

**HOS 5330**

**POSTHARVEST TECHNOLOGIES FOR  
HORTICULTURAL CROPS**

**2024 Florida Postharvest Horticulture Tour  
March 11-15**



## **Visits Summary**

Thursday, March

**Winn Dixie:** Grocery store chain, in-house cut fruit

Monday, March 11

**Fancy Farms:** Conventional strawberry harvest, and blackberry production.

**Wish Farms:** Strawberry cooling, storage, and processing facility.

**Port Manatee- Del Monte Facility:** pineapple, and banana receiving and inspection.

Tuesday, March 12

**Troyer Brothers:** Potato optical sorting and packing.

**Lipman Produce:** Grape, round and Roma tomato packing, ethylene treatment, tomato repack operation.

**Purvis Farms:** Snap bean cooling and packing.

**Lipman Produce:** Tomato breeding research and development.

Wednesday, March 13

**Sun Harvest Citrus:** Gift fruit citrus packer and shipper.

**Hardee Fresh:** Vertical production of organic greens and herbs.

**Harvest CROO:** Strawberry robotic harvester.

**Dundee Citrus Growers Associates:** Citrus under protective screens.

Thursday, March 14

**State Farmers Market:** Market operation, produce quality inspection, grade standards.

**C&S Distribution Center:** Warehouse storage of fresh and processed fruits and vegetables.

Friday, March 15

**Cutrale:** Citrus juice processing and packaging.

**JBT Corporation:** Fresh produce technologies.

**Fresh Del Monte Produce Inc:** Fresh-cut fruit and vegetable facility.

Thursday (3/7/2024)

### Winn Dixie (Gainesville)

Winn Dixie is a grocery-store chain found in Alabama, Florida, Georgia, Louisiana, and Mississippi. It was recently bought by Aldi, so it will be going through some changes in the near future. As of now, the store gets 4 trucks of food per week. The truck temperature is checked by a Winn Dixie employee, and the food is only accepted if the truck is below 41°F. The produce is unloaded and brought down to 35°F before it is chopped and packaged for sale. Once it is packaged, it is kept in a cooler until it is put out on the shelves. The figure below shows the cooler with chopped and packaged fruit.



The produce is kept in a large, walk-in cooler, organized by the type of fruit. It is pretty clean, but it has some produce and water spilled on the floor. While this is not the biggest food safety issue, it could lead to falls or even the production of biofilms. The figure above shows a water spill in the walk-in cooler.

Produce that is not chopped and packaged goes through a process called crisping before it is placed on the shelf for sale. This involves cutting the bottoms of a vegetable, such as broccoli, off and placing it in cold water for 20 minutes to rehydrate them and make them look more appealing to the customer. Customers buy with their eyes, so this step is important to improve sales.

Monday (03/11/2024)

### **Fancy Farms (Plant City)**

Fancy Farms was started with 15 acres of strawberries by Carl Grooms and his wife in 1974. Their son Dustin joined in 2007, and now their daughter Kristi runs the produce market and bakery. Today, they operate the business on nearly 125 acres. The name “Fancy Farms” came from his wife – Carl said that she was the “fancy” part, and he was the “farm” part—but the name is also attributed to the way they maintain the operation.

The farm employs around 500 H2A contractors. They are obligated to ensure fair wages at \$14.77 per hour, along with housing and transport; they cut runners and implement a cover crop after the strawberry crop has been harvested. They resume operations in September and start hiring in May. The nursery sends plants when available, which is usually in the last week of October.

However, they face issues with rain. The farm practices picking every three days in the same field, with a total cost from start to finish of \$35,000 per acre. It takes 21 days from flower to red fruit, and they focus on breeding without GMOs.

For irrigation, they use a well that taps into the aquifer, along with drip and sprinkler systems and white plastic mulch. They apply two sprays per week and avoid using black plastic. The farm also grows peas, corn, and okra. They pick 3/4 ripe berries, and as it gets hotter, picking ceases. Sometimes, growers pick at night to avoid the heat.



- o The farm employs a drip irrigation system to provide precise water and nutrient delivery directly to the root zone of the plants.
- o Fancy Farms also uses integrated pest management (IPM) strategies to control pests and diseases while minimizing the use of chemical pesticides.
- o During the peak strawberry season, which typically runs from December to April, Fancy Farms operates at full capacity to meet the high demand for its strawberries.
- o Strawberries are hand-picked at the peak of ripeness to ensure the best flavor and quality.

- o After harvesting, the strawberries are quickly transported to a cooling facility to remove field heat and maintain freshness. The farm utilizes advanced postharvest technologies, such as forced-air cooling and refrigerated storage, to extend the shelf life of the strawberries.
- o Crop rotation during off-season.

### **Wish Farms (Plant City)**

In 1904, 19-year-old Harris Wishnatzki arrived in the United States from Kyiv, Ukraine. He arrived at Ellis Island with the clothes on his back and a little money in his pocket. With a strong work ethic and entrepreneurial spirit, he begins selling fruits and vegetables from a pushcart on the streets of New York.

In 1922, Harris' operation grows to a fleet of pushcarts, and he teams up with another pushcart peddler named Daniel Nathel. They established Wishnatzki & Nathel, a wholesale business selling fruits and vegetables from the Washington Market in Lower Manhattan. At the time, it was the largest produce market in the country and the epicenter of an international agricultural supply chain from small farmers around the world to consumers all over the northeast.

