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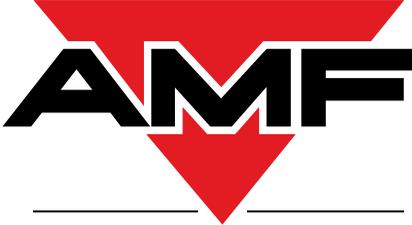
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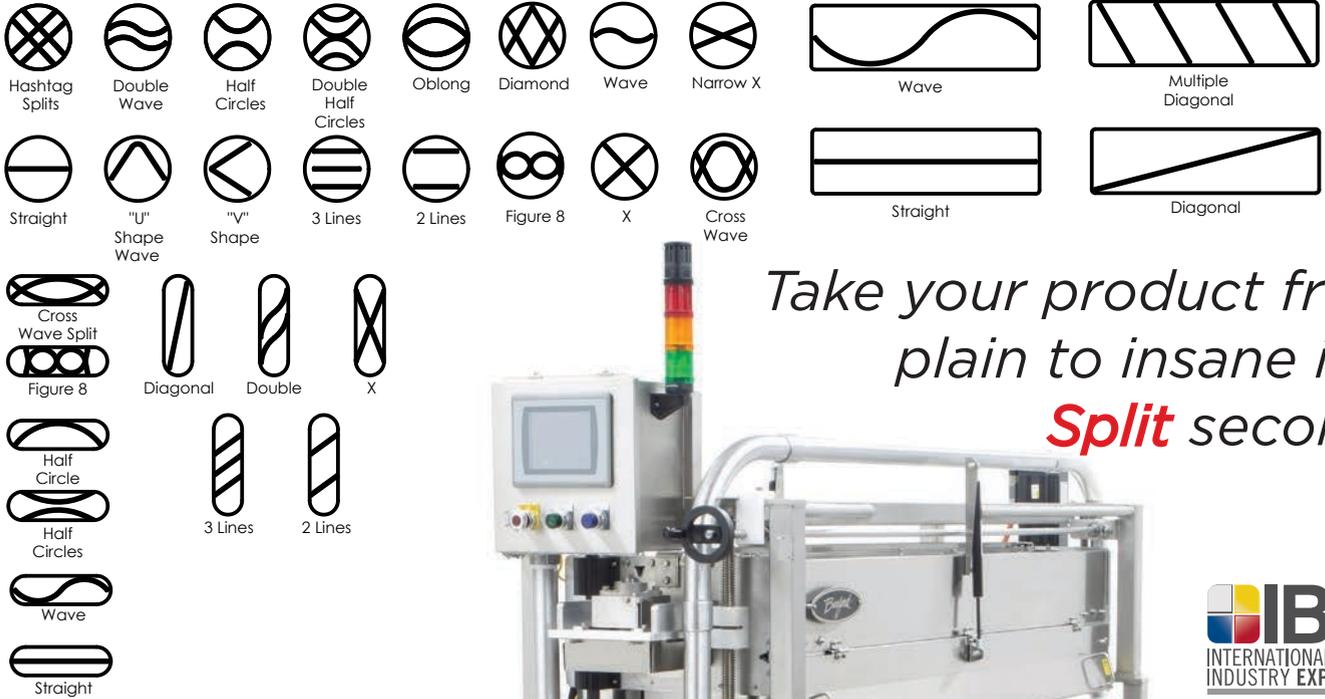
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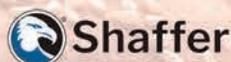
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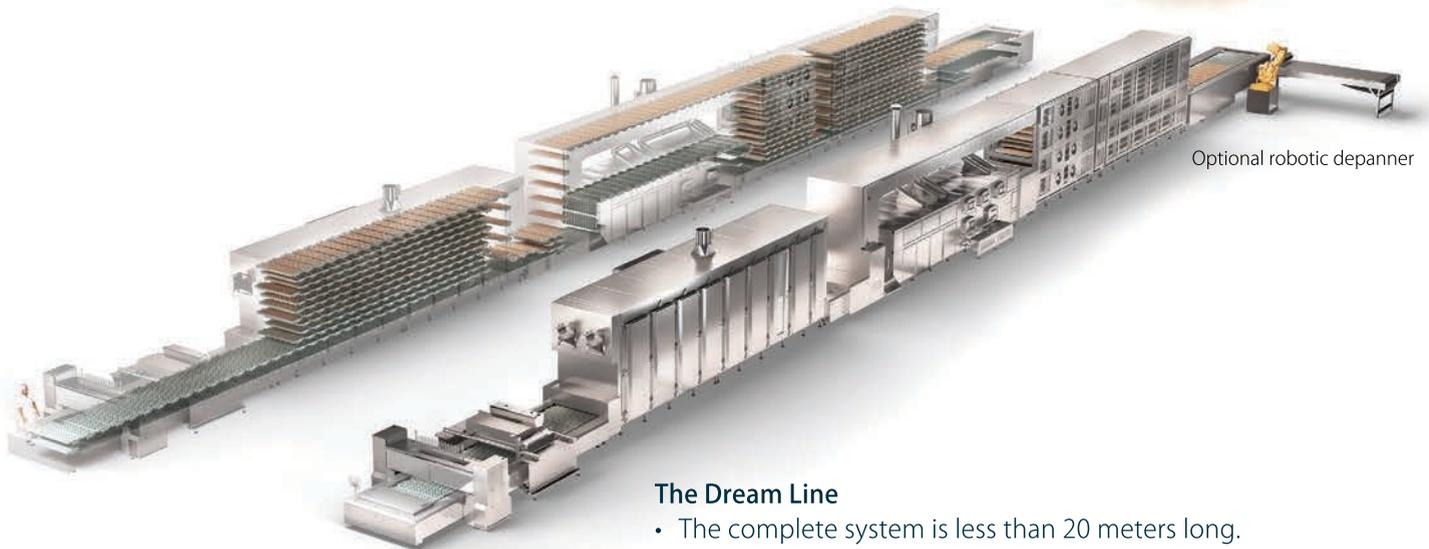
Cover: Running one of the few sugar wafer lines in the US, Bud's Best Cookies is able to expand its product offerings and keep up with seasonal demand.

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“ Whether it’s people, equipment or the changing market, we are now on different footing. ”

32 Al Cason, Bud's Best Cookies



The collegiality of baking

I was visiting with a baker about a speaking opportunity at an upcoming conference. He explained to me the topic of the speech, the size of the conference, even the size of the room. And he described this particular gathering and its attendees as “collegial.” He said it’s a place where bakers and suppliers come together and, for a few days, put competition aside and celebrate their commonalities.

That word struck a chord with me because it’s the very one I used to describe the baking industry when I first joined Sosland on our sister publication *bake* magazine. I appreciated how artisan bakers supported one another through idea sharing, and it often made for great editorial content. After all, for an independent retail shop, another bakery outside a few miles’ radius might not be considered competition.

Then I joined *Baking & Snack* and the commercial side of the industry, and I erroneously assumed all that would change. I couldn’t have been more wrong. Sure, there are trade secrets and proprietary information that ensure healthy competition in the marketplace. That’s what makes the world go ’round.

But there are certain settings where the curtain comes down, and competitors — whether they’re bakers or suppliers — become colleagues, perhaps even friends. In groups such as the American Bakers Association, BEMA, the American Society of Baking, CASBA, SNAC International, Retail Bakers of America ... the list goes on ... members of this industry come together to learn from one another and figure out how to tackle challenges in automation, workforce, sanitation and more.

That will only intensify in Las Vegas this fall at the

International Baking Industry Exposition (IBIE), to be held Sept. 7-11, when the industry comes together for one of the largest bakery tradeshow on the planet. IBIE — Baking Expo to you vets — epitomizes the collegiality of baking on every level.

Of course, every exhibitor will vie for the attention of the thousands of attendees walking the show floor, but at events like the All-American Tailgate, the networking will know no bounds ... or borders. The Expo also has partnered with other shows like iba, held in Munich, to host virtual reality bakery tours, and it will welcome international trade groups including the Taipei Bakers Association.

