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What's Trending in **Breakfast Foods?**

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Champions of Breakfast

While cereal sales remain flat and other frozen categories remain cold, hot and hand-held breakfast options are fueling consumers ... and processors.

By Kevin T. Higgins, Managing Editor, and Dave Fusaro, Editor in Chief

Back when dry cereal was considered the hallmark of breakfast, the category looked pretty boring. Sales at General Mills, Kellogg and Post would attest to that.

Mix in a newfound interest in fuel for the new day and a heaping helping of protein and suddenly the morning daypart has again become “the most important meal of the day.” The momentum is so powerful it’s even lifting the otherwise flat frozen food category.

Entrees, sandwiches and bowls are the new breakfasts of champions, or champions of breakfast, especially in the frozen category, where they have dethroned waffles and pancakes. Hot but handheld and portable are the watchwords in this suddenly thriving category.

“Echoing an evolving consumer lifestyle trend, portability is shaping breakfast food usage growth, with foods such as breakfast bars, breakfast sandwiches, supplements and energy bars driving usage uptake during 2006-2015,” says a mid-2016 report from Packaged Facts (www.packagedfacts.com).



Under Sara Lee and Hillshire Brands ownership, the Jimmy Dean brand evolved from sausages into full breakfasts. The brand continues to grow and has been a standout for Tyson Foods.

“Traditional breakfast staples, such as eggs, bacon and sausage, are undergoing slight to moderate usage declines, in part because use does not fit as easily into consumer demands for quick and portable breakfast solutions,” the report continues. “Cold cereal, another breakfast staple, has suffered from steeper declines: While it provides a quick, easy breakfast solution, it also suffers from lack of portability and may generally remain under pressure for high sugar content.”

The breakfast category’s growth spurt has caused some acquisition activity in the past couple of years. Breakfast bowls and burritos were among the high-potential products that emboldened Bob Evans to spin off its breakfast-heavy restaurant chain to concentrate on its food manufacturing under the name BEF Foods ... which only a few months later (September 2017) was bought in its entirety by Post Holdings.

Conagra bought Odom’s Tennessee Pride, a breakfast sausage maker that was just starting to penetrate the refrigerated breakfast sandwich niche. Likewise for Jimmy Dean, which was bought long ago by Sara Lee, folded into Hillshire Brands and then acquired by Tyson.

Kraft Foods (now Mondelez) was having such success in Europe with breakfast “biscuits” that it created the category in the U.S. when it brought its BelVita brand over

the pond. PepsiCo’s Quaker responded with similar Breakfast Flats in four flavors.

Not content with hot or cold cereals, Quaker went on to develop many granola bars, pastry-like Breakfast Squares and recently Morning Go Kits – whole grains, fruits and nuts in a clamshell. And it capitalized on something consumers already were doing with Overnight Oats – instead of having to cook oats, consumers can soften them by soaking in milk overnight.



Two of the pneumatic conveyors at Nutriom are tied to a mixer, with one conveyor breaking up egg powder and putting it into the mixer and the other transferring it out. Photo: Vac-U-Max

Even nostalgic Cream of Wheat, a B&G Foods brand, tried to modernize with To-Go Cups, including licensed flavor Cinnabon.

Jimmy Dean was just a maker of breakfast sausages when sold by the country singer/

actor to Sara Lee Corp. in 1984. As the new parent firm transitioned to Hillshire Brands, the Jimmy Dean brand explored other breakfast options and found huge success with Stuffed Hash Browns, frittatas, English muffin and croissant breakfast sandwiches, bowls and Simple Scrambles in microwavable cups.

The breakfast category's potential has drawn processors that have never been there before. Kraft Heinz via its Ore-Ida brand recently launched Just Crack an Egg, which combines ingredients such as potatoes, ham, cheese, peppers and other vegetables so that consumers can add an

egg and make a hot scramble in under two minutes in the microwave.

Even McCormick & Co. is testing the waters. Last year, the company used its spices and seasonings know-how to debut the Good Morning line, 18 clean-label products, including slow-cooker breakfasts, smoothie flavor-and-nutrition packets, breakfast topper ingredient add-ins and breakfast seasonings, such as apple cinnamon. They're meant to "boost the flavor and nutrition of breakfast staples and solve the consumer pain points of variety, healthy, convenience," the company says.



Racks of Salabao are staged for packaging after exiting a steam unit. The pork-filled pastry is sold in Thailand, Europe and elsewhere for breakfast or anytime-of-day snacking. Photo: Khao CP Co. Ltd.

THE FACTORY- COOKED BREAKFAST

Egg McMuffin-inspired breakfast sandwiches often are created by pork sausage manufacturers who transitioned into further processing. Adding a muffin, egg and other ingredients not only complicates production, it can make supply chain logistics a major headache.