Harris began traveling to Florida in the winter to be closer to production and the auction market. He established a buying and shipping operation in Plant City while also escaping the harsh New York City winters. He fell in love with the area, and by 1937 makes Lakeland, FL, his permanent home. Harris' sons get involved. Joe (right) works for the company after high school in 1936. Lester (left) joins in 1939 after graduating from New York University. Brothers Joe & Ernest Wishnatzki served in the US Army in Europe during World War II. Harris Wishnatzki passes away, and the second generation of Wishnatzki's, Joe and Lester, assume company leadership. Joe's son, Gary Wishnatzki, begins working for the company at the peak of the great truck strike of 1974. Gary establishes G&D Farms to help supplement produce supply to the wholesale business. It is named for the company's founders Gershon Harris Wishnatzki and Daniel Nathel. Today, the farm has expanded and is the largest contiguous strawberry farm in the United States. Gary Wishnatzki becomes president of Wishnatzki & Nathel, Inc. The company adds blueberries to its portfolio and begins marketing domestic blueberries. The Wishnatzki and Nathel families mutually agreed to split the company. The Nathels would retain the New York wholesale business, while the Wishnatzkis would keep the Florida growing and shipping operation. The company is renamed Wishnatzki Farms.

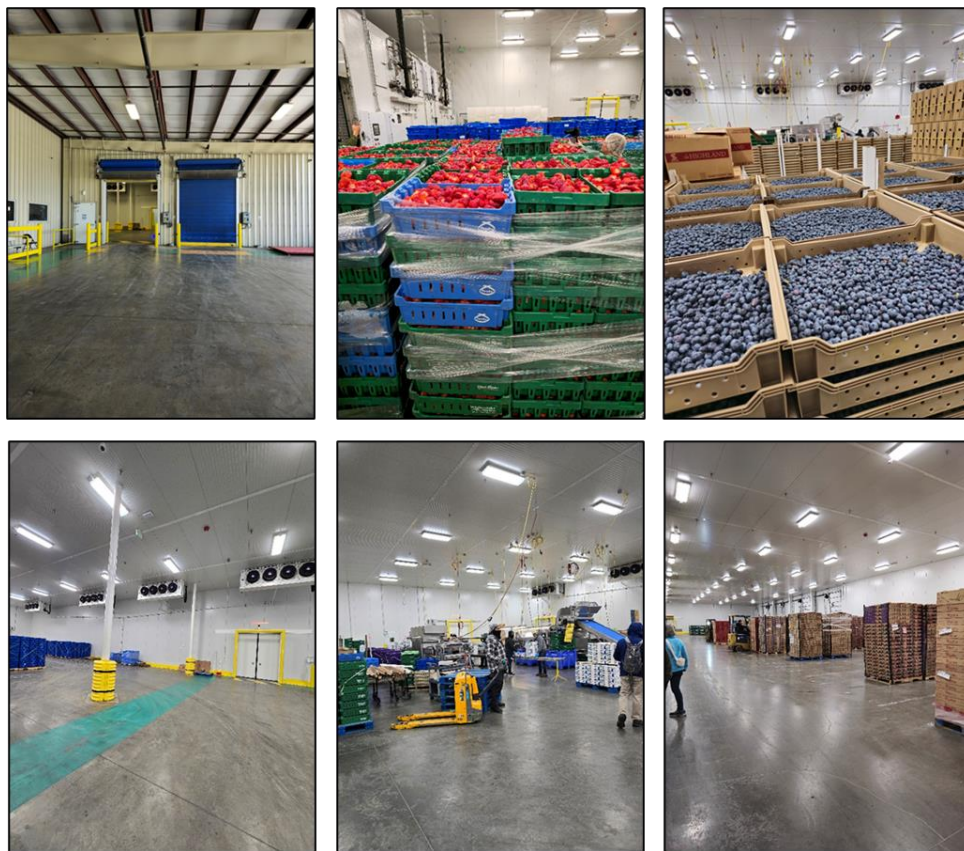
With the goal to develop a secondary market for strawberries, Gary Wishnatzki begins producing and selling processed strawberries helping farmers sell berries when the fresh market is not an option. The company became the first grower in Florida to offer organic strawberries on a commercial scale. The company officially rebrands itself as Wish Farms, unveiling its new consumer brand and mascot, Misty the Garden Pixie. Wish Farms becomes the official soundstage sponsor of the Florida Strawberry Festival. In 2013 Gary Wishnatzki establishes the startup



Harvest CROO Robotics. The company aims to solve the global farm labor shortage through automation.

Wish Farms makes the decision to focus solely on berries and becomes a year-round supplier of strawberries and blueberries. Blackberries are welcomed as the newest addition to the Wish Farms family. Growing regions include California, Georgia, North Carolina, and Mexico. Raspberries are introduced to the Wish Farms lineup, making them the official provider of all four berries.

The company is an international grower, shipper, and marketer based in Plant City, Florida. With the 4th generation fully involved in day-to-day operations, Wish Farms is a proud multi-generational family business.



- o Wish Farms' main source of revenue comes from the sale of its fresh berries to retailers, wholesalers.
- o Wish Farms uses strict food safety policies and regularly conducts audits and inspections to ensure compliance with industry regulations.

### **Port Manatee- Del Monte Facility (Palmetto)**

The Port Manatee operation runs on Saturday when they receive several shipping containers full of produce. They sample 1% of the total shipment to do quality control and quantify the defects, size, and number to meet the USDA criteria. The vessels come from Costa Rica and Ecuador. The containers are moved using cranes that can handle up to 40 thousand tons, and the operation lasts from 5 a.m. to 12 a.m. to unload and load the vessels, handling 60 containers per hour. They are segregated by order, and the refrigerated containers are connected to a power source.

While the operation was not in progress during the visit there, visitors were able to see the holding rooms for produce and the quality inspection room. Their quality inspection team is made up of two people who were judging the size, color, and defects of bananas. Both employees have been there for multiple decades, so they worked quickly and effectively. An employee also cut up a pink pineapple for all the visitors to try. It was a similar flavor to a typical pineapple, but it had a sweeter undertone.