Artisan bakers can discover how to scale up, and wholesalers can learn a thing or two from the craft shops on what the trendiest consumers want most from their food. Everyone in the industry will have a chance to network and ideate, all the while getting down to the business of baking.

IBIE is coming, and as the show’s official media provider, *Baking & Snack*, in partnership with several other Sosland publications, will be the conduit to all the information you’ll need to navigate the show. Before you get there, be sure to pick up a copy of our *IBIE PreShow Guide*, which also published this month. It covers the industry from every possible perspective and is sure to get you in the right mindset as you head to the show.

The collegiality of baking is what makes this industry so special, and I can’t wait to see it in action. I hope you learn from your colleagues and competitors ... and I hope that doesn’t stay in Vegas.

— Joanie Spencer, editor
jspencer@sosland.com



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Consumer insights reframe snacking for Mondelez

Deerfield, IL-based Mondelez International's updated consumer research methodology is driving innovation throughout the food producer's portfolio. Dirk Van de Put, chairman and CEO, outlined how new learnings are affecting the company's approach to innovation.

The core of the consumer research is a "snacking database" from interviews with approximately 170,000 consumers. The database allows product developers to evaluate how consumers snack across different occasions and emotional or functional needs.

"There's a number of discoveries," he said during a recent presentation. "First of all, it makes a hell of a difference for [consumers] around the world if they're alone or they're in a group. It makes a hell of a difference what time of the day it is. And the third big factor is how they feel. So, some of the learnings we have is that the same consumer might eat very healthy in the morning but very indulgent at night depending on how they're feeling."

The research also has reframed how the company views its competition. With regard to the Oreo brand, Mr. Van de Put said it is not another biscuit brand that the company is competing with in the after-school snack occasion.

"The competition is gummy bears here in the US," he said. "That would not have been immediately our thinking. It helps us fine-tune our communications, it helps us understand our innovations and it helps us understand what our competition is."

The fruits of these efforts may be seen in the results for Mondelez's Oreo and Cadbury brands, which are now growing at or close to double-digit rates. Mr. Van de Put said he believes such momentum is sustainable.

"We found a way to better understand how to position the brands toward (the) consumer at the right moment and then accompany that with good communication," he said. "On top of that, I think we've discovered that we can adapt the local range or the local flavors much better than we've done in the past."

In China, for example, the company has introduced Oreos featuring wasabi and spicy chicken flavors.

— **Keith Nunes, Food Business News**

Pepperidge looks to 'unleash the growth' in Goldfish

One of the goals at Campbell Soup Co., Camden, NJ, is to continue the momentum in its Pepperidge Farm business. To achieve that objective, the company plans to "unleash the growth" in its Goldfish brand in four ways, said Carlos Abrams-Rivera, senior vice-president and president of Campbell Snacks.

Mr. Abrams-Rivera said Pepperidge will renovate its core, bring new packaging formats to stores, uncover new ways to inspire children to play with Goldfish and extend into areas outside the core demographic. As Pepperidge looks to renovate the core Goldfish brand, Mr. Abrams-Rivera stressed that the company is attacking its mission from a place of strength.

"We know we have a baked cracker that has whole grains and real cheese, and we have now switched our colors to be made from plants," he said. "But we also believe there's even more opportunity as we go forward, inspired by our single mission, the idea of actually bringing real vegetable solutions into our Goldfish platform. This is something that is part of our bringing new capabilities into Campbell Snacks."

— **Eric Schroeder, Milling & Baking News**

DowDuPont merging two business units



Heinzl

DuPont Nutrition & Health and Industrial Biosciences, both business units within the DowDuPont Specialty Products Division, will combine into a \$6.2 billion business division called Nutrition & Biosciences, DowDuPont, Midland, MI. Nutrition & Biosciences will be active globally in specialty food ingredients, dietary supplements,

pharmaceutical excipients, household and personal care, animal nutrition, and biotechnology fields.

Matthias Heinzl, who was president of Nutrition & Health, will become president of Nutrition & Biosciences, which will be based in Copenhagen and have more than 10,000 employees, 70 manufacturing sites and 25 innovation centers. Combined, Nutrition & Health and Industrial Biosciences had \$6.2 billion in revenue in 2018.

Nutrition & Biosciences will serve customers through three market-driven platforms: food and beverage, health and bioscience, and pharma solutions. The new business division will benefit from complementary expertise and skills in the areas of food enzyme production, human and animal microbiome science, bioprocess engineering, and research and development, according to DowDuPont.

— **Jeff Gelski, Milling & Baking News**

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BEMA announces 2019 board executives

At its annual convention, held in June in Vail, BEMA named Mark Hotze, vice-president, Corbion, Lenexa, KS, as the association's 2019-20 chairman of the board. Mr. Hotze took the gavel from Paul Lattan, publisher, *Baking & Snack* magazine.

Mr. Hotze plans to further enhance partnership with the American Bakers Association and support the Grain Foods Foundation in its launch of the industry's checkoff program.

Jim Warren, vice-president, Exact Mixing, Reading Bakery Systems, Robesonia, PA, was appointed as third vice-chair on the executive committee. The executive team also announced the appointment of Delia Justable, global sanitary compliance manager, Forbo Siegling, Huntersville, NC, to the

association's board of directors. Additionally, Jay Hardy, national sales director, J&K Ingredients, Paterson, NJ; and Mike Day, president, Banner-Day, Saginaw, MI, were awarded a second term on the board of directors.

The 2019-20 BEMA executive committee includes Mr. Hotze as chairman of the board; Rick Hoskins, president, Colborne Foodbotics, Lake Forest, IL, as first vice-chair; Tim Cook, president, Shick Esteve, Kansas City, MO, as second vice-chair; and Mr. Warren and Mr. Lattan as third vice-chair and immediate past chair, respectively.



Rich Hoskins receives lifetime achievement award

BEMA named Rich Hoskins, former president of Colborne Foodbotics, Lake Forest, IL, as the 2019 recipient of the Fred Springer Lifetime Achievement Award.

Michael Cornelis, vice-president, international sales, American Pan, a Bundy Baking Solution, presented Mr. Hoskins with the award, which was renamed in 2018 after Fred Springer, president, Burford Corp. The honor is bestowed on a BEMA member who is recognized for outstanding contributions not only to the association but also the baking industry.

Mr. Hoskins was responsible for one of the association's biggest changes: opening its annual convention and winter summit to baker attendance. BEMA's chairman of the board in 2005, Mr. Hoskins worked diligently to put the needs of the association and its members front and center.

"He wasn't afraid to do the hard thing, as long as it was the right thing," Mr. Cornelis said. "That's the kind of leader Rich is."

At Colborne Foodbotics, Mr. Hoskins pioneered the concept of high-speed ultrasonic cutting for commercial bakery production as well as full-scale robotic integration into production lines.

Context becoming critical for food additives

Conflicting science, lack of context and inconsistent regulations around the world all contribute to consumers' negative perceptions of food additives and artificial food ingredients.

At IFT19, the Institute of Food Technologists' annual meeting and food expo held in June in New Orleans, James Coughlin, PhD, CFS, president, Coughlin & Associates; Martin Slayne, PhD, president, Slayne Consulting; and Tony Flood, senior director of food ingredient communications, International Information Council (IFIC) Foundation, detailed some of the misperceptions around these ingredients and how the food industry could move the conversation forward.

According to a consumer study by IFIC Foundation, 50% of consumers are concerned about chemicals in food, and 30% are concerned about food additives. While the organization did find that concern about food additives has declined over the past few years, the concern persists. This is largely because consumers are afraid of what they don't understand, Mr. Flood explained.

"What we're presenting to consumers is unfamiliar to them," he said. "And it's our job to change that."

Science without context seemed to be a major culprit in disseminating confusion around additives, and many other ingredients. It's important to understand the difference between hazard and risk, Dr. Slayne said. A hazard is an entity that has the potential to cause harm; risk refers to the likelihood that a hazard would cause harm, which is dependent on the dose and how it's consumed. This distinction often trips up consumers and the media.

