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Bakers look to control costs by accurately and evenly applying seeds and toppings to baked foods.

BY SHANE WHITAKER

Toppings add visual appeal to a wide variety of baked foods from buns and breads to muffins to brownies to pretzels. Poppy or sesame seeds, oat flakes, dried onions, cheeses, sea salt, chocolate chips, fruit pieces and much more can be deposited to the top of these products and more to increase their eye appeal as well as to add value.

Whether they are known as toppers, seeders, dispensers or salters, a range of equipment is available to processors for adding ingredients to the surface of baked foods. Most machines manufactured to apply toppings are custom built by OEMs to meet bakers' specific needs.

CONTROLLING COSTS. The cost of toppings is driving the developments and innovations with regard to new topping equipment, according to Norman Searle, c.o.o. of Axis Automation Group, Waterloo, WI. "As the cost of these ingredients goes up, you want to be able to more accurately control how much of it is being applied," he said. In some situations, suppliers use photo eyes so its toppers know when to dispense product.

Axis is currently installing the final six toppers of what will be a total of 11 in which its systems apply farina to dough balls for a baking company. The ability of its topping units to very quickly stop and start delivery of the cereal grain generates little waste, saving the bakery on topping costs. "In this instance, we are using a proximity sensor

and an encoder on the pulley drive on the conveyor, so we know the speed at which the conveyor is running and where the product is because of the proximity sensor."

Its toppers use a rotating shaft, with varying degrees of narrowing based on the type of topping a company wants to apply. "If you are doing seeds, you would use a drilled shaft with ovals across the width," he said. "If you are applying chocolate chips or nut pieces, we offer a fluted design that will aggressively pull these pieces out of the hopper. You adjust the amount being dispensed by changing the rpms on the dispensing shaft."

The efficiency and the quality of application of the Burford Smart Seeder and topping units are what set its systems apart from the competition, according to Mark Hotze, operations manager, Burford Corp., Maysville, OK. "Our equipment gives very even coverage, great topping adhesion and is extremely cost effective relative to what else is available," he said. "If you look at the cost of the basic Smart Seeder or our conventional topping machine versus anything on the



▲ Bakeries can achieve significant seed and topping savings using this seeder, which features a better clutch actuating mechanism to precisely apply toppings.

BURFORD CORP.



▲ Custom shafts can be used on this topper to dispense a wide variety of ingredients from granulated sugar to oats and bran to poppy seeds.

AXIS AUTOMATION GROUP

market, these machines will pay for themselves in very short order.”

The basic concept of the Smart Seeder and its conventional topper is the same. They both have a hopper with a rotary mandrel, but what sets the Smart Seeder apart is the way it can be tailored to the individual pans, according to Mr. Hotze. “It has a different mandrel design and uses a better clutch actuating mechanism,” he said. “All those improvements add up to much reduced waste and better coverage on the product.”

While there is no sense in putting topping where it doesn't belong, many manufacturers install reclaim

systems that collect excess product from below the dispenser if needed. However, Randy Fielding, president and owner of Christy Machine Corp., Fremont, OH, said the company can install photo eyes if that is what customer requires. But it also reclaims surplus topping and puts it back through the dispenser, if the customer does not require the unit is precise in applying topping and is transported on a conveyor with openings to reclaim topping.

CONTINUING TO EVOLVE. Christy Machine custom builds all of its topping units to customers' needs, ac-

ording to Mr. Fielding. It has built units from 2 in. up to 12 ft wide, and with hopper bodies from 2 in. to 6 ft tall.


The changes that are taking place with regard to topping equipment are “evolutionary rather than revolutionary,” according to Mr. Hotze. “Bakers either want to apply a wider variety of toppings, or they want to do toppings that are outside our normal parameters, more powdery materials such as cinnamon sugar, powdered donut sugar or whole nuts,” he said, explaining recent topping trends.

Versatility and flexibility are two qualities processors continue to demand from all bakery equipment, including topping and seeding systems. “Bakers want to expand to different toppings,” Mr. Hotze said. “We have requests almost weekly to run different types of nuts and seeds. If it is any type of grain or powder, it seems they want us to give it a shot, and that continues to increase. Bakers are looking for ways to try and differentiate their product from others on the market, and putting on a new eye-catching topping is a great way to do that.”