- o Produce is offloaded from ships using specialized equipment and immediately transferred to refrigerated warehouses to maintain freshness.
- o Upon arrival, the produce undergoes inspections to ensure it meets quality and safety standards. Any produce that does not meet these standards is sorted out (return or give them away)
- o The produce to various destinations across the Southeastern United States.

Tuesday (3/12/24)

### **Troyer Brothers (Fort Myers)**

In the 1940s, two brothers, Vernon, and Clayton Troyer, left Nebraska after the challenging Dust Bowl years and moved to Ohio. Later, they settled in Pennsylvania, seeking a better life and more opportunities. With a passion for agriculture, their knowledge, experience, and dedication



were passed down through generations, leading to the establishment of Troyer Brothers in 1943 in Northwest Pennsylvania. The brothers initially focused on potato farming.

During the 1970s and 1980s, the operation expanded, and Vernon's sons, Don, Vern, and David took over the family business. They looked for new opportunities and began growing potatoes in South Florida, the only place in the continental United States with a warm enough climate for winter potato crops. This innovation allowed Troyer Brothers to operate year-round and become known for high-quality potatoes.

In 2016, the third generation, Aaron and Andrew Troyer, joined the company, bringing modern ideas while building on the knowledge gained from growing up in the family business. The Troyer family has been dedicated to potato farming for over 75 years.

The company starts planting in Pennsylvania in the spring to grow seed potatoes. In September, the seed crop is harvested and transported to Florida, where only the highest quality seeds are selected for planting between October and January. During the non-growing season, Troyer Brothers plants sorghum as a cover crop.

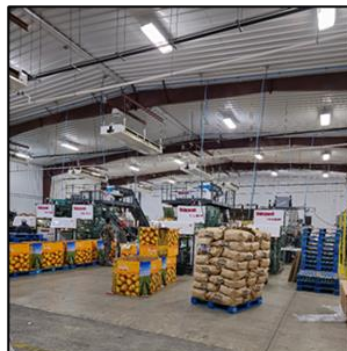
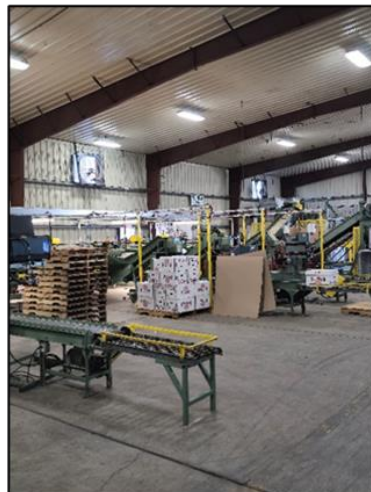
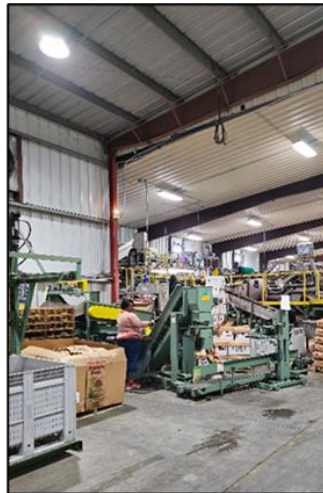
Troyer Brothers work with red, white, yellow, and purple potato varieties during the winter and spring. All varieties are gluten-free, non-GMO verified, and developed using traditional plant breeding techniques. The potatoes are graded and sized using a combination of optical and traditional hand grading.

The company offers three different brands to cater to various recipe needs: SunKing, Annie's Best creamer potatoes, and Pappy's Pride. SunKing is the main brand, recognized for its high-quality potatoes available in red, yellow, and white varieties. Annie's Best creamer potatoes are known for their high quality and unique taste, available in red, gold, and purple varieties. Pappy's Pride potatoes are available in all sizes and colors, focusing on sustainable farming practices. Troyer Brothers' potatoes are available locally, nationally, and in Canada from the end of January through the middle of May. The company prides itself on fast delivery, ensuring fresher produce in stores and better-tasting potatoes on tables. These machines and processes are run by contracted workers from Haiti, so the company offers trainings in multiple languages.

The water to wash the potatoes comes from the aquifer and is reused to irrigate. They also use ozone for sanitation, which is more effective and less expensive than chlorine. After the potatoes are dried, they are optical sorted where the machine check about ¼ inch depth, but it does not detect hollow potatoes. The harvest is made mechanically with five tractors and 14 drivers that drive the trucks loaded with potatoes. Once the potatoes are sorted, they are held in a cooler at 42 F with no light to decrease the incidence of potato greening.

- o This includes the use of precision agriculture techniques, such as GPS-guided machinery for planting and harvesting.
- o The farm's infrastructure is designed to support large-scale potato production, with facilities for washing, sorting, and storing.

- o The postharvest handling processes are carefully managed to maintain the quality and freshness of the potatoes, ensuring they meet the high standards expected by consumers and retailers.
- o Labor force based on employment authorization document (EAD) for Haitians citizens.
- o Troyer Brothers uses IPM techniques to control pests and diseases, relying on biological controls.
- o The company seeks to reduce its carbon footprint by using energy-efficient machinery (pre- and post-harvest).