"We need to communicate the full context with all the stakeholders," he said. "If you only communicate the hazard piece, you're missing part of it and confusing people."

When it comes to dispelling misinformation about ingredients like additives, providing consumers some context is critical.

"For the general consumer we have to put risk into context," Mr. Flood said. "Balance out messages with a benefit message. Address conflicting information with care and attention to the consumer and realize that science doesn't always sell."



Gonnella

In Memoriam

Robert Gonnella, longtime director and former president of Gonnella Baking Co., Schaumburg, IL, died May 16. He was 84 years old.

Mr. Gonnella was born in Chicago and graduated from John Carroll University. He began his 42-year career at Gonnella Baking in 1957, serving as a director for more than 29 years and as president for more than 5 years. He retired in 1999.

Arnott's begins construction on \$45 million warehouse

Arnott's Biscuits, Sydney, a subsidiary of Campbell Soup Co., Camden, NJ, invested \$45 million (A\$65 million) into a new automated warehouse that will streamline the company's supply chain in Western Sydney. The cookie maker noted that the new site will provide the flexibility needed to quickly respond to evolving customer and consumer demands, while also improving product quality, efficiency and onsite safety. The new warehouse will increase the cookie maker's storage space to 28,000 pallets.



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People

Seth Weis was appointed senior vice-president of business development at the **Hain Celestial Group**, Lake Success, NY.

Tippin's Gourmet Pies, Kansas City, KS, named **Jim Antrup** as vice-president of sales and marketing.

AMF Bakery Systems hired German-trained master baker **Ralf Hartfiel** as regional account manager for the western US and Canada.

Christina McDermott joined **BakeMark**, Pico Rivera, CA, as national accounts manager.

Paul Claro was named the new president and CEO of **Douglas Machines Corp.**, Clearwater, FL, replacing the retiring **David Ward**.

Hinds-Bock, Bothell, WA, a Middleby Bakery company, promoted **Rod Gregg** to executive vice-president of sales and marketing.

JLS Automation, York, PA, named **Pete DeSuno** as regional sales manager, north central region for the US and Canada.

WP Bakery Group USA, Shelton, CT, named **Patrick Nagel** as key account sales manager.

IN BRIEF

Biscuit International, Paris, reached an agreement to purchase **Aviateur**, a private label manufacturer of bakery products based in Broek op Langedijk, The Netherlands.

KP Snacks, Tesside, England, opened a \$7.5 million, 25,000-sq-ft production site for its Pom-Bear and Hula Hoops Puft brands.

Krispy Kreme Doughnut Corp., Winston-Salem, NC, announced that a first-of-its-kind store will open in Times Square in early 2020. The new store is expected to serve more guests annually than any other Krispy Kreme location in the world.

Mondelez International, Deerfield, IL, acquired **Perfect Snacks**, Sorrento, Valley, CA, a manufacturer of refrigerated snack bars.

Sara Lee Frozen Bakery, Oakbrook Terrace, IL, opened the Kitchens of Sara Lee R&D center at its headquarters where it will bring the company's marketing and product development teams together to focus on new product lines.

TruFood Mfg., Inc., a Pittsburgh-based contract manufacturer of private label nutrition and protein bars, was acquired by **AUA Private Equity Partners**, a New York-based private equity firm.

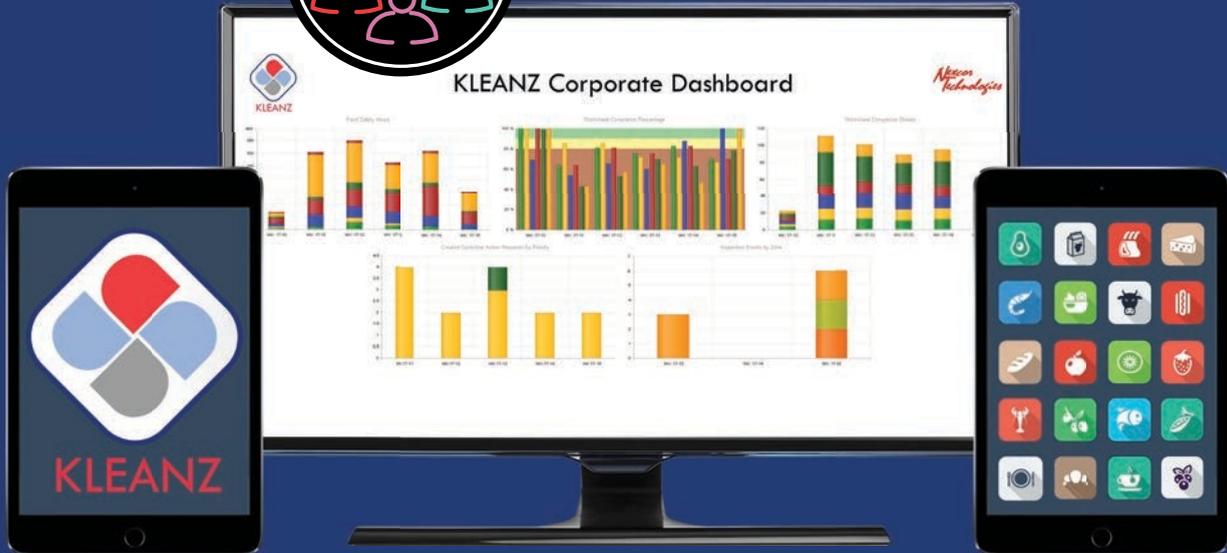
Rademaker Group, Culemborg, The Netherlands, acquired **Divardy Engineering**, a bakery equipment manufacturer based in Nieuwegein, The Netherlands.

Dawn Foods, Jackson, MI, acquired an **Ardent Mills**, Denver, CO, ingredient mix facility in Burlington, Ontario.

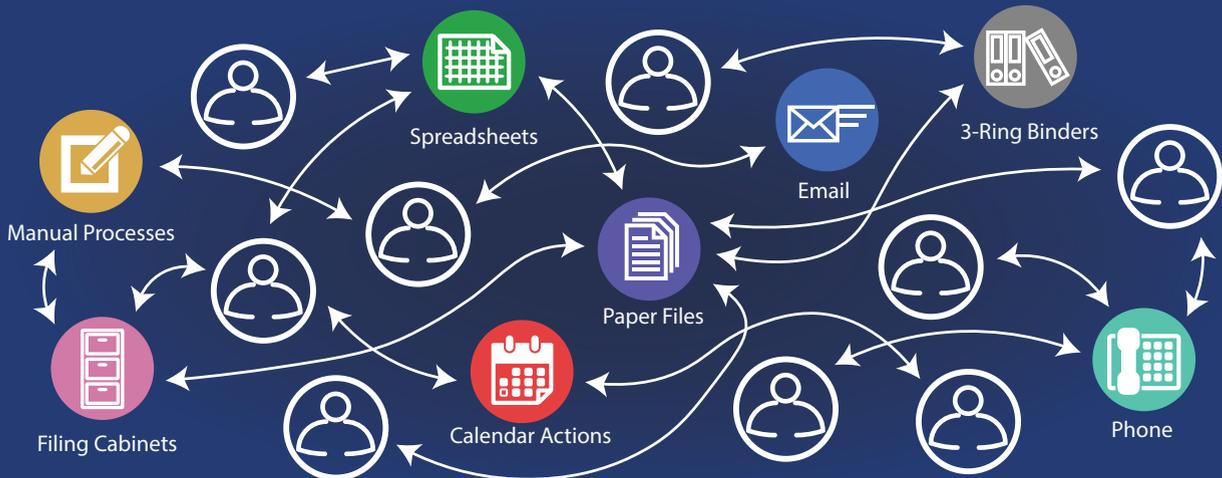
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farm-to-fork FOOD SAFETY

Preventing cross-contamination of allergens requires diligence at all levels of the food supply chain.

by M. Hikmet Boyacioglu, PhD

One of the most important ways to keep food safe is to avoid cross-contamination. Harmful substances or disease-causing microorganisms can be transferred from one surface to another by hands, food-contact surfaces, sponges, cloth towels, equipment, storage and utensils.

