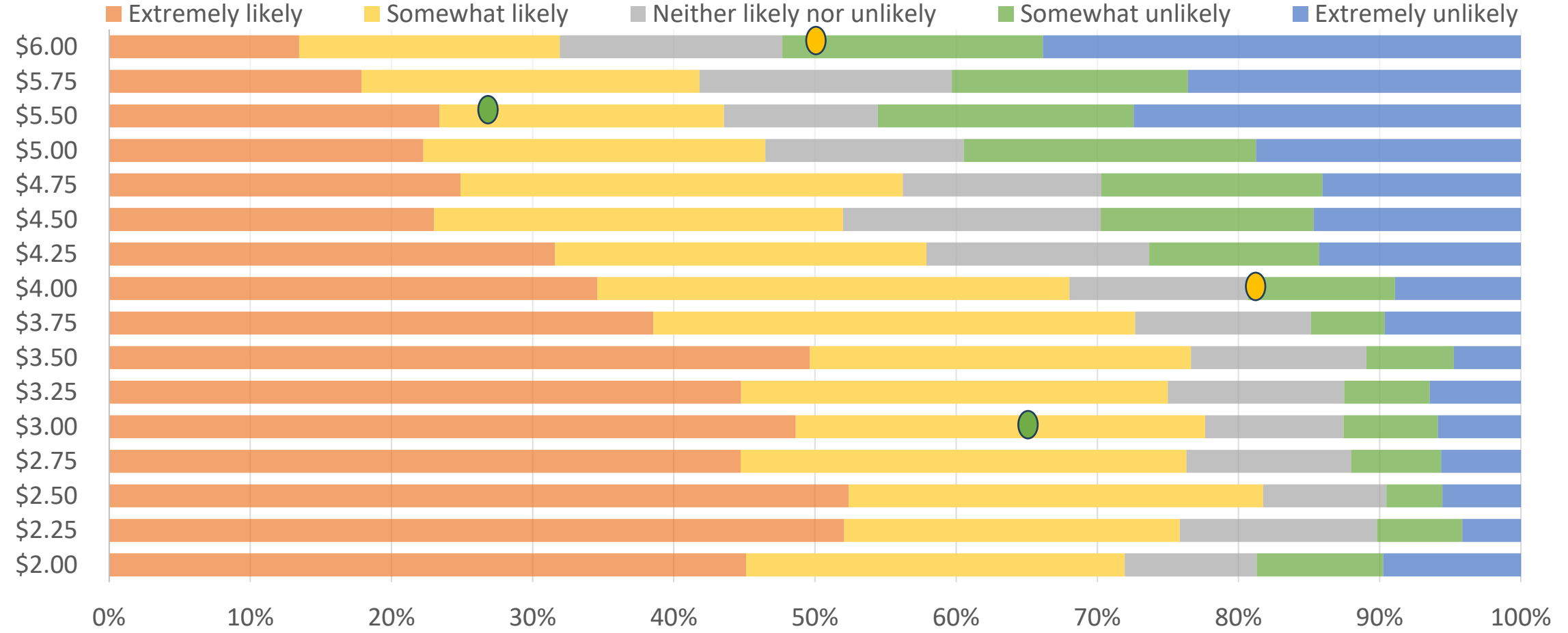
# LIKELIHOOD TO ACCEPT GIVEN PRICES, 2020