Topping trends are always shifting with various toppings becom-

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78 TOPPING SYSTEMS



▲ A vacuum fill system is mounted on top of this dry material dispenser, which features a mesh conveyor and a reclaim hopper.

CHRISTY MACHINE CORP.

ing popular and then falling off for a while, according to Mr. Fielding “Lately, parmesan cheese is big,” he said. “Everyone is putting parmesan cheese on buns, rolls and other items.”

Processors also want either segregated or interchangeable hoppers to better control potential allergens, according to Mr. Hotze. “So instead of having one hopper for sesame seeds that also runs chopped almonds and wheat bran, they will actually have separate hoppers for each topping, and these will run through one set of controls,” he explained.

Burford also receives more requests nowadays to connect its topping units to the “bakery information highways” via Ethernet connections, Mr. Hotze added. By doing this, plant managers can access information such as whether the topper is running and what product it is running without actually having to go to the line to see what is going on.

Processors want data acquisition from their topping systems, accord-

ing to Mr. Searle. “They want to know how long this line has run, what kind of usage has been seen on the product and what faults have occurred, anything from running out of topping to the system being shut down for a period of time,” he said. “This information is all brought back into their main network.”

Bakeries also desire simple-to-operate topping equipment. With the high turnover some plants experience, they want straightforward machines for new employees. “Fortunately, operator interfaces have improved and are easier to use,” Mr. Searle said. “We have also designed a bilingual unit, which was very easy to do.”

Christy Machine also wants to ensure toppings will not degrade while sitting in the hopper. To this end, it makes insulated hoppers for toppings such as frozen blueberries and chocolate chips, according to Mr. Fielding. The company builds units where glycol runs through a series of canals in a double-walled hopper to keep toppings frozen until they get to the exit point.

RECLAIM SYSTEMS. Most companies use automatic refill systems to deliver toppings to the hoppers, according to Mr. Searle. When he first began selling this equipment, he said that approximately one out of every 20 topping units he sold included an automatic refill system, but today he estimated that more than half of new topping units feature refill systems.

“It’s an ergonomic issue,” Mr. Searle noted. “If you don’t have a way to automatically refill the hopper, an operator is going to have to climb up on a ladder and lean over the line to refill the hopper. And if you miss a beat, forget to refill the hopper and let it run out of topping, then you will have made product that is out of spec.”

Axis can inexpensively install a self-contained refill system that doesn’t require any external plant air to run, according to Mr. Searle. It au-

tomatically senses when the hopper needs replenished and will convey topping until the hopper is satisfied. "You can do that with a bin setting alongside the line, a bin under the line used to reclaim or you can pull from super sacks, but the bottom line is that it's unattended and there are no ergonomic issues."

Burford also is selling more refilling systems. "As bakeries automate, they have fewer operators around and their speeds increase, and they are using more topping as production rates increase," Mr. Hotze said. "Automatic filling stations that pull toppings from a tote or large use bin directly into the seeding hoppers are a great labor savings, and you don't have operators slinging 50-lb sacks of topping all day long. Also, they keep the levels consistent so you don't have to worry about running out. It just makes sense to go with an automatic filling station."

Nevertheless, as to reclaim systems, Mr. Hotze said Burford steers its customers away from using such equipment. "Think about what winds up in the catch pan underneath topping systems, especially in a pan environment," he observed. "You run a high risk for contamination, whether it is because you have water running in close proximity so you have an opportunity for mold growth in that reclaim product, or you have pans or a conveyor running overhead. You have a risk of contamination from either the bottom of pans or pan grease or dirt from the conveyor. There are a lot of reasons why reclaiming topping is not a great idea. To that end, we have tried to minimize the waste during dispensing of topping. We don't overseed or overtop and then try to reclaim the waste — we just don't waste it to begin with."

Christy Machine works with Vac-U-Max to develop automatic refill systems for its dispensing machines.

Maintaining a constant head pres-

sure in the hopper allows for more consistent application of toppings than if product levels vary from a high to a low. "We have designed our systems to keep a constant head pressure for that very reason," Mr. Searle added.

While the latest advances to top-

ping equipment may not be revolutionary, equipment manufacturers continue to improve upon their systems to allow processors to add value to their products by depositing new and interesting ingredients to the top of their baked foods. ■

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