Food manufacturing environments present many food safety hazards. “Potential contamination can come from pests and pesticides, as well as proliferation of bacteria from temperature abuse and condensation,” said Stephanie Lopez, vice-president of operations, AIB International. “For products that are not fully encased in packaging during transport and storage, the risks increase to include allergen cross-contact and foreign-matter introduction.”

As with mitigating any type of risk in a manufactur-

ing environment, employee education is paramount, according to Ms. Lopez.

The growth of large-scale production of artisan and niche baked goods has also brought about new challenges, including sanitation and cross-contamination concerns. “Each bakery deals with a unique and diverse range of ingredients from flour, wheat and yeast to sugar, cream, icing, chocolate and often nuts,” said Tim Hendra, director of sales, Neogen Corp. “With each additional ingredient comes new quality assurance challenges.” And low-moisture foods and ingredients that haven’t traditionally been part of the discussion create opportunities for unintended food allergens and salmonella.

“Today under the US Food & Drug Administration’s Food Safety Modernization Act (FSMA), there are many

Food safety and sanitation are front of mind at Northeast Foods’ Automatic Rolls of North Carolina.
A.M. King





Clear separation of ingredients and processing will help prevent cross contamination
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items to examine for a robust food safety plan,” said Gina Reo, president of Quality Assurance Strategies and advisor to the American Bakers Association. “When you begin to review steps needed to mitigate risks, it is best to approach thinking from an entire supply chain perspective, from farm to fork. Concentrating on one potential cross-contamination or contact is a strategy that can have significant impact on your preventative controls minimization strategy,” she said.

According to Ms. Reo, a robust supply chain program review should include assessment from the farm or source, as well as supplier verification of activities and transportation before material enters a manufacturing facility. And don’t forget packaging. “Appropriate verification activities that are consistent with the food that you are producing, including allergen controls, chemicals, microbiological, radiological or physical contamination are vital considerations,” she said. Transportation verification should not be overlooked as it can be a vulnerable moment for cross-contact.

Avoiding tainted foods

Food contamination happens when something gets into food that shouldn’t be there. While there are many scenarios that might cause this, most fall under one of three categories: biological, chemical or physical. Biological contamination is when bacteria or toxins contaminate food; this is a common cause of food poisoning and food spoilage. Chemical contamination occurs when food meets chemicals and can lead to chemical food poisoning. Physical contamination happens when objects, like glass or human hair, contaminate foods. Sometimes when a food is physically contaminated, it can also be biologically contaminated because the physical contamination might harbor dangerous bacteria.

Producers also need to focus on allergen contaminants. “It is estimated that 10 to 14 million US consumers have a food allergy,” Mr. Hendra said. “Reactions happen im-

mediately, and the only known cure at this time is strict avoidance of the offending food. Thus, food-allergic consumers have become diligent label readers.”

According to Food Allergen Labeling and Consumer Protection Act of 2004, the term ‘major food allergen’ means any of the following: milk, egg, fish, Crustacean shellfish, tree nuts (e.g., almonds, pecans, or walnuts), wheat, peanuts and soybeans. It is estimated that in the US, these eight account for 90% of food allergies.

There are also pathogen and chemical contaminants to worry about. The milling process has little to no effect on the microbiology of wheat flour. “While low moisture may control the growth of salmonella, it can still survive and pose a risk to consumers,” Mr. Hendra said.

“To successfully risk-manage chemical contaminants and the hazards they present, agri-food businesses must adopt a holistic approach that extends outside of standard prerequisite program and HACCP management techniques to use other strategies,” said A.J. Alldrick, PhD, Campden and Chorleywood Food Research Association. These strategies include Threat Assessment Critical Control Points and the CARVER-Shock method. CARVER refers to Criticality, Accessibility, Recuperability, Vulnerability, Effect and Recognizability, which helps bakers measure impacts of an attack, access to a target, recovery and potential loss.

Separate paths charted

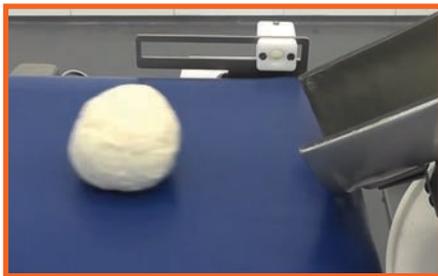
Contamination can happen at any point in the supply chain; it’s an issue that FSMA tries to address. “In March 2016, a major flour miller was subjected to a class II recall when it was discovered that its wheat was contaminated with peanuts. The source was determined to be the rail cars, which had previously hauled peanuts,” Mr. Hendra recalled. This example underscores a major challenge bakery and snack food manufacturers face, specifically commodity-comingling.

Because of this challenge, food safety should exist all

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along the food chain, starting at the farm. “Farm handling equipment may be used for multiple foods with less vigorous sanitation controls,” Ms. Reo said. “These should be monitored through your supplier and verified.”

For food transportation, FSMA’s goal is to prevent practices such as failure to properly refrigerate food, inadequate cleaning of vehicles between loads and failure to properly protect food, all of which can create food safety risks. The rule establishes requirements for shippers, loaders, carriers by motor or rail vehicle, and receivers to implement sanitary practices. Specifically, FSMA established requirements for vehicles and trans-

“Consumers must trust their food supply, and the industry works tirelessly to maintain that trust.”

Matilda Freund, Mondelez International

portation equipment, transportation operations, records, training and waivers. FSMA’s rule on sanitary transportation of human and animal food requires that the design and maintenance of vehicles and transportation equipment ensures that they do not cause the food that it transports to become unsafe. For example, vehicles must be suitable for their intended use, adequately cleanable and capable of maintaining temperatures necessary for the safe transport of food.

“Intermediary storage sites may not be qualified for holding foods properly,” Ms. Reo said. “Ensure your supplier has documented audit and verification of all holding facilities. Tanks and vessels used to transport food ingredients are not always exclusively reserved for food-stuffs. Depending on shipper, container controls and cleaning methods, there is potential for residual chemical carryover or ingredients from previous cargoes.”

Safe through arrival

As ingredients come into the plant, good facility design and operating features can protect them from contamination, according to Greg Carr, senior director of project planning, The Austin Co. He suggested beginning with a separate non-allergen receiving dock and painting the exterior and interior of the door with the plant’s non-allergen color code. Delivery trucks may well have allergen and non-allergens, so carefully check inside the truck before unloading for spillage. Provide an airlock at the receiving dock, where delivery pallets can be switched for color-coded plastic plant pallets via a load transfer station. The air lock should

be positive to the exterior and negative to the ingredient warehouse. Have a dedicated color-coded forklift for allergens and clean it regularly in case of contamination from a delivery truck. And if there are delivery ports for bulk ingredients, color code and lock them.

This extends throughout the plant as ingredients move through the facility. According to John Koury, architect at AM King, allergenic ingredients need to be handled similarly to pathogens. Equipment washdown between product runs is required. Dedicated lines in separate rooms and climates isn’t always possible, but it is recommended. Following the path of carts, trays, bowls or other process equipment throughout the plant, soiled tools and equipment need to be kept separate from clean equipment, as do those handling controlled, labeled allergenic foods. Their storage needs to be obvious. Color-coding can be used to designate the vessels, just as color-coded smocks can be used for employees working in designated areas.

“FSMA is impacting existing facilities that battle possible cross-contamination. The biggest contributors are ventilation systems, compressed air systems, associate traffic and behaviors, and material flow,” noted Rowdy Brixey, president, Brixey Engineering, Inc. Ventilation systems should be designed so air is not shared between segregated plant areas. Filtration isn’t enough, he explained. Contaminated air exhausting from one plant area can become the intake air for another system. Many plants have this issue, which Mr. Brixey said is correctable; just contact a good industrial facilities engineer. A compressed air system’s intake filter can remove dust but cannot keep allergens from infiltrating the system. Plants should get all intake air from a neutral area or confine the intake systems to isolated locations.