### **Lipman Produce (Immokalee)**

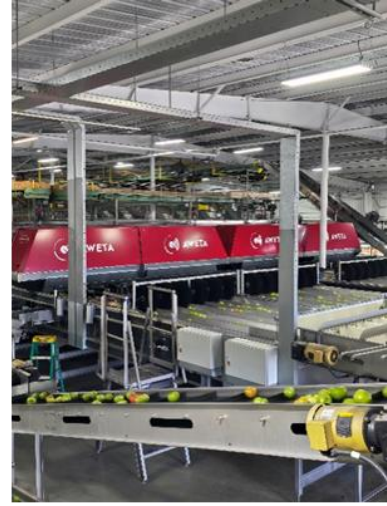
Lipman Family Farms has a rich history dating back to the 1930s when Ella and Max Lipman started selling tomatoes in New York City. They moved to Florida in the 1950s to grow and sell tomatoes commercially. Over the years, the company expanded its operations and introduced various innovations, including the exclusive Crimson™ tomato variety and expansions

into fresh-cut and value-added solutions. Lipman Family Farms emphasizes sustainability, community engagement, and treating everyone like family. They have grown into one of North America's largest integrated networks of local growers, fresh-cut processors, and produce distributors, with international expansions in Mexico and Canada.

They offer a wide range of fresh produce, including their proprietary Crimson™ tomato, which sets the industry standard for color, flavor, and firmness. Their product lineup includes beefsteak tomatoes, bell peppers, cucumbers, eggplants, green beans, heirloom tomatoes, and watermelons, among others. They pride themselves on their ability to fill any order and offer customization options for their packing. Additionally, they control the whole seed-to-shelf journey of their produce to ensure food safety and quality.

With a comprehensive range of services, including farming, greenhouse cultivation, packing, repacking, fresh-cut solutions, logistics, food safety, innovation, sustainability, and a local network. They emphasize food safety with an industry-leading program, innovation through their in-house R&D department, sustainability as a core value, and strong partnerships with local growers. Their services ensure the delivery of fresh, quality produce with maximum freshness and flavor, customized to meet customer needs.

In the facility, they wash, select, pack, handle, and do logistics; Lipman has 8 similar facilities around the United States. They usually pick in the green stage to hold until they want and control with ethylene. They can handle about 50 to 60 trucks per day.





Using optical sorting with AI, they reduced from 220 people to 110. The machine takes around 100 pictures of the same tomato, 24 external, and the rest infrared; it can detect around 3 thousand defects, different levels of severity, bruises, and scars.

- o Lipman Produce specializes in the cultivation of a variety of tomato types, including round, Roma, grape, and cherry tomatoes.
- o Infrastructure is designed to support large-scale tomato production, with facilities for washing, sorting, and packing using a 10 million us dollar machinery from Netherlands.
- o The primary source of revenue for Lipman Produce comes from the sale of its fresh tomatoes to retailers, foodservice providers, and processors products adding value to the product (tomato sauces and salsas).
- o Lipman Produce employs integrated pest management (IPM) techniques to control pests and diseases while minimizing the use of chemical pesticides, in addition to the irrigation management (drip tape) and black on white mulch + silver corners to decrease white flies' pressure.

### **Purvis Farms (Immokalee)**

The Farmers Alliance team, with over 100 years of combined industry experience, offers a comprehensive range of services to farmers. They aim to address common challenges farmers face in bringing their products to market. Their partnership with top-tier companies enables them to provide exceptional services covering the entire farming lifecycle, from pre-planting to harvest and packaging. The goal is to help farmers achieve long-term success by maximizing the potential of their crops and ensuring fresh, timely, and quality distribution to food sellers and consumers.

Wade Purvis grew up in Plant City, FL where he discovered his love for the land early on. He watched his grandfather tend to his vegetable farm there, and Wade always had a garden in the yard while growing up. He graduated from Florida Southern University and started farming in Immokalee in 1986. He now farms 2000 acres of green beans, edamame Lima beans, a wide variety of peas, and watermelons. He married his wife Karen in 1987 and has two kids, who are both involved in the farm. Kyle runs Alliance Packing in Immokalee, and Shayla helps behind the scenes with social media and compliance.

The packing house is an old tomato packing house changed by the owner to adequate more types of vegetables such as watermelons, limes, tomatoes, beans, and peppers, they have tree packing lines where they can adapt to each variety they want. The vegetables are cleaned with water and peracetic acid, washed, hand-selected, packed, and cooled at 42°F, and then shipped.

- o Facilities designed to handle, process, and pack a variety of produce, primarily focusing on nearby farmers and receiving products from central America.
- o Purvis Farms' packing house comes from the services it provides to local farmers and growers. Offering packing, processing, and distribution services for growers looking to maximize the value of their production.

- o Services consist of receiving/sorting produce, washing/sanitizing, grading/packing and cold storage.



### **Lipman R&D (Estero)**

Lipman R&D is focused on developing new tomato varieties that are optimized for flavor, color, shape, size, nutritional value, shelf life, and disease resistance. They use rigorous selection and testing to ensure each new hybrid meets these criteria. The team also emphasizes innovation and sustainability in their research, working closely with farmers to adapt varieties to specific regions and climates. They are committed to food safety and quality in their R&D effort.

The facility, which includes breeders and horticultural scientists experienced in R&D and hybrid seed production, works to create new varieties in dedicated trials for Lipman's open-field production. The in-house research program is the signature of Lipman's vertical integration and quality, according to the release. Lipman grows a variety of conventional and organic fields and



greenhouse tomatoes, peppers, specialty peppers, cucumbers, squash, green beans, eggplant, hard squash, and watermelon.

Wednesday (3/13/24)

### **Sun Harvest Citrus (Ft. Myers)**

Sun Harvest began in 1940 when Robert Edsall, Sr. planted his first grove in Vero Beach, Florida. The location was chosen for its ideal conditions for growing sweet, flavorful fruit. The legacy was passed down through generations, with Robert's grandson, David McKenzie, currently overseeing the groves.

