

Case history

Food manufacturer's new batching, feeding, and blending equipment saves more than just peanuts

When manual equipment for processing peanut butter wasted raw materials and required a lot of labor, the manufacturer installed automated processing equipment.

Tara Foods, Albany, Ga., makes peanut butter for retail and institutional markets. Kroger distributes most of the peanut butter under the Kroger brand name, but Tara Foods also makes peanut butter under various private labels. The food company's large customer base requires many different peanut butter formulations.

For production, trucks deliver several dry ingredients in bags on pallets. Ingredients such as stabilizers and powdered and granular sugars come in 100-pound bags and salts come in 80-pound bags. Forklift trucks move the pallets to a warehouse prior to processing.

Manual process equipment wastes materials

In the past, Tara Foods' production process required extensive labor and materials to maintain product quality. Workers had to manually weigh and pre-

blend minor ingredients before producing any peanut butter formula. Workers manually checked the feedrates and flowrates of all ingredients to maintain product specifications. Compensating for the system's inherent inaccuracies during production meant overusing some minor and major ingredients to maintain minimum requirements. The company's products must contain at least 90 percent peanuts to be called peanut butter.

"In the old process, there was potential to overuse peanuts to make sure we had enough," said Tara Foods' plant engineer Terry Grinstead. "And because we had manual batching, we had to do periodic flow checks."

Food company seeks automated process equipment

While looking for automated peanut butter production equipment, Tara Foods checked out several manufacturers'



Workers empty dry peanut butter ingredients into bag-break stations positioned above volumetric refill feeders for automated feeding and blending.

equipment. The company learned of one manufacturer's equipment through a trade journal and also got a recommendation from one of its equipment suppliers. In the final analysis, Tara Foods selected this manufacturer's equipment for batching, feeding, and blending. "The deciding factors were accuracy and flexibility," Grinsted said. Other manufacturers' equipment rounded out the production line.

Flexible, automated system handles many peanut butter formulations

After shopping, Tara Foods purchased and installed an automated peanut butter production line, including bag-break stations, weight-loss differential weigh feeders (each with a volumetric refill feeder), a continuous blender, and two weighbelt weigh feeders.

In operation, workers lift and dump bags of each dry ingredient into its individual bag-break station. The bag-break stations are located immediately above the volumetric refill feeders. The volumetric feeders mount directly above the loss-in-weight feeders' supply hoppers. These feeders continuously meter various dry

peanut butter ingredients to a continuous blender. The loss-in-weight feeders are slaved to two loss-in-weight weighbelt feeders that meter peanuts into the process. "So if you set up the line rate to say 'I want to run 10,000 lb/h of peanuts,' then the ingredients are automatically weigh-metered in to match that feedrate according to whatever formula is selected," Grinsted said.

An MD-II MFC multi-feeder controller governs the equipment. The controller allows Tara Foods to monitor quantities of available ingredients, store numerous peanut butter formulas, and change the formulas instantly through a few control panel entries.

Grinsted said, "Say we're running formula number 6, and we want to switch to formula number 15; a worker just punches in 'start formula 15' and the system will automatically switch."

The controller also permits time delays. Grinsted said "For example, if a worker says, 'I want formula 6 to run out in 10 minutes, at which time I want to switch to formula 15,' he punches that information in so the formula changeover can occur immediately." This instantaneous for-

A peanut butter manufacturer's previous process methods required manual ingredient weighing and preblending. A new, automated system cuts worker hours and labor costs.



Loss-in-weight feeders meter the peanut butter ingredients to an auger preceding a blender that combines the ingredients before milling.

mula change saves 15 to 30 minutes of production time several times daily. System information is recorded on periodic printouts.

A collecting auger moves all the dry ingredients from the batching system to a milling system. The finely ground mixture is deaerated, cooled, and packaged in glass or plastic jars or in bulk.

New equipment saves materials and labor

The food company's new automated processing equipment saves thousands of dollars per year by eliminating overweighments and reducing rework and labor. Workers no longer preweigh and preblend ingredients. Grinsted estimates the equipment's return on investment is approximately 36 percent, providing a payback in about 3 years.

Following nearly 8 months of operation, Grinsted said, "The new system has performed above initial expectations." Quality has improved due to formulation



A controller oversees the entire batching and feeding system's operation, providing quick formula changes and variable production rates.

consistency, overtime hours have been reduced, and overall production efficiency has increased significantly.

Grinsted added, "We've virtually eliminated manual flow checks to ensure formula accuracy because the system is self monitoring and can print readouts on material usage, each feeders' accuracy, and every formula change." The system has also run maintenance-free and has caused minimal downtime.

When potential customers visit Tara Foods today, they see a state-of-the-art, fully automated peanut butter blending system. The system enables Tara Foods to supply its customers with the highest quality product available. **PBE**

**Feeders, multi-feeder controller, and blender: Acrison, Moonachie, NJ
201/440-8300**