Traffic inevitably moves product through vulnerable places in the plant. Packaging traffic may cross paths with sanitary, ready-to-eat product, or trash carriers from raw areas may be emptied and brought back into food production. “Controlling pathogens starts with understanding lanes of process and controlling where people and equipment travel,” Mr. Koury said. “In the ideal world of ground-up construction, these scenarios can be planned. However, processes are frequently added to existing buildings in less than ideal configurations.” Good tracking and, more importantly, strict cleaning protocol with sloped floor drains and full coverage hoses help.

Sanitation for recall prevention

Even with isolating ingredients and equipment and the paths allergen-free products take, poor sanitation practices can undo that good work. “Hygiene, hygienic design and the subsequent monitoring of their effectiveness are of critical importance in establishing and maintaining a safe food supply as well as contributing to the

Validate your kill step

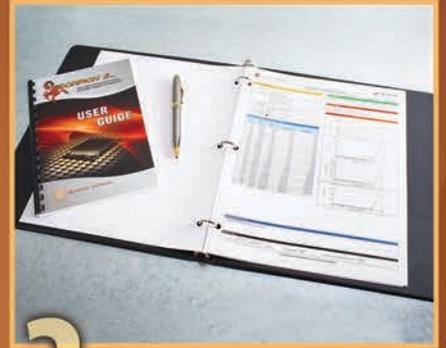
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overall success of a food-handling facility,” said Matilda Freund, PhD, senior director, global quality, Mondelez International, Deerfield, IL. “All processes must begin with clean equipment.”

In order to compete effectively in a challenging environment, a facility should be able to incorporate line flexibility and hygienic control. The converse effect can be low production output and the potential for recalls that can impact the company’s livelihood and erode consumer trust.

According to Gustavo Barbosa-Cánovas, PhD, professor of food engineering and director of the Center for Nonthermal Processing of Food at Washington State University, different process systems and food products may require different standards of hygiene. In any case, the design must ensure acceptable cleaning and hygiene conditions. Food equipment must be designed to protect food contents (in processing stage) from external contamination.

“All interior zones of equipment in contact with foods must accommodate easy self-draining of liquid foods and cleaning/sanitizing chemicals,” Dr. Barbosa-Cánovas said. This is important since accumulation of food or cleaning products in defined internal zones of processing equipment may result in microorganisms and subsequent food contamination, creating hygiene problems in processes.”

To help bakers address these vulnerable points for contamination, AIB offers companies standards, inspections, audits and training. “We have recently added an audit standard for sanitary transportation, focusing on the sanitation of bulk carriers and the associated truck washes,” Ms. Lopez said. “This addition has been driven

by well-known recalls and increased regulation under FSMA for bulk transport.”

Food safety is critical to building consumer trust in the food supply. “From a food manufacturer’s point of view, the consumer is the No. 1 priority, and the safety and quality of their products is of primary importance. Consumers must trust their food supply, and the industry works tirelessly to maintain that trust,” Dr. Freund said.

But this cannot be achieved without everyone in the industry on board. “While FSMA regulates cross-contamination, customer safety is everyone’s responsibility. By planning ahead and using good hygiene, many plants can become more consumer friendly,” Mr. Brixey noted.

While we take precautions to prevent cross-contamination in the manufacture of bakery and snack products, basic steps to food safety — clean, separate (combat cross-contamination), cook, chill — should be always applied to keep our food safe along the farm to table continuum.

In the future, new developments in analytical testing, such as an increase in detection limits and advances in equipment, might make cross-contamination detection and prevention easier. On the other hand, evolving pathogens and new allergen risks could create new challenges. Continued research and training and updated regulations will be the guide to tackle these challenges and to provide sustainable food safety. ●

Editor’s Note: This is the third installment of a four-part food safety series. The fourth story will take a deeper dive into allergens and sanitary design.

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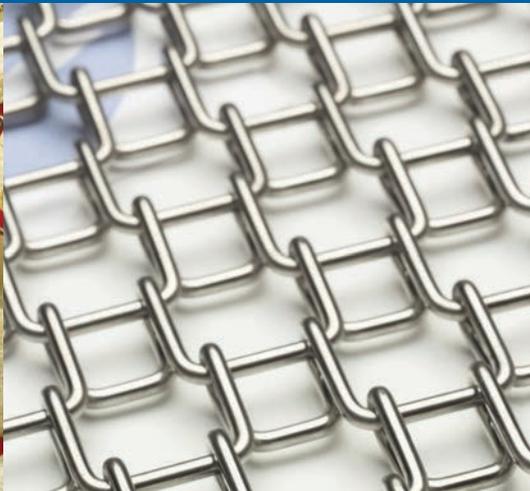


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EVOLVING WITH THE TIMES

IBIE planning committee discusses emerging trends and evolving challenges that are shaping the future of the industry.

Baking is an art and science, and both concepts can be applied when it comes to turning challenges into opportunities. This was the mindset for the International Baking Industry Exposition (IBIE) 2019 planning committee as it developed programming and new features for this year's Expo, to be held Sept. 7-11 in Las Vegas.

Baking & Snack sat down with several committee members to discuss the latest consumer trends, how they're challenging the baking industry and what IBIE can do to help bakers and suppliers take their companies to new levels. In the pages that follow, Joe Turano, president, Turano Baking Co., Berwyn, IL, and IBIE committee chair, shares his perspective along with committee members Jorge Zarate, global operations senior vice-president, Grupo Bimbo, Mexico City; Michael Cornelis, vice-president, international sales, American Pan, a Bundy Baking Solution; Dennis Gunnell, president, Formost Fuji Corp.; Tim Ramsey, vice-president, procurement, Hearthsides Food Solutions LLC, Downers Grove, IL; and Lynn Schurman, owner, Cold Spring Bakery, St. Cloud, MN, and director of education, Retail Bakers of America.

***Baking & Snack:* What are the biggest challenges and opportunities you see as we head into IBIE?**

Joe Turano: Training the workforce is one of the big challenges we have as an industry, on the baker and supplier sides. There's a lack of skilled labor due to the economy's strength in the US and globally, so how we can better train our people is a major need going into IBIE 2019. We have formed education programming around some of the specific needs of training. We put a lot of time and resources into planning the IBIEducate sessions, specifically engineering, sanitation and op-

erations. We have customized courses that should allow management personnel who attend IBIE to gain ideas around future training within their own companies.

Jorge Zarate: There are a lot of other challenges that we're facing as an industry. It is growing internationally, and that demands more innovation and creativity because consumers are getting more demanding. It's a challenge to keep pace as consumers are expecting more from us in different parts of the world, especially in the US.

Tim Ramsey: We've seen the move toward gluten-free, organic, non-GMO. That's putting pressures on us on the manufacturing side, with constantly smaller runs and changeovers. How do you maintain that economy of

(From left) Jorge Zarate, Grupo Bimbo; Michael Cornelis, American Pan, a Bundy Baking Solution; Tim Ramsey, Hearthsides Food Solutions; and Dennis Gunnell, Formost Fuji Corp., discuss pressing issues bakers face heading into IBIE.
Photos by Sosland Publishing Company





The committee spent three years assessing industry needs in planning for IBIE 2019.

scale on SKU proliferation? It's more consumers, more products, more needs.

Michael Cornelis: One of the bigger opportunities for us coming into the show will be in the artisan sector. We have a big emphasis on that in education and in how we're promoting the show. Our industry is ripe for change. Look at artisan in craft beer, what it's done to the large, wholesale beer producing companies. That's a big opportunity, but it's also a challenge for the bigger baking companies with direct-to-consumer e-commerce that the artisan producers are in. Perhaps a craft or artisan baker is much more nimble to go to direct-to-consumer, and I think our show will maybe open the minds of a lot of bakers to those opportunities.

How has consolidation impacted the industry since 2016? How long do you predict it to continue?

Mr. Turano: I believe from the supplier perspective and IBIE exhibitors, it provides new opportunities of how the exhibit space is utilized and how products and equipment are showcased. There will be some new exhibitor spaces this year because of the consolidated efforts of certain companies; they're able to lay out their different brands creatively and efficiently.