In 1990, the family expanded by opening a packinghouse and retail store in Fort Myers, Florida, under the leadership of Robert's granddaughter, Sandy McKenzie Nicely. Today, Sun Harvest Citrus is committed to providing customers with premium fruit, including Navel Oranges and Honeybells, focusing on exceeding expectations and ensuring quality and flavor.



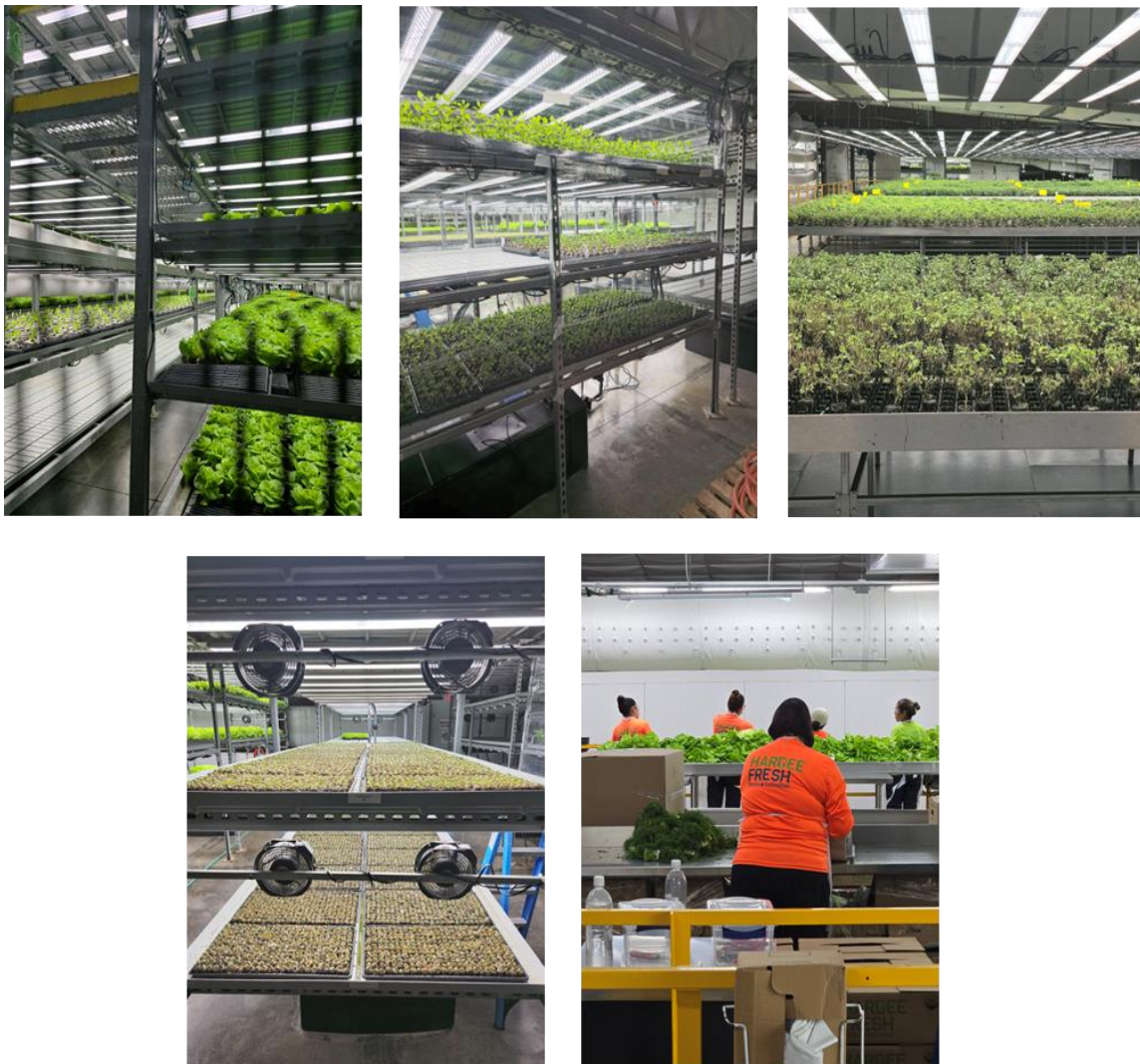
- o Well-known citrus retailer in the region with significance to the local economy, known for its wide variety of products, including fresh citrus fruits, juices, and various gift items.
- o The company prides itself on the quality and freshness of its products, having a mixed variety of juice combinations including oranges, grapefruits, limes, and specialty citrus fruits.
- o Sun Harvest Citrus comes from the sale of its citrus products and juices to consumers through its retail store and does not supply wholesale due to the freshness of its products.

### **Hardee Fresh (Wauchula)**

Hardee Fresh is the leading indoor organic vertical farm in the U.S. They are completely committed to sustainable farming practices. They use technology to monitor and control

environmental factors for optimal growth conditions, ensuring quality and safety with zero pesticides. Employees conduct daily inspections to ensure their facilities are clean and safe.

The leafy greens grow on large metal shelves under full spectrum lights, which are on for about 15 hours per day. Every week, one batch is harvested, and another is planted, but it takes around six weeks to finish a crop. The leafy greens grow in coconut media and specific pests are allowed inside the building to promote growth. The growing area is 50 thousand square feet, which is equal to 5 acres of growing space. When one crop is finished growing and harvested, they wash, scrub, vacuum, and sanitize the trays are shelf before placing the next crop in the area. They inject CO2, control humidity, air, and temperature, and test all the water parameters for the batch. All of this is done automatically, and they can keep track through an app on the phone.



