



Seneca Foods



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Project Background

Seneca Foods Corporation is a leading food processing and packaging company headquartered in Marion, NY. Founded in 1949, the company operates 24 plants across the United States in the West, Mid-West, and East, and employs 3,400 full-time workers and 8,000 seasonal workers as of 2017. Approximately 12% of packaging is done for Seneca-owned brands such as READ, Aunt Nellie's, Libby's, and Seneca. The remainder of the packaging is done for private labels and other food distributors. Some of the products produced include three-bean salad, whole kernel and cream-style corn, peas, and a variety of beans including wax beans, green beans, and Italian beans.



Farm Fresh Goodness Made Great

"Finding improvements is a mindset. If you have that mindset, you begin to develop an eye for seeing problems and their solutions everywhere." ~ DC

Project Background

The objective was to reduce solid waste at the Rochester facility. Solid waste can occur for a number of different reasons, including: washing the product, transportation across the plant, and improper can sealing or cooking. By quantifying the loss of good product during the various stages of processing, recommendations could then be made to improve production retention in areas of high loss. An additional project goal was to inventory chemicals used in production to identify areas for potential reduction.

Incentives to Change

In 2016, Seneca established a product recovery program, aimed at maximizing the amount of product that ultimately becomes either canned or frozen. The MnTAP intern project goals of reducing food waste, while improving the efficiency of water, chemical, and energy usage, aligned well with the objectives of Seneca's company-wide recovery program.



"The fact that you aren't where you want to be should be enough motivation to change. The ones who are crazy enough to think that they can change the world are the ones who do. The MnTAP Internship program provides our company the competitive edge it needs by discovering processing wastes while promoting change to reduce operational costs. Always aiming to be environmentally friendly, this has reduced our water usage, chemical water treatment, product loss, electrical demand, and industrial silage waste."

*~ John Sigrist, Production Supervisor,
Seneca Foods*

Solutions

Continue Using Display Monitors to Adjust Color Sorter Efficiency

Seneca's production process utilizes multiple stages to sort out good quality product from the bad. An objective of the intern project was to rank the sorting stages and corresponding equipment, in terms of how much good product was being lost. From measurements of the different stages, it was found that high-speed, optical sorting machines referred to as Color Sorters, were responsible for the highest loss of good product. Improving control of the Color Sorters became a key project goal, with a target for a 50-50 ratio of good product to bad product in the waste stream from the Sorter. Maintaining this setting was accomplished by installation of display monitors on the production floor, which were updated daily to show each Sorter's performance. By displaying this information in highly-visible areas of the plant, Color Sorter technicians were able to identify and adjust each individual Sorter to the correct settings, if the data showed it was out of target. This implementation was determined to save 18 tons of peas by the end of pea production.

Fill and Close

One of the stages during processing at Seneca involves filling and closing cans of product. Potential improvements were identified at this

"fill and close" stage. These improvements consisted largely of increasing the height of existing guide walls and adding additional guide walls on each filler. The purpose of guide walls is to control product trajectories when transferred between different pieces of equipment, ensuring that product remains in the filling line and does not end up on the floor. Additionally, installation of conveyer belts is suggested to more effectively return spilled product into the fillers.

Defoamer Chemical Usage

A defoaming chemical is used throughout the plant as a means of controlling foam in water tanks. Water tends to build up foam as it circulates peas throughout the plant, which causes the water tanks to overflow. The current system provides inadequate control to the majority of the water tanks located inside the plant, and several tanks in the pea receiving dock. This has led to the regular practice of dumping pails of chemical straight into over-foaming water tanks, which is ineffective and contributes greatly to wasted chemical. With the addition of an improved dosing pump and new tubing to provide better foam control, the plant has the potential to save almost 15,000 lbs. of defoamer chemical per year.



Recommendation	Annual Reduction	Annual Savings	Status
Continue using display monitors	33 tons peas	\$33,000	Implemented
Increase height of guard walls	4.5 tons peas	\$4,500	Recommended
Add conveyer belts	8 tons peas	\$8,000	Recommended
Implement worker training	9,900 lbs chemicals	\$7,000	Recommended
Upgrade dispensing system	5,000 lbs chemicals	\$3,500	Recommended

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