Before it was acquired by Conagra, Odom's Tennessee Pride addressed supply chain issues with a software solution that integrated ERP and MES systems. Coordinating raw materials from three sausage factories to a sandwich assembly center was a challenge, but making a multi-component product also meant involving multiple ingredient suppliers. Add to that finished goods shipments to distributors, retailers and foodservice accounts, and the company was dealing with complexities that hadn't previously existed.

Advanced planning and scheduling software, forecasting programs and inventory accounting in ERP had to be integrated with real-time data collection of work in progress and other shop floor activity. Successful integration was critical to boosting yields, lowering scrap rates, reducing changeovers and eliminating out-of-stock situations, metrics that had a direct bearing on customer satisfaction.

Cereals used to be synonymous with breakfast. The grain used to make them may be puffed, flaked, sheeted or extruded, but perhaps the most interesting process is shredding. After grains of wheat are de-hulled and washed, they are softened in a cooker and partially dried before entering mills.

In the case of Malt-O-Meal, the rollers in the mill elongate a single grain to several inches in length, then feed them into depositors that race across rails suspended over a conveyor line, laying down a narrow bead of grain. The process is repeated by a series of depositors, building up the beads into the lattice of wheat fibers familiar to shredded wheat fans. The mass is then cut into bite-sized or bowl-sized pieces before being conveyed into a tunnel oven.

Not only is cereal no longer the traditional breakfast, breakfast itself is under attack from the snacking trend. That shift is evident in all cultures.

In Thailand, the norm is seven small meals a day, according to Thammavit Srikrekkrit, vice president of Khao CP Co. Ltd., Thailand's largest food processor. Rice is an all-occasions dish, he says, and many of the ready-to-eat products the company produces at half a dozen production facilities are consumed morning, noon or night, depending on individual preference.

At the company's Chanburi, Thailand, plant, three highly automated lines churn out more than 200,000 servings of Salabao a day, six days a week. Chunks of dough are automatically loaded into a forming machine, where either minced or barbecued pork is enrobed in dough and transported to a proofer, then to a steamer instead of an oven. From the front of the line to final packaging, the process takes 3 1/2 hours, Srikrekrit says.

Ethnic dishes like Salabao are finding a receptive audience in North America, carving out a niche beside mainstays like eggs. Whether they are producing Salabao or powdered eggs, food processors are improving their processes with equipment upgrades featuring better hygienic design.


An example is Nutriom Ova Easy, a family-owned processor in Lacey, Wash. Better sanitary design might have helped the firm avoid a 2014 recall of its dried egg products for possible salmonella contamination, although product quality was the real driver for a conversion to pneumatic powder transfer. Grinding at the edges of the augurs of screw conveyors were degrading particle size, explains COO Leonardo Etcheto.

"There were a lot of moving parts (to the screw conveyors), and that meant there were more things that could go wrong,"

says Etcheto. "It was a difficult system to clean and to perform maintenance." Occasional oil leaks from gearboxes were a contamination source, and plastic components held potential to create shavings that would not be flagged by a metal detector.

Nutriom developed a dehydration technology that crystallizes the egg to lock in flavor and negates the need to add preservatives or other additives. Transferring the shelf-stable crystals from dryers to mixers to packaging presented the potential for contamination, prompting a conversion to pneumatic conveyance in 316 stainless steel tubes.

After evaluating several alternatives, Etcheto selected Vac-U-Max (www.vac-u-max.com) for his first pneumatic conveyor. The Belleville, N.J., vendor has a wealth of breakfast-production background, counting Kellogg and General Mills among its client base, but a more compelling selection reason was its ability to fabricate systems for low-ceiling spaces.

When clearance is limited, Vac-U-Max modifies filter lids to fit the space and uses compressed air to generate vacuum. For a 10-ft. vertical transfer point, it used a more efficient vacuum pump. Six pneumatic systems ultimately were installed. 

What's For Breakfast in 2018?

How trend forecasting and wireless technology work together to ensure safe food.

By Jay Joseph McEvoy, Cooper-Atkins, Director of Food Processing-North America

Bacon isn't healthy. Sushi isn't "safe." Every marketing survey completed in the past 10 years has clearly stated that "Healthy" is a key attribute in consumer's food choice decision making. A recent survey (DSM Food Specialties) confirms that belief and offers the following statistics:

- 69% of Consumers prefer Healthy over "cheap" foods.
- 65% of Consumers prefer Healthy over "tasty" foods.
- 65% of Consumers prefer Healthy over "indulgent" foods.

