Organic Milk Processor Packs A Punch

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Located 20 miles outside Los Angeles, WhiteWave Foods' Horizon Organic facility in City of Industry, CA, is making organic milk accessible to a larger consumer base than ever before. In fact, Horizon Organic is the fastest growing unique brand in the country. The 315,000 square-foot facility was built in 1984 and originally operated as Presto Foods.

In addition to Horizon Organic, the City of Industry facility also produces Silk non-dairy milks, International Delight coffee creamer, and iced coffee.

In this facility, the team of 285 employees, including 240 Teamsters, produces about 50 million gallons of product per year. Since its start, the facility has tripled in size while utilizing limited warehouse space. Despite the challenge, the facility has the capacity for still more growth, and a new line is planned for next year.

All strategic corporate decisions for the City of Industry plant and its sister facilities are made at the company's corporate headquarters, but local concerns like asset performance and production speed are made inside the individual plants. The City of Industry facility employs a continuous improvement culture to reduce downtime and bottlenecks and has improved OEE performance by up to 34 percent on some production lines.

Organic: What's in a Name?

Key to the Horizon Organic business is the careful sourcing of organic ingredients and the verification of organic suppliers.

The City of Industry facility sources organic milk from various organic farms in the region, and David Voorhees, the facility's plant manager, says that the company will "partner with smaller farms to help them become profitable." The company sources organic milk from over 600 family farms and two WhiteWave-owned farms. All suppliers are certified organic by the USDA to ensure that, among other standards, the farms do not commingle organic and non-organic products.

Maintaining organic integrity is not just the responsibility of Horizon's suppliers. Horizon Organic completes an annual review process to ensure the effectiveness of its organic processing policies. The company audits its own processes as well as those of its suppliers, ensuring that organic milk is stored and isolated from non-organic ingredients and that all organic product is tracked through the supply chain.

Customer audits occur with frequency – about once or twice per month – and, along with state audits, ensure that Horizon Organic's internal policies stay in sync with

organic processing standards.

Voorhees notes that this diligence is important not just to ensure organic integrity but also to ensure product safety and brand equity are preserved.

He also notes that in the wake of the Food Safety Modernization Act, the company “expects more federal inspectors, more regulations,” and that it is ready for them.

Managing Deliveries

WhiteWave’s City of Industry facility receives 40 to 60 trucks of milk per week in two bays, one for organic and one for conventional raw milk. The company receives milk via contract haulers who deliver milk to the receiving bay, which is gated and locked unless active receiving is taking place. Each of the facility’s cream silos can hold 15,000 gallons, and collectively nine milk silos hold 250,000 gallons. After receiving, the milk is pasteurized and standardized to a pre-determined fat content level — skim, 1%, 2%, or whole.

After standardization, the milk, along with other liquid and non-liquid ingredients are sent to the blend rooms, which are separated from the rest of the processing space to quarantine contaminants. Four blend areas produce product for nine packaging lines, and the blenders are rinsed between batches.

Keeping the Lines Moving

Though the Horizon Organic, Silk, and International Delight processing and packaging lines are part of a complex and well-organized system, the facility operates four packaging lines that are, perhaps, most interesting in their distinctness from one another.

Gable Top Filling: Horizon Organic’s half-gallon cartons and many Silk products are packaged along one of three gable top cartoning lines. Each cartoner builds, fills, and seals 120 cartons per minute.

A stack of flattened cartons is inserted into the end of the machine. After feeding into the machine, the bottoms are sealed to create a rectangular container, which is sanitized and dried before being filled. The spout is welded onto the carton; the top is “broken,” or folded, to create a steeple; a jaw melts the two straight sides of the top together.

Single Serving Filling: The facility also boasts two aseptic lines that create the Horizon Organic and Silk brands’ single serving, shelf-stable boxes. These lines produce 50 million drink boxes per year and target 70 percent OEE.

The cartons are created using a single continuous sheet of flexible cardboard, which is sterilized, rolled, folded, and sealed all within an enclosed, aseptic environment. The tube is then filled with organic milk, creating what Voorhees calls “a solid tube of sterile product.” The individual cartons are then cut from the tube and sealed, and then ends are pinned down to turn the pouches into boxes.

Since the boxes don’t leave the aseptic chamber until they are completely sealed, the filling and packaging process prevents any possible contaminants from entering the product. The resultant boxes are shelf-stable and don’t need refrigeration.

Polycarbonate Cups: International Delight branded polycarbonate (PC) cups are filled, sealed, and cut in a separate room that contains two aseptic packaging machines. In this room, two billion cups per year are formed.

These sterile conveying lines have performed at 75 to 78 percent OEE and form the cups during the filling process. Individual due cups punch coffee creamer-sized impressions into a sheet of polycarbonate to create and fill 48 PC cups per pass through the machine.

Peroxide and steam sanitation cleanse the plastic within the aseptic chamber, which is kept at one psi above atmospheric pressure. If a leak were to spring under these conditions, the leak would be from inside out, instead of the other way around, protecting the sterilized product.

Plastic Bottle Filling: International Delight’s large bottles of non-dairy based half & half creamer are packaged in a single line that is much different than the others inside the facility.

Bottles are shipped in, sanitized, spun on a rinse wheel and filled with a 50-head filler. After being filled, the bottles have a foil seal placed over the mouth and are then checked for leaks.

Since International Delight creamer bottles are not symmetrical, all bottles must be faced before the label – a cylindrical plastic sleeve – is shot onto the bottle. Steam is used to shrink the sleeve onto the package. The bottles are then capped, packed, and palletized before being sent to the warehouse.

Getting the Most From Preventive Maintenance

Meeting the facility’s aggressive production growth has been a challenge. Voorhees notes that though food processing technology is “not cheap, we are charged with delivering high quality product with the least amount of downtime and material losses.”

Matt Miller has been with WhiteWave for 11 years and is a Six Sigma Black Belt. Matt brought his organizational and process knowledge to the table to help address process management issues. Along with a team, Matt worked to develop new processes with the facility’s current equipment.

Combining Six Sigma strategies with Total Productive Maintenance pillars, the company created a new plan for equipment maintenance. The new root cause maintenance plan has allowed the solutions to equipment problems to be predictive instead of reactive, and with increased uptime and other process efficiencies being introduced, the facility is now producing 23 percent more food on the same assets,

which means the City of Industry plant is now processing ten million more gallons each year.

“It’s a really exciting time to be here,” says Voorhees.

The new strategies require greater trust and investment in the company’s employees. The facility is fostering buy-in through a variety of strategies, including:

- Creating an injury-free workplace.
- Selecting the right people for the job and keeping them engaged.
- Training and licensing employees on both soft and technical skills.
- Routine performance reviews with focused improvement activities geared to drive safety, quality, and throughput advancements.
- Structured communication strategies covering tactical and daily operational issues as well as plant and business performance reviews.
- Engagement activities to ensure the team is appreciated and valued.

Voorhees says there is no distinction between process employees and sanitation crews. Each member of the staff operates and maintains certain pieces of equipment, allowing them to “own” it. Voorhees likens the new relationship between employee and equipment as doctor-patient. Since the employees see themselves as doctors instead of mechanics, they are emboldened to diagnose potential problems instead of waiting to fix broken equipment.

Planning maintenance instead of responding to emergencies will help the plant meet the growing demand for its products by continuing to increase efficiencies.

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