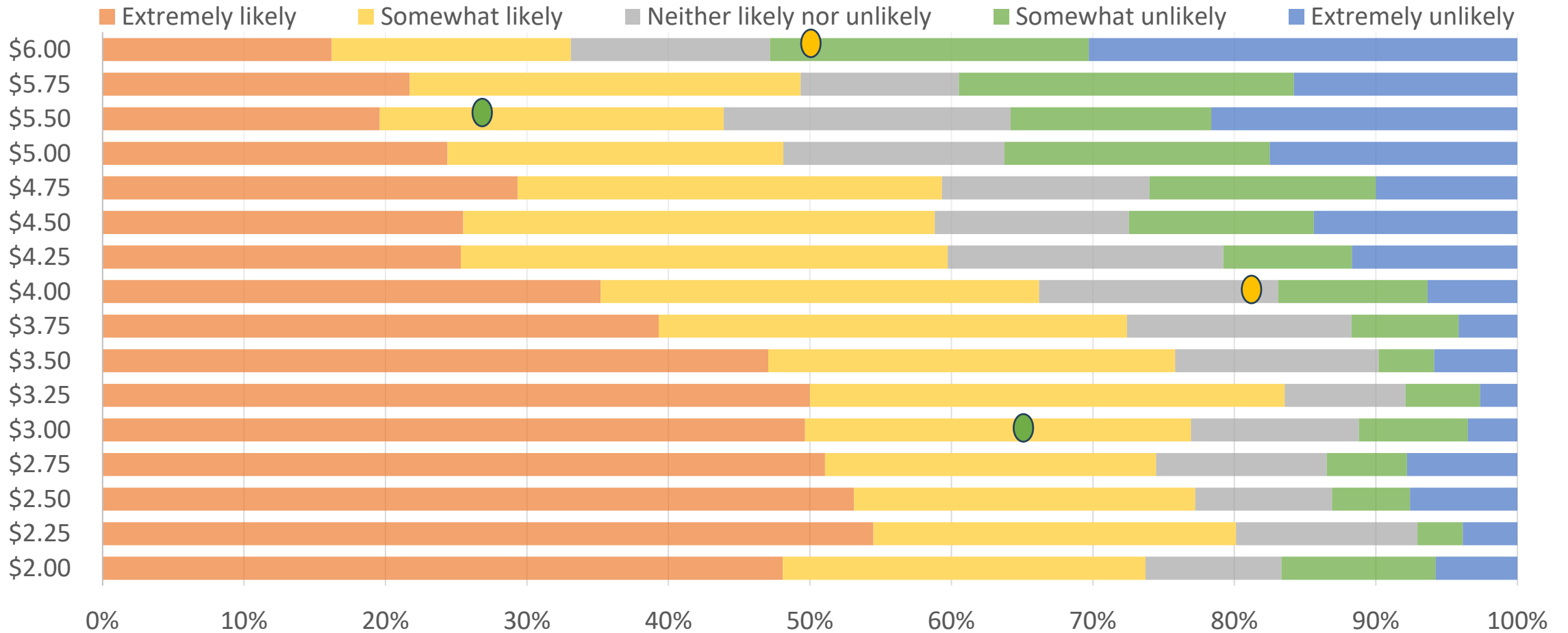
# LIKELIHOOD TO ACCEPT GIVEN PRICES, 2021