Despite these insights from the general consumer, both foods are mainstays of the average American's restaurant menu

experience. How can this contradiction be true?

The most successful food companies in the world have figured out a little secret. Consumers don't always eat what they "say" they want. Apparently - as in politics - the surveys are often wrong.

FORECASTING FOOD TRENDS - SCIENCE OR MAGIC?

Every global QSR multi-unit powerhouse (e.g., McDonald's, Burger King, Yum Brands, etc.) share something in common with the world's largest food processors (e.g., Nestle, Tyson's Conagra, etc.).

And it's not just that they all use real time, cloud-based temperature and process

measurement systems to ensure quality and safety.

Every one of these industry giants has a trend-predicting member on staff. Some have more than a few of these crystal ball-gazers trying to help propel a company to the top of the food-trend ladder. The top global players in the industry have corporate chefs in senior positions helping to predict what next year's consumers trends will be.

So, how does a corporate chef predict what tomorrow's customers are actually going to buy?

It all starts at the top. Most enduring food trends begin in high end, white tablecloth restaurants. These tier-one eateries tend to be coastal-based or in major cities. The best and most popular trends then migrate to the fast-casual chains, (e.g., Olive Garden or Cheddars). From there, only the best of the best menu items rise to the top quick serve chains. (e.g., Panera) Finally, after perhaps a year or more, the big food processors will begin manufacturing versions for supermarket consumers.

Obviously, the sooner a company can recognize the next big global hit the better!

EMERGING MENU ITEMS

So, what are trend-setting, cutting-edge restaurant chefs putting on breakfast menus in 2018?

According to Food & Wine Magazine, almost 70% of high-end chefs are saying that "international inspired" breakfast items are a very hot trend.

Menu items such as South American Chorizo Sausage Eggs or Coconut Milk Pancakes are customer fan-favorites. Vegetable-centric breakfast items such as Avocado Toast or Exotic fruit (e.g., Acai sorbet) bowls with granola are more of an emerging trend. "Grab-n-Go" bowls of all kinds are making the jump from one restaurant tier to the next on the menu trend ladder.

Quaker Oats has cracked the code as to what consumers really want vs. what they say is most important. When a consumer says healthy menu items matter more to them than tasty, less healthy options, perhaps they mean menu choices that are more wholesome, rather than nutrient rich.

FOOD SAFETY AND BRAND PROTECTION

Quaker knows that safety is first and foremost. Every week there is a newsworthy foodborne-related outbreak that triggers a national recall of produce or prepared foods.

What You Really Need to Know About Pneumatic Conveying Systems

10 factors manufacturers use to design pneumatic conveying systems.

By Vac-U-Max

Food processors are experts at producing food products, chemical manufacturers are experts at developing chemicals, pharmaceutical companies are experts at making drugs, and pneumatic conveying manufacturers are experts at moving bulk solids. Just as it is not necessary to become an expert on how to build a vehicle when purchasing one, it is also not necessary for users of pneumatic conveyors to become experts at vacuum conveying to incorporate them into their processing line. While it is a good idea to have a broad understanding of how pneumatic conveying systems work, no pneumatic conveyor manufacturer will ever ask a customer if they need a dense phase or a dilute phase system. There are however a host of other questions a conveyor manufacturer will ask about a process, and the materials used in

that process, that will aid them in designing a system with the necessary components to provide a solution that integrates into a customer's process.

MATERIAL BULK DENSITY

The bulk density of a material is one of the first indicators of design in terms of sizing various system components such as vacuum receivers and air sources. Bulk density helps determine how many cubic feet per minute (CFM) of air is needed to move the material through the convey line. Generally speaking, materials with bulk densities below 55 lbs per cubic foot but above 25 lbs per cubic foot are fairly easy to convey, while heavier materials require more power and larger vacuum receivers. Fine powders with low bulk density, such as fumed silica, present their own set of challenges and may require

more filtration and therefore larger vacuum receivers than medium density powders.

CONVEYING DISTANCE

Bulk density, while one of the most important factors in sizing a system, is not the sole criterion used to determine components.

Another important factor in sizing and determining the type of system needed to convey bulk solids is the distance material is traveling. In pneumatic conveying the more tubing you put in the system, or the further the conveying distance, the bigger your vacuum pump gets because it takes more airflow to pull (or push) the air through the tube.

In dilute phase systems (material entrained in the airflow) when powder must travel more than 300 feet, the system would use positive pressure to push the material in the tube, rather than using vacuum, as a more economical solution

One of the advantages of pneumatic conveying is that moving products vertically is calculated the same as moving them horizontally--in linear feet. However, each 90 degree sweep in the system equals 20 linear feet; thus if you are moving material horizontally 110 feet and vertically 110 feet with four 90-degree sweeps, then the conveying distance is 300 feet.