Hardee Fresh had some of the strictest sanitation measures of any other company on the trip. Visitors were required to put their long hair up in a hair net and beards in a beard net, place

shoe covers over their shoes, wear lab coats, wash their hands, and wear gloves. One student grabbed gloves before washing his hands, and the Hardee Fresh employee made him throw the gloves away because they were contaminated. From a food safety perspective, this is how all companies should be. Humans introduce several pathogens when working in the food industry, so requiring employees, and even visitors, to follow regulations helps decrease the incidence of foodborne illnesses. This is especially important for crops such as leafy greens that are often eaten raw, so therefore do not have a heating kill step.

- o The controlled environment ensures optimal growing conditions, including temperature, humidity, and lighting, which are crucial for plant growth and health.
- o Variety of leafy greens and herbs, such as lettuce, spinach, basil, and cilantro, and branding in locus.
- o Use of hydroponic Systems eliminating the need for soil and reducing water usage by up to 90%, in addition the recycling of water used during the process. Several testing parameters are applied, such as pH, pathogens, nutritional values, conductance.
- o The company can produce year-round, locally grown greens and herbs.

### **Harvest CROO (Avon Park)**

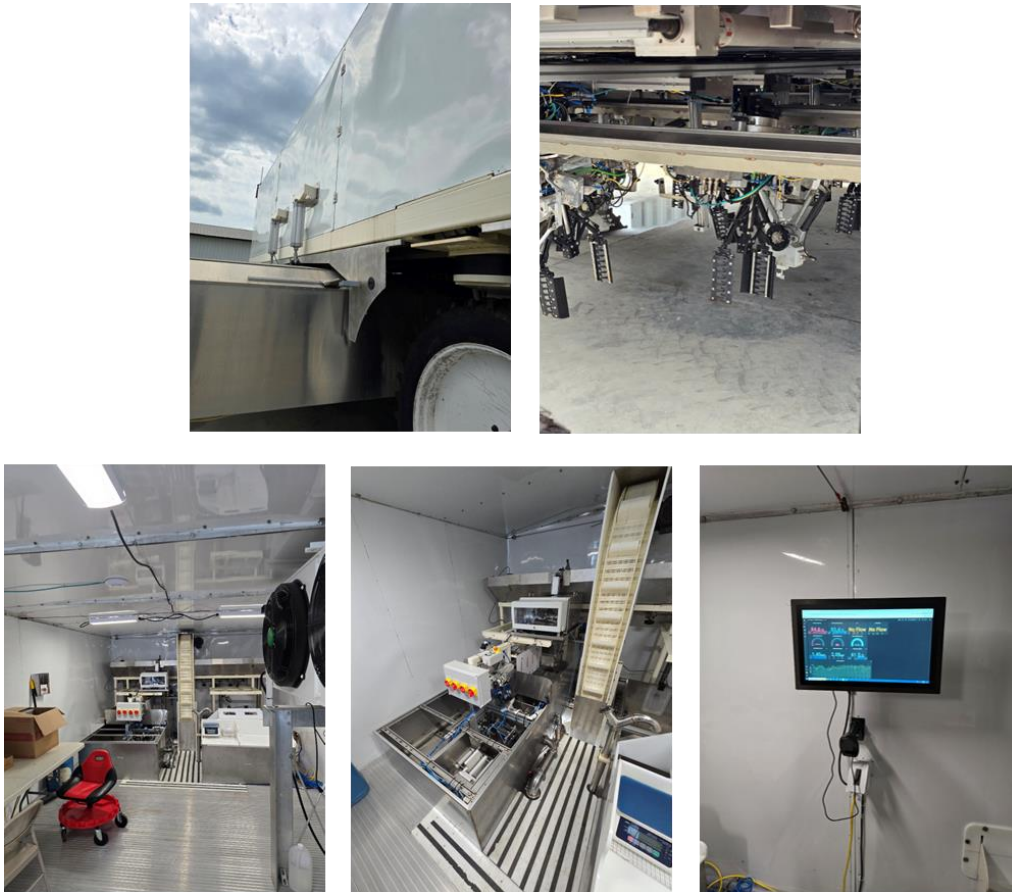
Harvest CROO aims to transform automated agriculture with their technologies, providing a service that automates crop management, harvesting, and packing, starting with strawberries. The company addresses the challenges strawberry growers face, such as labor shortages and rising costs, by offering a solution that reduces costs, secures the supply chain, and supports workers across various stages. With 70% of US strawberry growers as investors to assist growers in picking unpicked crops due to labor shortages. Their robotic harvester reduces CO2 emissions by 96% compared to manual pickers. It is equipped with a LIDAR system for precise navigation and an AI vision system to determine the ripeness and health of each berry. The company's software ecosystem provides growers with data insights, monitoring, and control of harvesters, aiming to keep strawberries affordable for everyone and support sustainable and responsible harvesting practices.

The robot runs at a speed of 20 inches per second; using 16 picking heads, the robot opens the bush, scans the plant, picks and handles the berries, uses a fluid with a sanitizer, and takes it to the top; the AI does an inspection to see if it is packable, weight the berries; if it is, it has two people inside packing (around 30/40% ending be culls). The inside is kept at 50-60 °F.

- o Automated strawberry-picking robot, designed to navigate the fields and harvest ripe strawberries with precision.
- o Sensors and imaging technology to identify ripe berries and gently pick them without causing damage and can process/pack inside the machine cabin.
- o Alternative to manual labor and ensuring consistent quality and yield, providing a scalable solution for large-scale berry production.



CROO collaborates with growers to conduct field tests to validate the technology.