On the other side for the baker attendee, I predict more attendance from independent companies because windows of opportunity are opening for smaller, independently owned bakers. I expect quite a bit more attendance from the independent operators sending people from dif-

ferent categories of management, and they can really dive into the education portion for training. We're excited to see how it comes into fruition in the 2019 show.

Mr. Cornelis: There has been a historical perspective of so many plants shutting down in the past 20 years, but nobody's thinking about 20 years ago, how many mega plants were there. I believe that number was zero. If you look at those statistics, there's a lot more story behind it. We have so many more mega plants now than we've ever had, but nobody really talks about that as a percentage of consolidation.

Mr. Zarate: This IBIE gives the opportunity for a lot of learnings. Consolidation is bringing new challenges to the industry because more techniques, more systems and better processes are being required. This consolidation is also bringing other players, not just grain-related but also other industries that are overlapping with ours. It's a good moment for the whole food industry.

Mr. Turano: Jorge has a great point. Because of consolidation, we can bring other segments of the industry for our attendees. For example, we're looking at what other ways can we market our Expo toward segments such as pizza, cold storage and pet food. We really had not approached these segments aggressively in the past with our Expo. But the consolidated efforts of our suppliers and attendees opens new windows of opportunity.

Dennis Gunnell: There are a lot of opportunities for exhibitors, whether companies are consolidating or not. IBIE still brings the whole industry together, gets us all in one spot and opens opportunities for everybody.

From a global perspective, how has consolidation impacted international attendance for IBIE?

Mr. Zarate: I think attendance is growing. Since the last show, we noticed an increase of our international attendees, and even though the consolidation is gathering a lot of countries, all the representatives from those countries are attending our show because they want to learn and they want to bring new opportunities from the Americas to Europe or from Europe to North America and Latin America. It has had a positive impact, and I think it will continue growing. We expect to see this increase international attendance.

Mr. Turano: I think consolidation overseas is even a bit more rampant than in the US itself, but it opens up opportunities for growth for the independents. I think we'll start seeing more participation from independent companies from overseas.

Mr. Cornelis: I've heard a lot of this too, particularly with the focus on education that IBIE has done over the past three show cycles. It's almost as if the 'E' in IBIE is about education now. Our international customers often say they almost can't choose [education sessions] because there are so many classes going on at the same time. International attendees come to the show knowing we're pretty much the only one internationally with an educational program like this. There might be a class or two, but IBIE has well over 100 classes to choose from. That's leading the increase for our international attendance.

Mr. Gunnell: It's not just the number; it's the comprehensive nature of what we're offering. It covers every aspect from HR to production to sustainability.

Mr. Turano: That is exactly why we decided to open up the Saturday IBIEducate day because of the robustness and diversity of the content. But attendees didn't want to miss the show floor for those particular hours. Having the Saturday IBIEducate day allows attendees to attend the training ahead of the show and then maximize their time on the show floor the other days.

How will this extra IBIEducate day enhance the attendee experience?

Lynn Schurman: Some of the most popular sessions will be on Saturday and throughout the week so if people can't catch it throughout the week, they can plan on coming in early and attend on Saturday. There are also some four-hour sessions that they may not be able to work into their schedule if they need to be on the floor. For example, the French Pastry School will be there doing a bread session and a sweet session, and if attendees want to send some of their technical people to attend one, they wouldn't want to pull them off of the show floor for four hours. Now, they can come in early and learn in a consolidated block on Saturday.

The craft movement is affecting commercial baking. How can artisan bakers scale up and large manufacturers tap into the trend efficiently?

Mr. Cornelis: What I'm seeing is that the younger generation will stand in line for great quality baked goods. There are a lot of misconceptions out there that no one is eating bread and that people are taking bread out of their diets, but I've seen just the opposite. You get a great little bake shop in a cool neighborhood, and there's a line down the street. As a consumer, that gets my attention right away. What is making that shop do so well? It's high-quality product, or they've established a certain item that has a unique appeal. There's room out there in the market for everyone to participate. I don't think

bread is dead. Some might say it's dying, but I don't think it's dead. It's ready for a comeback.

Mr. Zarate: Artisan bread is not harming the bread made by wholesale bakeries. Actually, it's helping it grow it again. Consumers who went away from the bread industry, and now, because they discover tastier, different kinds of products that might even be healthier, they are coming back to the segment. This is good for the industry. It gives opportunities to everyone. Now, we have to learn how to focus on the artisan segment and find a way to produce at the right scale and with the right distribution, with the right model. At IBIE, bakers will be able to see different techniques of manufacturing: lamination, ingredients, enzyme technology, flavors, yeast leavening, starters and different techniques. That will help retail bakers learn how to scale up and wholesalers how to focus on this segment of the market.

Ms. Schurman: A lot of the artisan bakers are very good at using social media and different branding techniques to promote their products and have a lot of followers. We have a number of education sessions that are going to focus on how to maintain your brand, and some of the larger companies can look at what some of the smaller artisan bakers are doing to build that following to see how they can use that same technique. Some of the small companies have extensive social marketing databases or followers, and if the large companies can learn from them, they may be able to add that to how they market their artisan breads.

Lynn Schurman (left), Cold Spring Bakery and RBA, and Jorge Zarate, Grupo Bimbo, explain the effort that goes into planning IBIEducate sessions that pertain to bakery production from artisan to wholesale.



IBIE COMMITTEE ROUNDTABLE

Mr. Ramsey: I think the marketing part is fine, but from a producer's standpoint, it's about scale. How do you take all those great ideas with very small volume and make it work in a big plant? That's where the collaboration between equipment suppliers and food companies comes in. They've got to change the game a little bit. Those fast, rapid changeovers — that's the future. Smaller runs — that's the future. It's got to make sense for manufacturers to get into new SKUs.

Mr. Turano: IBIE will certainly spur quite a bit of creativity from our new Artisan Marketplace that we'll have in each hall. With the layout of the marketplaces, as well as the product displays that we'll offer, a lot of idea generation will occur.

How is the proliferation of new companies, brands and products affecting sectors such as co-manufacturing, foodservice and retail?

Mr. Ramsey: It's about emphasizing the need for best practices and standardization. The ideas are great, but then how do you take those to market and take that new idea and make it work efficiently?

Mr. Zarate: Those small companies, small groups of students or scientists or food technologists can find in our show a lot of information, techniques and knowledge so they can develop new products. It's like using the show as external R&D.

Mr. Gunnell: It's not just the small companies. Large companies are now getting innovative when it comes to

making products for very specific applications. Some of the large snack food segments are making specific packaging. Consumers can design it themselves, request the product and have it sent to their home ... and that's coming out of the large companies. Maybe it starts with some of the smaller bakers, but it's being driven through some of the larger ones as well, and everybody in the chain has to realize that a segment of our market is going to that.

How are better-for-you trends affecting the baking industry, and what aspects of IBIE can help bakers and snack producers in that space?

Mr. Turano: When we say, 'better for you,' the mindset of the consumer is transparency: knowing what they are purchasing and going to eat. That's more of the demand that many of us are producing for. In our Expo, the ingredient suppliers will have not only the knowledge base and resources at their exhibitor booths but also the products that cater to this need for transparent labeling.

Mr. Gunnell: The beauty of our exhibition is you've got nearly 1,000 exhibitors there, and it's hands-on. You can talk to people, see the equipment, learn about the ingredients, and it's all real-time. You don't get that looking at the internet; you don't get that through telephone conversations. This is something you can't get any other way.

Mr. Zarate: The better-for-you products are a factor. They challenge the industry but in a good way. Challenges are leading the innovation and creativity. We are gathering all those solutions — in ingredients and processes. Some people have the knowledge to produce and to develop these kinds of products, so that is a great opportunity for the industry.

Mr. Turano: Another feature that Lynn and her team set up for the IBIEducate sessions is that we have several sessions specifically customized for adjusting formulas for transparent labels.

Ms. Schurman: We also have a session that's focused specifically on what millennials are looking for when they're shopping, so the different bakeries can use that to develop products.