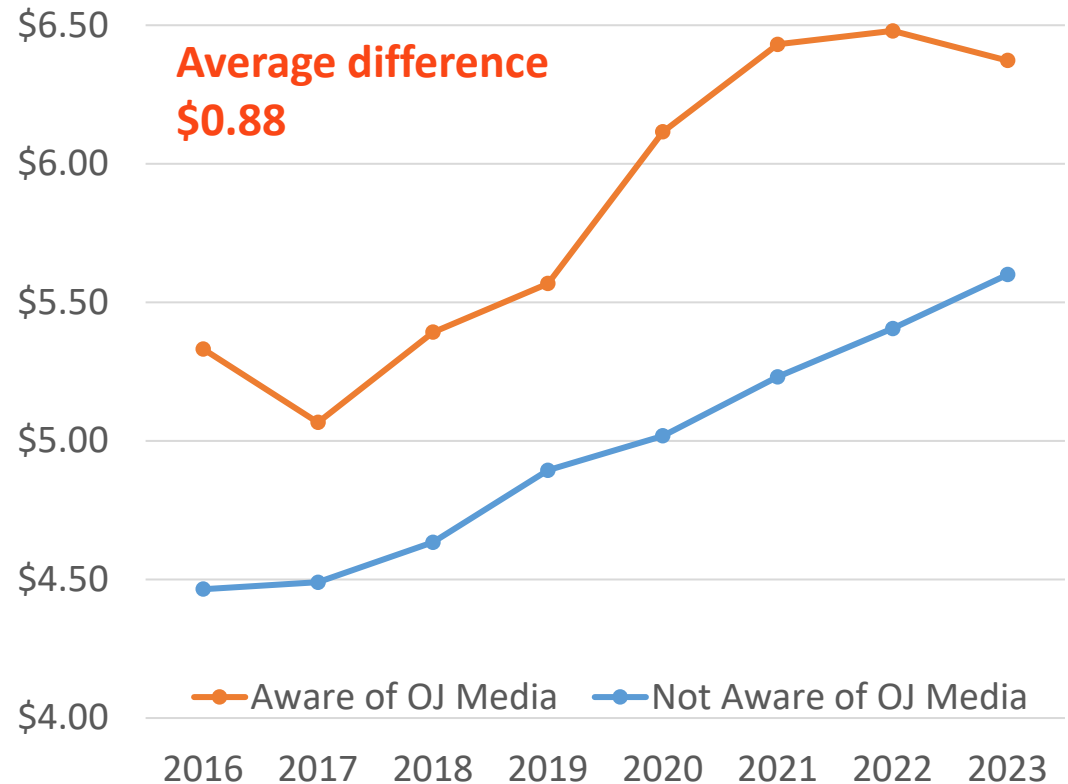
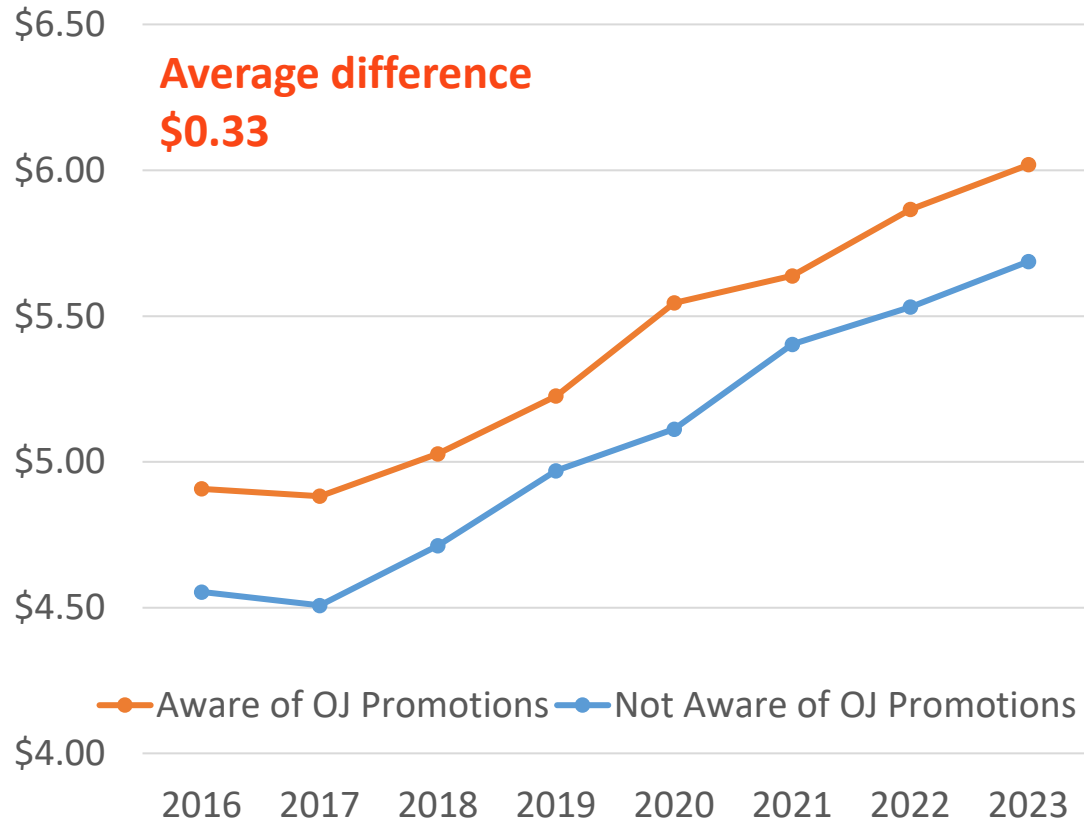
# LIKELIHOOD TO ACCEPT GIVEN PRICES, 2022