### **Dundee Citrus Growers Associates (Dundee)**

Dundee Citrus Growers Associates was established in 1924 and has become one of the largest fresh fruit cooperatives in the Florida Citrus Industry. It harvests multiple citrus varieties from over 10,000 acres across Florida and operates two advanced fresh fruit packinghouses with nearly 100,000 square feet of cold storage capacity. Dundee CGA has expanded its product range to include Florida blueberries and tree-ripened peaches, offering high-quality fresh produce to major retailers, wholesalers, and food service distributors in the United States and Canada.

Now, they are implementing the C.U.P.S (Citrus Under Protective Screens) growing system, which is a new approach that aims to produce the highest quality citrus by using precise agricultural inputs while minimizing the use of fertilizer, water, and pesticides. This system offers several benefits, including providing a sustainable growing environment, protecting natural resources, reducing the need for water, pesticides, and fertilizers, providing protection from citrus psyllid/HLB and other pests and diseases, encouraging faster growth, yielding higher quality and

more produce per acre, and ensuring the highest level of food safety and security. This method is being utilized in Central Florida to grow citrus locally, but they are mainly used for grapefruit.

- o Effective marketing and distribution strategies, focusing on long-term production and maintaining the citrus sector in Florida.
- o Oranges, grapefruits, tangerines, and lemons production.
- o C.U.P.S. (Citrus Under Protective Screen) approach provides protection against pathogens, increases water usability, faster crop growth, and decreases fruit drop.
- o Rely on market analysis to understand industry trends and pricing to brand their productions (adding value).

Thursday (3/14/24)

### **Plant City State Farmers Market (Plant City)**

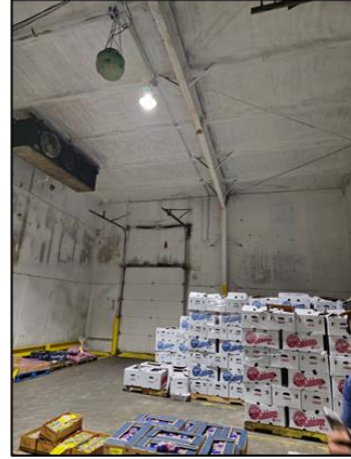
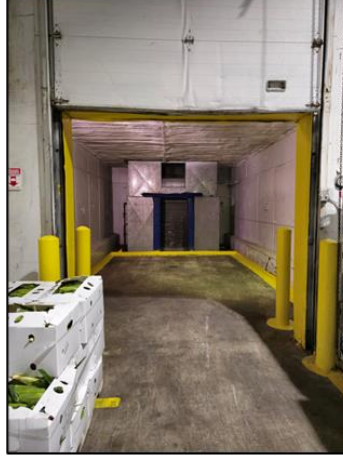
The Plant City State Farmers Market in Plant City, Florida, is a regional hub for the distribution and sale of agricultural products, mainly known for its focus on strawberries and other fresh produce. The market is a vital link between local farmers and buyers, including retailers, wholesalers, and the public. The market is an essential component of Florida's agricultural economy inside that micro-region, providing a venue for farmers to sell their products and contributing to the availability of fresh, locally grown produce in the region.

The market is a platform for farmers and growers to sell their produce in bulk to retailers, wholesalers, and other commercial buyers. This helps farmers get a fair price for their goods while providing businesses with access to fresh, local produce. Some vendors at the market also sell directly to consumers, offering fresh fruits, vegetables, and other local products. This allows the public to purchase fresh produce directly from the source. They also host seasonal events or festivals, especially during the peak strawberry season, attracting visitors and promoting local agriculture.

They serve as a distribution point for agricultural products, with facilities for sorting, packing, and shipping produce. And they provide various support services for farmers and vendors, including market information, grading services, and agricultural extension services.

- o Like Purvis distribution center, PCSFM has a potential to process fresh produce, including fruits, vegetables, and specialty crops, providing farmers in the region to process and add value to their crops.
- o Facilities are designed to accommodate both large and small-scale producers, where Fred manages vendor applications and allocations. The important asset is to maintain a relationship with local growers, and the community, supporting the local economy.
- o Plant City State Farmers Market has one of the most profitable businesses in the sector.





### **C & S Distribution Center (Plant City)**

The C&S Distribution Center in Plant City, Florida, is part of C&S Wholesale Grocers, one of the largest wholesale grocery supply companies in the United States. The distribution center in Plant City is likely involved in the storage and distribution of a wide range of grocery products, including fresh produce, frozen foods, dairy products, meat, and general merchandise.

The Plant City distribution center is strategically located to serve the grocery supply needs of retailers in the region, leveraging its proximity to major transportation routes for efficient distribution. They are known for their focus on customer service, operational efficiency, and innovation in supply chain management.

Key activities at the C&S Distribution Center in Plant City include:

- o The distribution center uses inventory management to keep track of the movement and temperature of produce/products from the supplier to the company facility. Ensuring accurate quality, and good precedence.

- o Temperature controls are maintained throughout the facility to preserve the freshness and quality of the produce, with different areas designated for various temperature requirements (fresh produce, industrialized/processed goods, freezers).
- o The center's logistics team owns the transportation trucks to coordinate the timely delivery of products. Optimizing delivery routes, schedules, and labor availability.
- o Ripening section for bananas (imported from Colombia, Peru, and Costa Rica)
- o No photos allowed.

Friday (3/15/24)

### **Cutrale (Auburndale)**

Cutrale is an orange company that produces juice, oils, and bran, which are pelletized citrus pulp. The company was founded in 1967 and produces Simply Orange Juice, coined in 2001, and a product of Coca-Cola. The juice is produced at Cutrale and then pumped through a one-mile pipeline to the Coca Cola plant to be bottled. Before the juice is sent to Coca Cola, it is kept in 68-foot-tall tanks that can hold up to 21 million gallons of liquid. They are kept at a refrigerator temperature and a sample is taken for microbial testing every three months.

