

EXCLUSIVE REPORT: FE SURVEY SAYS PACKAGERS REQUIRE MORE EQUIPMENT AUTOMATION

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Sustainable Plant of the Year New Belgium Brewing Co. Hits the Spot

Less hands-on, big-time savings

Flexible screw conveyors save maintenance and sanitation costs for peanut processor.

Located near Toronto, Nutco is one of Canada's largest peanut processors and one of the biggest suppliers of organic peanut butter to the US. The company specializes in packaging most of its production for sale under private labels but also supplies peanut butter in bulk to confectioners and bakers.

Not long ago, Nutco installed two bulk bag unloading systems for incoming peanuts and two flexible screw conveyors to transport peanuts and peanut fines within the plant. Besides improving efficiency, the equipment reduced manual handling and improved plant sanitation, says John Worrell, plant manager. "The flexible screw conveyors haven't needed any maintenance," he says, "and they require very little sanitation to speak of because they are completely enclosed."

Prior to the installation, peanuts were received in 110-lb. burlap bags. These were loaded onto skids and raised by a forklift onto a mezzanine, where they

were lifted two at a time by a jib crane and dumped into the surge hopper.

The bulk bag system has improved efficiency and saved more than \$100,000 per year in labor costs, says Worrell. "Previously, it would take two or three workers to unload the 110-lb. bags and load them onto the skids. Now, it takes one operator with a fork truck to load a bulk bag onto an unloader frame."

After testing, bags are fork-lifted onto a bulk bag discharger and unloaded into an 8-cu.-ft. floor hopper, from which the peanuts are transported by a flexible screw conveyor to a 10-cu.-ft. surge hopper that feeds the process line. The two bulk bag unloaders maintain a continuous flow of product to the roaster. Flexicon Corp. of Bethlehem, PA supplied the bulk bag unloading stations, hoppers and flexible screw conveyors. Each flexible screw conveyor consists of a rotating, stainless steel screw, housed in a 25-ft.-long polymer tube of 4.5-in. OD. The screw—powered by a variable speed, 5hp motor—draws in peanuts from the hopper and transports them at a 45° incline to the top of the surge hopper. From the hopper, the peanuts drop onto a 10-cu.-ft. gravity separator to remove any debris. Then the peanuts move through the roaster and the blancher.

About 80 percent of the peanuts are used for making peanut butter. The other 20 percent are removed from the hopper through a separate port to be sold as split peanuts or processed into chopped peanuts for crunchy peanut butter.

In the latter case, the peanuts pass through a granulator and vibrating screen to remove the fines. Fines drop through the screen into a 1-cu.-ft. hopper, where the material is moved by a 30-ft. long, 3.5-in. (OD) flexible screw conveyor to the bucket elevator that feeds the attrition mill.

Previously the fines were dropped into a drum set on a truck that was pushed away manually when the drum was full. "Now we have an automated process, with no manual handling," says Worrell. He estimates Nutco is saving \$20,000 a year in labor costs. ❖



► One of the two bulk bag unloaders installed at Nutco is shown here. Each has a 25-ft. (7.6 m)-long flexible screw conveyor and maintains a continuous flow of shelled peanuts to the gas-fired roaster in the background. Source: Flexicon.

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