# LIKELIHOOD TO ACCEPT GIVEN PRICES, 2023



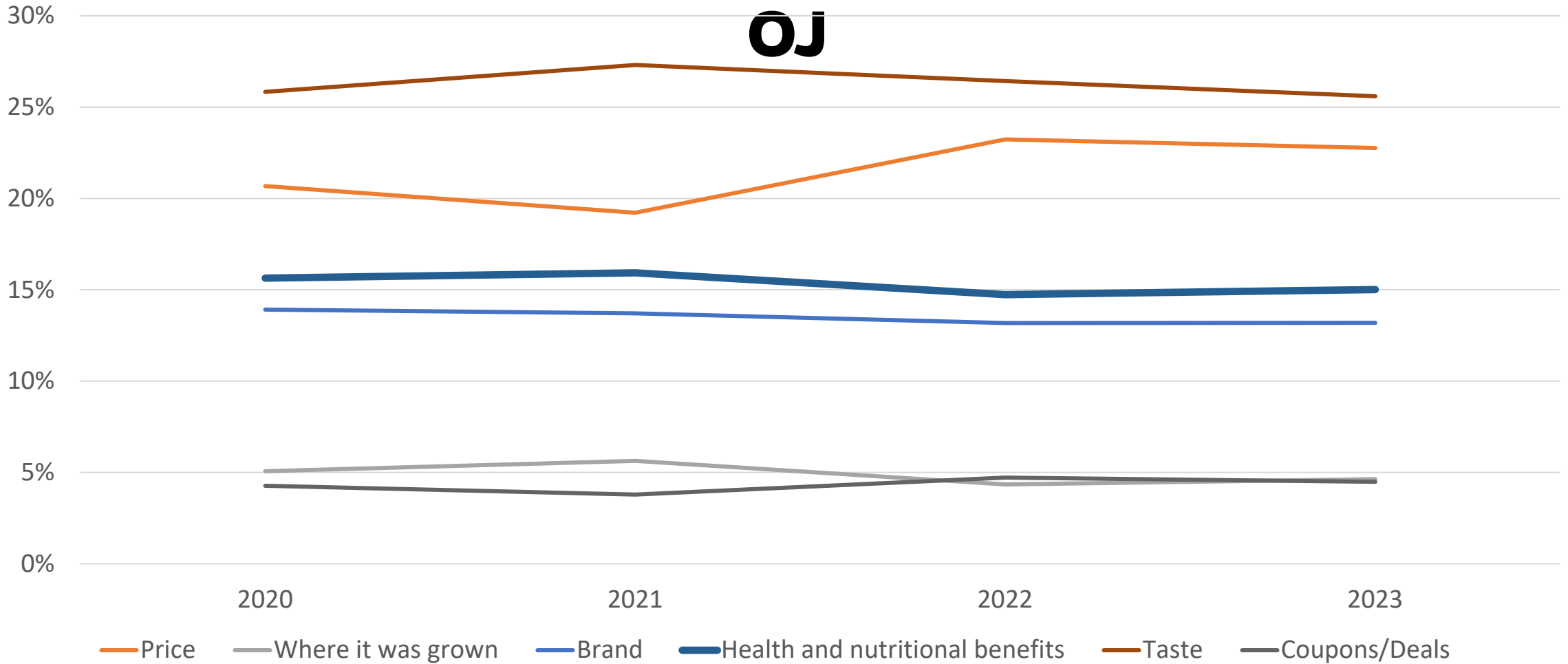
# ORANGE JUICE MARKETING AWARENESS AND MAXIMUM WTP



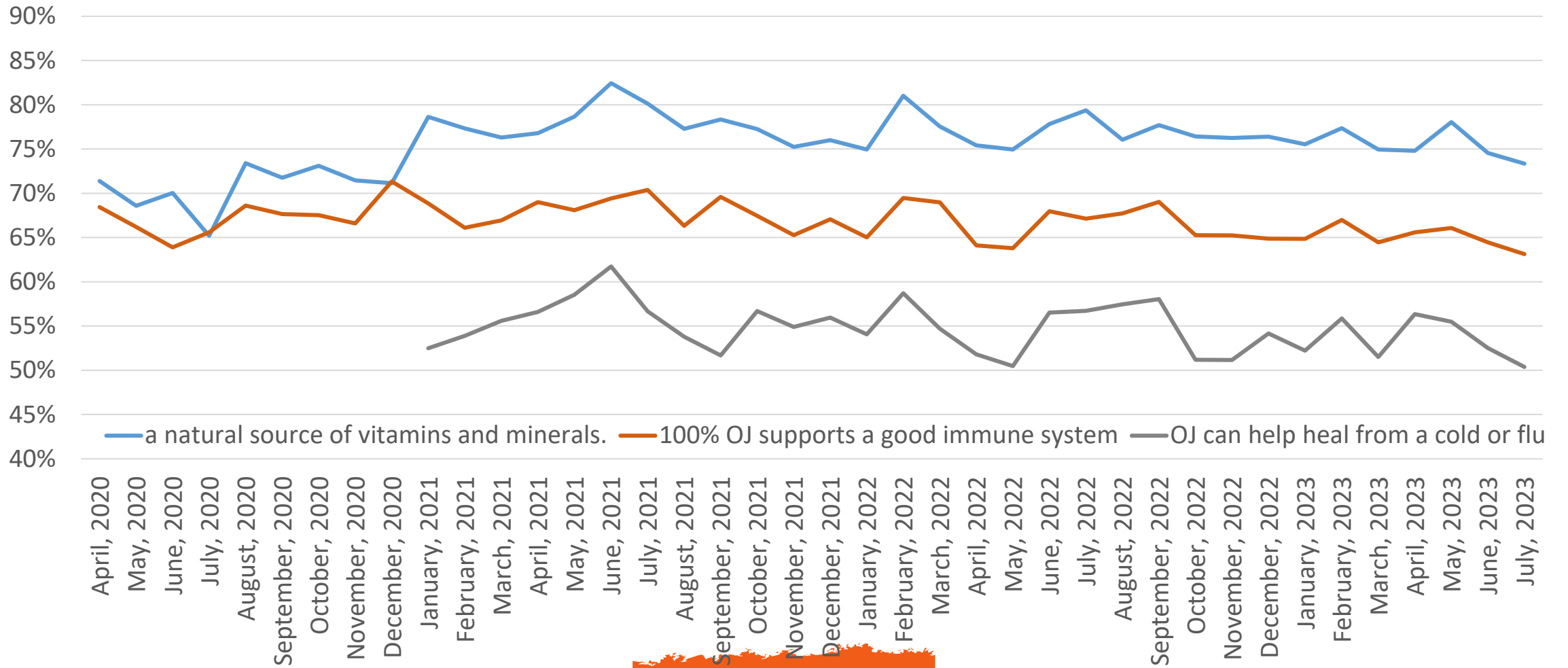


# THE FIRST FACTOR CONSIDERED WHEN BUYING

## OJ



# HEALTH PERCEPTIONS OF OJ



# OVERVIEW

- **About a quarter of consumers are aware of ongoing OJ promotions and/or OJ media**
- **Willingness to pay (and expectations) for OJ are increasing (as prices increase)**
- **Consumers who are aware of OJ promotions and/or OJ media have higher price expectations and willingness to pay**
- **The importance of social media is growing for marketing purposes**
- **Emphasizing the health benefits of OJ is crucial in maintaining and growing the OJ demand**

Questions?

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