CONVEY RATE AND BATCH CONVEYING

In addition to bulk density and distance

determining the size and type of the conveying system, the rate of material moving through the system is an important factor considered when designing a system, as well as whether the process is a continuous or a batching operation.

While most pneumatic conveyor operations work via cycles of convey and discharge, a batching operation works differently and can have a considerable effect on the size of the system. An example of this would be when a processor wants to move 5000 lbs of powder per hour into a mixer, but needs to move the batch into the mixer within 15-minutes. Although the 5000lbs cycles only once per hour, because the rate of transfer is higher during that 15 minutes, it is actually moving at 20,000 lbs per hour; thus, requiring a more powerful vacuum source.

Dilute phase pneumatic conveying systems can transfer up to 25,000 lbs per hour via vacuum. For higher rates, a positive pressure source replaces the vacuum pump.

MATERIAL CHARACTERISTICS

Beyond a material's bulk density, an understanding of how particular substance will behave under certain conditions is essential when designing a vacuum transfer system. Most often customers know whether their particular material is free flowing, sluggish

Should the H2 Classification be Retired?

Technical experts ponder whether the H2 classification is still needed for food grade lubricants.

By Clarion Lubricants

In the 1970s, the United States Department of Agriculture (USDA) created the non-foods program for chemicals, including lubricants, used in food and beverage processing facilities. A “white book” listing of lubricants approved for incidental food contact was developed. The USDA exited the publication of their “white book” listing in 1998. Soon thereafter, NSF International took up the process of evaluating products and publishing the White Book, registering products against the historic USDA classifications. Since then, InS Services (UK) Ltd. has also begun registering products for use in food processing plants.

The classifications for lubricants for use in food processing plants are H1, HT-1, H2, HT-2, H3, and 3H. The products are designated for use as follows:

H1 – Lubricants for applications where incidental contact with food has the potential to occur. The concentration of H1 lubricant in food is 10 ppm (0.001 %). Above that concentration, the food is considered to be unsafe for consumption. The base fluids, additives, and thickeners (for greases) used to formulate H1 lubricants must be rated HX1, as specified in 21CFR178.3620 (mineral oil), 21CFR178.3530 (synthetic hydrocarbon oil), and 21CFR178.3570 (additives and grease thickeners).

HT-1 – Heat transfer fluids for use in applications where incidental contact with food has the potential to occur. Like H1 lubricants, the concentration of an HT-1 fluid is limited to 10 ppm in the food with which it comes into contact.

H2 – Lubricants for use in food processing plants where no contact with food can occur. The composition of H2 lubricants is limited to materials that are not classified as carcinogens, mutagens, or teratogens, and must not contain heavy metals (antimony, arsenic, cadmium, lead, mercury, and selenium).

HT-2 – Heat transfer fluids for use in applications where no contact with food is possible. These materials are similar to H2 products in that although they can be used in food processing plants, no contact with the food being processed can occur.

H3 – Products consisting of edible oils and certain mineral oils that are considered to be generally recognized as safe (GRAS). H3 lubricants are typically used to clean and prevent rust on hooks, trolleys, and other equipment. These materials must be cleaned off the equipment before contact with food.

3H – The 3H classification covers release agents for direct contact with food. It consists of white mineral oil, silicone fluid, petrolatum, and other products. Those products are allowed to come into direct contact with food. They are used in the production of bread, cookies, processed meats, etc. They are also used as coatings on fruit, vegetables, and eggs.

Materials classified as HX1 or HTX1 are suitable for use in H1 lubricants and HT-1 heat transfer fluids, respectively, but

with limitations on the concentration at which each can be used. Those materials and their concentration limits are listed in 21CFR178.3620, 21CFR178.3530, and 21CFR178.3570.

In decades past, industrial lubricants were formulated with API Group I paraffinic mineral oils and poorly refined naphthenic mineral oils, and some products contained lead-based additives. The H2 classification was useful then to keep those types of products out of food processing facilities. Today, base oils are highly refined, with mainly API Group II base oils or synthetic fluids used to formulate industrial lubricants. Even naphthenic base oils are refined to remove the polycyclic aromatic hydrocarbon compounds that are known to be carcinogenic. And additives based on lead have not been used since about 1980. Antimony is still used in some lubricants, but typically heavy-duty mining lubricants, not the types that would be found in a food processing plant.

At recent technical conferences (ELGI, NLGI), working groups on food grade lubricants have discussed whether the H2 classification is still needed. In many cases, customers see the NSF logo on product information sheets or product labels and assume it represents an H1 product, when the product may actually be classified H2.