How will interactive technology change operations and training — and the IBIE experience?

Mr. Turano: Because of what we experienced at iba [held in Munich last fall], many exhibitors will also be adding virtual reality features to their booths at IBIE. We have our own IBIE virtual reality tours in partnership

With a committee equally composed of bakers and suppliers, IBIE understands the needs of attendees and exhibitors.



“Training the workforce is one of the big challenges we have as an industry, on the baker and supplier sides. We put a lot of time and resources into planning the IBIEducate ... We have customized courses that should allow management personnel who attend IBIE to gain ideas around future training within their own companies.”

Joe Turano, Turano Baking Co. and IBIE Planning Committee

with iba. We're very excited about it. But in general, we'll see more technology at our exhibits than ever. And on the attendee side, companies such as ours are excited to experience that. We're bringing personnel who are immersed in training for our company to learn how augmented reality or virtual reality actually operates so we can further our own training within our facilities.

Mr. Zarate: At IBIE we will see all kinds of technology, not just virtual and augmented reality, which certainly is helping us in training and troubleshooting. When you can do that remotely, it saves time and makes it more efficient to focus on training or maintenance of our equipment. There's a lot of technology we will be able to see at the show, like 'internet of things' and digitalization of processes that help us ensure quality and optimize processes for reducing waste and using optimum resources in terms of raw materials and energy.

Mr. Cornelis: As an exhibitor, we have followed the trend particularly for our younger consumers on personal, individualized learning. Our younger customers don't want to be talked to; they don't necessarily want to have a brochure or a pamphlet. We've designed all our touchscreens in our booth to be personalized learning, incorporating video and 3-D graphics into all our product demos. And that lends itself into the next phase of virtual reality. For those people who want to get inside of a mixer and see it mixing and see how the sanitation of that machine will be downstream, it gives you a huge advantage to have a company that can support that because all of those things cost money to develop, but it pushes your company to advance in that technology because that's what your consumer wants. We are seeing companies incorporating 'gamification' into training, so with that, younger operators can compete against each other. They can take a piece of equipment apart, practice that and compete against other people in the plant doing the same thing.

Ms. Schurman: We have five or six sessions that are specifically focused on remote maintenance, augmented reality, visual analytics, development of machine troubleshooting tools. All of those will be part of the education program, so if you can't find it on the show floor, you can also find it in IBIEducate.

What advice do you have for IBIE first-timers?

Mr. Gunnell: Do your homework, get on the website and get on the app. If you're a first-timer and you're not going to our app, it's going to put you behind the curve. There's just too much going on for a first-time person to walk in and say, 'Okay, where am I going to go?' We really emphasize looking at the education program ahead of time, researching the booths, setting a course of what you want to do. If you don't do your homework, you're not going to get everything out of it.

Mr. Turano: Making the most of the Expo is the advice I would provide. Not just spending time on the show floor and seeing the different variety of exhibitors but also experiencing all the features we've added over the years.

Mr. Turano, you've seen IBIE through different lenses: an attendee, a committee member and now chairman. How has your perspective changed after seeing it from every angle?

Mr. Turano: First, we are blessed with a wonderful team managing IBIE, our committee of bakers and suppliers, our leadership from ABA, BEMA and RBA and our wonderful suppliers and vendors of services. It's been a pleasure to plan the show and work with everyone for the past three or four show cycles. My first show that I attended was in 2001, which was obviously an unusual show because of the events that took place in the world. But the changes that we've experienced over those years at IBIE certainly are mostly around attendee engagement. What I've learned as a committee member and leading as chairman is that the team listens to feedback well. We've listened to both sides. The show features we've added — like the extra education day — that is from feedback from our attendees. The team has done a wonderful job adapting over the years to really provide more engagement. In addition to education, the different pavilions, the virtual and augmented reality, the size of the show, and the diversity of our exhibitors has grown tremendously. I look at our company 20 years ago and our current needs at the time, and I can say that IBIE has kept up with or consistently provided for our needs. I look at it from that perspective, and I'm very proud of our efforts. I'm proud of the fact we have bakers who attend the Expo every three years and gain value and look forward to it each time. ●



THE RIGHT STUFF

To modernize a bakery, Bud's Best Cookies learned that it takes the perfect combination of people, equipment and a little bit of fire.

by Joanie Spencer

What are cookies made of? When Bud Cason was a young boy, he discovered the magic of it all working in his aunt's bakery, Greg's Cookie Co., and he was hooked. "My dad thought it was the neatest thing that flour, sugar and shortening could come into a bakery in bags and boxes and go out as cookies in a cookie jar," said Al Cason, Bud's son and president and COO of Bud's Best Cookies in Birmingham, AL, which his father, now chairman, founded in 1991.

Those were simpler times, and today, the magic happens in a different way and on a much larger scale than by hand like they were at Greg's (which he eventually purchased from his aunt) all those years ago. In today's cookie production, automation is the status quo ... then again, Bud's Best is a testament that people are still vital to the process.

Over the past two years, this bakery has invested not only in new technology to increase throughput and expand its production capabilities but also in a leadership team that is poised to take the business into the future.

More minis

While it produces several cookie varieties, Bud's Best is most known for its bite-size cookies, which the company developed nearly 30 years ago when the mini craze began. "My father was the first to have a full line of bite-sized cookies and build a business around it," Mr. Cason recalled. What started out as a trend reached ubiquity in the late-1990s, when minis proliferated everywhere from c-stores to big-box retailers.

Today, the bakery serves retail outlets in 40 states. "We also have a handful of customers who sell outside the US," Mr. Cason said.

The portion-control trend has worked in Bud's Best's favor, especially when snack sizes flourished in dollar stores and vending machines, where the company has found great success thanks to the product quality. "It's all about getting good cookies in smaller packs," Mr. Cason said. "People can still have something that takes care of that craving, something that tastes good, but they just eat less of it."

While the company's best-known products are its mini vanilla wafers — the operation can crank out at as many as 1.3 million an hour in the height of production — it also creates a variety of other cookies, including sandwich cookies and a large variety of wire-cut and rotary cookies.

That versatility is something that has set Bud's Best apart from some of its bigger competitors. "We can do a lot of different things for different customers," Mr. Cason said, noting that some retail chains request cases with packaging as small as 6-packs up to 24-pack cases, thanks to grab-and-go trends. "We've seen a lot of requests for portion-control packs, pantry packs and smaller case packs over the past few years," he said. "You need to have a lot of packing stations to accommodate those."

This need was just one that prompted some big changes inside this 125,000-sq-ft facility. After investing more than \$7 million in equipment upgrades and a line

Al Cason, president and COO, Bud's Best Cookies, carries on his father, Bud's (illustrated in the top right corner) passion for making high-quality cookies.
Photography by kp studios.



Left: (From left) Scott Putnam, maintenance supervisor; Terry Helms, vice-president, manufacturing; Rob Myers, sugar wafer director; Joe Tampio, general manager; and Scott Myers, shift manager make up the next generation of Bud's Best Cookies' plant leadership.

Right: (From left) Anderson Cole, warehouse/logistics manager; Jamey Helton, vice-president, finance; Al Cason, president and COO; Faye Goudy, HR manager; and Matt Payne, purchasing manager, represent all facets of the company.

expansion, the bakery embarked on a two-year evolution that ultimately triggered the restructuring of Bud's Best leadership.

Tools for growth

Despite his love for cookies, when Bud Cason founded the company in 1991, he was on the rebound from selling Greg's Cookie Co. 5 years before, and he toyed with the idea of going in a different direction and starting a sugar wafer business instead. Although he decided to stay with cookies, his first love, he never let go of those sugar wafers.

A natural salesman, he got into the sugar wafer business through a Canadian co-manufacturer. Eventually Bud's Best wanted more control over the production schedule during the summer — sugar wafers' busy season — and invested in its own line from Franz Haas, a division of Bühler.

After successfully installing the line, though, the bakery realized that making sugar wafers was very different from making cookies, and it needed a baker with expertise in the art of sugar wafer production. Bud's sent the business back to Canada temporarily and shifted its focus back to its cookie production.