The byproducts of orange juice are also profitable, Cutrale found. The orange peel is used to create orange oil, which can be sold to food companies as a flavor or to cleaning product companies and used as a scent. Furthermore, the pulp is pelletized and sold to farmers to feed cattle and other livestock. This is an important business venture for orange juice producers because juicing machines and labor are not cheap. Cutrale has 60 juicing machines with 5 juicers each. These juicers come from John Bean Technologies, or JBT, a company that specializes in food and beverage technology.

The visit to Cutrale was well organized; they had a PowerPoint presentation, samples of their products, and provided an environment in which visitors could ask questions. However, Cutrale has been involved in controversy lately regarding the appearance of PFAS in their juice products. PFAS are polyfluoroalkyl substances, which have been used in cookware since the 1940s but are now found in food packaging. There is an ongoing lawsuit against Simply Orange for having detectable levels of PFAS in their products, which is not allowed by the FDA, but the products were not recalled. PFAS can be harmful and are known as the “forever chemical” because they do not break down for more than 1,000 years. While this does not reflect well on Cutrale, today’s world relies on plastic and mistakes are bound to occur.



- o The company is committed to sustainable practices to minimize its environmental impact throughout every step of the operation.
- o Several research site in the US and in Brazil.
- o Sensitive calendar scheduling to receive produce from US farms and international shipping from Brazil, to avoid produce shortage.
- o High quality products are due to high technical machinery and innovative processing technology.

### **JBT Corporation (Auburndale)**

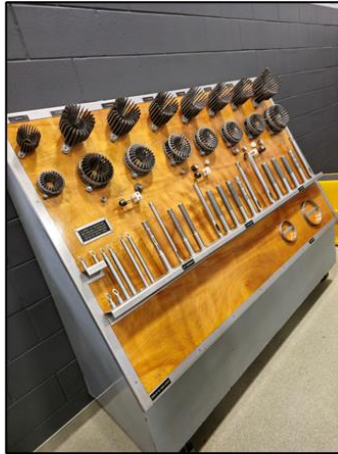
John Bean Technologies Corporation, or JBT Corporation, is a global provider of technology solutions for the food processing and air transportation industries. Founded in 2008 as a spin-off from FMC Technologies, JBT has its headquarters in Chicago, Illinois.

In the food processing sector, JBT offers equipment and services for processing fruits and vegetables, meat, seafood, and other food products. Their solutions include sterilization systems, freezers, chillers, pasteurizers, and juicing equipment. JBT's orange juice extractor is a notable example. It was first developed by FMC in the 1930s and was designed for efficient extraction while retaining juice quality. The machine can handle large volumes, is easy to clean and maintain, and can be equipped with features like pulp control.

In addition to the basic extraction process, JBT's equipment can be equipped with additional features such as pulp control, which allows for adjusting pulp levels in the final juice product. This flexibility enables producers to cater to different consumer preferences. Overall, the

orange juice extractor is a highly efficient and versatile machine that is an essential component of any commercial citrus processing operation. Its ability to produce high-quality juice in large quantities makes it a valuable asset for manufacturers looking to optimize their production processes.

The extraction process generates several subproducts, including pulp, peels, and seeds. These can be further processed into products such as natural fiber additives, citrus oils, animal feed, and D-Limonene. By utilizing these subproducts, producers can enhance sustainability and create additional revenue streams.



- o Manufacturing and assembly processes for juice processing from Cutrale machinery.
- o Prime company in the citrus sector machinery provider, investments into research and development (high efficiency in juice and residue extraction) are extremely important to the company to acquire market share.
- o Costume customer support services, including training, installation, and technical assistance, focus on a leasing product contracts instead of direct sales (biggest revenue).

## **Fresh Cut Del Monte Produce Inc. (Lakeland)**

Del Monte is a facility that specializes in processing and packaging fresh-cut fruits and vegetables. Their operations typically involve washing, cutting, and packaging a variety of produce to be distributed to retailers, food service operators, and consumers. The facility is part of Del Monte Fresh Produce, a leading global producer and distributor of fresh and fresh-cut fruit and vegetables. They are equipped with advanced processing and packaging equipment to ensure the freshness, safety, and quality of the products. They are also known for their commitment to sustainability and food safety standards, so the facility would also adhere to strict protocols for hygiene, quality control, and environmental responsibility.

At the Lakeland facility, Del Monte Fresh Cut handles a range of products, including but not limited to:

- Fruit: Pre-cut fruits like pineapples, melons, apples, and berries, which are packaged for convenience and ready-to-eat consumption.
- Vegetables: Fresh-cut vegetables such as carrots, celery, broccoli, and salad mixes, often used for snacking, cooking, or as ingredients in prepared salads and dishes.
- Value-added products: This can include fruit bowls, vegetable trays, and mixed salad kits that combine fresh produce with dressings or dips for a complete, convenient meal solution.

Key activities at the Fresh Cut Del Monte Produce Inc. include:

- o Massive portfolio of products, including fresh fruits like bananas, pineapples, avocados, and melons, vegetables (onions, peppers, cucumber, etc.), salads, and prepared fruit and mixed vegetables.
- o Services consist of receiving/sorting produce, washing/sanitizing, packing, cold storage, and shipping.
- o The infrastructure is designed to handle large volumes of produce efficiently, despite the considerable small warehouse they operate.
- o The primary source of revenue operations comes from the sale of fresh and processed goods to supermarkets, foodservice providers, and other retailers (Aldi, Winn-Dixie, 7-eleven)
- o No photos allowed.