

CUSTOMER CASE STUDY

Tyson Foods improves plant operations with AVEVA™ PI System™

Tyson Foods - www.tysonfoods.com
Industry - Food and beverage

Goals

- Gain real-time insights to optimize plant operations
- Reduce waste
- Comply with regulations

Challenges

- Lack of visibility into plant operations caused unnecessary waste
- Undetected production line flaws resulted in costly delays

Results

- Overall yield improvement of 0.1%, achieving ROI in the first six months
- Reduced waste and giveaway by 50%
- Saved 8 worker hours per day

Solutions

- AVEVA PI System
- Rockwell Automation FactoryTalk Historian

Tyson Foods processes 68 million pounds of meat per week in products ranging from breakfast sandwiches to corn dogs. It is the world's second-largest processor and marketer of chicken, beef, and pork. "Up until four years ago, we had zero visibility into plant-operations data, so decisions were being made without data to back it up," said Jonathan Reichart, senior engineer at Tyson. With the need for operational visibility, Tyson turned to Rockwell Automation's FactoryTalk Historian, powered by the AVEVA PI System, to make informed, data-driven decisions.

"In the Jimmy Dean sausage facility, the overall yield improvement after six months was 0.1%, which doesn't sound like a lot, but it adds up quickly to over 100 million pounds of sausage. That yield actually paid for the project itself."

Johnathan Reichert
Senior Engineer for Innovation, Tyson Foods

Using data to reduce sausage-chub giveaway

Tyson's Jimmy Dean sausage plant processes over 150 million pounds of sausage annually in the form of rolls, links, and patties. Machines carefully time the packaging of each one-pound roll. The company's goal is to be as close as possible to 1 pound without being underweight. However, fat percentage and meat temperature can affect flow rate, which means a variance in overages. Any overage is considered a giveaway, and packages that are too heavy or too light must be cut open and reintroduced into the line.

To reduce giveaway and waste, Tyson tagged 11 lines of its timed clipping machines, which package over 105 million pounds of roll sausage every year.

Before using the historian, powered by AVEVA PI System, Tyson would send a quality-assurance person out every 15 minutes to check the product line.

Once the process was automated, however, it could see weight by line, uptime percentage, and the number of saleable chubs (cylindrical sausage packages) produced. The data quickly showed that the target weight was set too close to 1 pound. As a result, packages were often underweight. Tyson realized that it was actually more efficient to raise the target weight because doing so would reduce rework and waste.

Insight into line prevent recalls

When Tyson's cooking facility received a deviation from the U.S Department of Agriculture for the sausage-cooking line, it was down for two full weeks to ensure that the process controls were in place for safe cooking. With process testing costing upward of \$50,000, and the average cost of a food recall totaling over \$30 million, Tyson needed to get the line back up and running quickly, but only if the right process controls were in place.

A bright future for the brand

Tyson has seen several benefits with the Rockwell Automation FactoryTalk Historian, powered by AVEVA PI System. Tyson saw an overall yield improvement of 0.1% in the first six months in the Jimmy Dean sausage facility, savings that paid for the improvement project. Tyson was able to reduce waste and giveaway within its Jimmy Dean facility. In addition, by automating quality-assurance reports, the company saved eight staff-hours per day and freed up employees to perform more impactful tasks. The corn dog facility was able to cut waste in half, saving Tyson about a million pounds of production.

What's more, real-time process alerts and the ability to set recipe verifications means that Tyson can avoid food recalls and protect the brand it has worked so hard to build.

For more information about AVEVA PI System
please [click here](#).