To compete in high-volume cookie business, a bakery needs two things: speed and versatility. To achieve both, Bud's invested in an Advantech wirecut line and dual-zone tunnel oven on a fourth production line dedi-

cated to vanilla wafers, as well as four Ishida scales that feed as many Rovema high-speed baggers that support all cookie lines.

The bakery also upgraded its ingredient handling systems, which consists of two sifters, one for flour and one for sugar (along with a sugar mill to grind powdered sugar for crème), from the Fred D. Pfening Co., in addition to the two existing flour silos and a sugar silo located outside. After sifting, the flour is transported directly to the mixers, while 10,000 lb of sugar can be held in the use bin.

After mixing, wirecutting Bud's Best vanilla wafers is a tricky proposition because the cookie starts out more like pancake batter than cookie dough. The batter is transported from the mixer through a pipe and is pumped through a series of cups on a die roller. As it's squeezed from the cups, the wire cuts it.

The roller on the Line 4 wirecutter is larger than the other lines — 10 in. as opposed to 7 in. — and is servo-controlled, another upgrade from the older lines.

The speed of the roller and the size of the cups determines the size of the cookies, which were minis at the time of *Baking & Snack's* visit. "We can run large wafers and bite-size," Mr. Cason said.

While some cookie manufacturers determine their product viability on a minimum of \$10 million in sales per year, Bud's has the flexibility to pick up those smaller accounts, especially now with the new baggers.

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“That’s our wheelhouse,” Mr. Cason said. “We can get in there and be competitive in national accounts because with these baggers, we have the flexibility to do different case packs, multiple units or pantry packs.”

The goal of purchasing and installing a new oven and baggers was to increase output and flexibility. Bud’s Best is now able to run a mix of flavors, package sizes and case configurations simultaneously. “What we tried to accomplish when we did this installation was to eliminate, ‘We can’t do this because of that,’ ” Mr. Cason explained. “We asked ourselves, ‘If we put in another oven and the baggers, can we more easily schedule whatever we need to?’ The Answer was, ‘Yes.’ This will really free us to do a lot of different combinations that we weren’t able to do in the past.”

That said, the bakery learned a valuable lesson during the cookie and sugar wafer equipment installations: Automation can make life easier, but it’s only a piece of the puzzle. There are two sides to every coin, and — like in the sugar wafer room — installing state-of-the-art equipment can only take an operation so far without the right people to develop the products and run the lines.

The need for expertise

Throughout his career, Mr. Cason heard a resounding piece of advice from his father: “You’ve got to have fire in your belly.”

And over the past few years, he has learned that a bakery can invest all the money in the world into the most advanced equipment, but if the workers don’t have that fire, success remains only a desire.

Remember that sugar wafer line? It sat dormant for a few months, leaving Bud Cason to question his decision to follow that dream. But the bakery contracted Bruce Linkletter, an industry veteran with years of sugar wafer experience to help restart the line, and Mr. Linkletter introduced Rob Myers, a former colleague and up-and-comer in sugar wafer production, to the company.

“We had to shut the line down, but we had all this money tied up in it, and we wanted to see it work,” Mr. Cason said. “But you have to have somebody who knows how to run it.” Mr. Myers was a match. And today, he is the sugar wafer director for Bud’s Best.

The thing about sugar wafers is that there are less than a handful of lines actively dedicated to their production in the US. It’s not a complicated process, but it’s a delicate one. “Sugar wafers are a lot less forgiving than just about every other product you can run,” Mr. Myers said. “There’s not a lot to the shells, so if you don’t get the structure just right, it won’t work the rest of the way through the line.”

Because they are made with a little batter and a lot of creme, sugar wafer production is a simple — but rather unforgiving — process.



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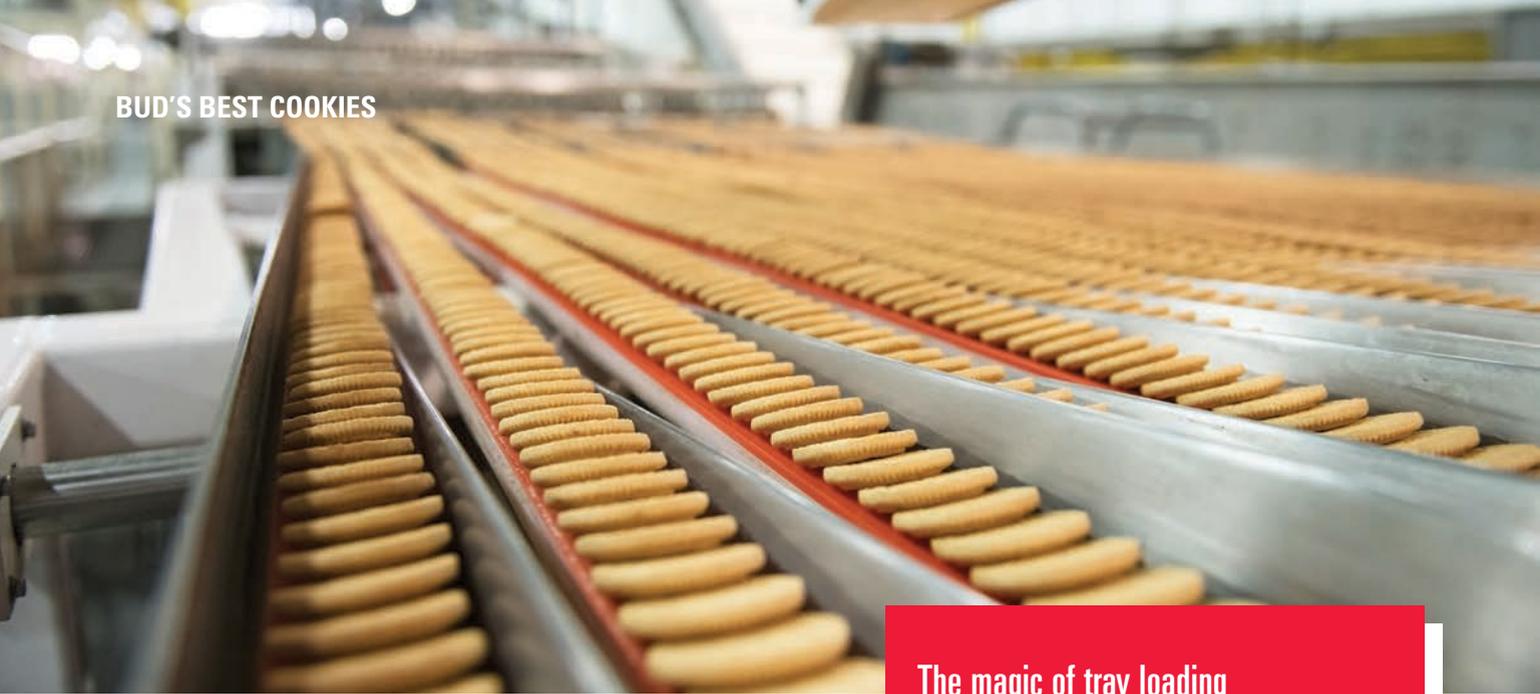


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New equipment and the right leadership ensures that Bud's Best can efficiently produce a variety of cookies in an array of configurations.

They're created with a little batter and a lot of crème, so the batter's viscosity and temperature are critical. "As long as the shells are good, as long as you've got the right viscosity in the batter, the temperature is good and you're not over-baking, the process runs smoothly," Mr. Myers explained. "But if you have any of those things not in line, the shells will be too fragile and really flaky, and when they go through the spreader for crème application, they'll want to break."

From the depositing of the batter onto the griddle plates, through the baking and then spreading the crème, Mr. Myers oversees the line on a strict process. "There's not a lot to it, but you have to follow the process," he said.

A key component is in making sure the crème holds the wafers together without weighing them down, and that's done through cooling, which runs the sheets through the cooler for about 11 minutes, which gives the crème time to set up. "When you make the crème, you melt the shortening, so you've got to get those fats to recrystallize in the right form so you have hard crème when it comes out the other side," Mr. Myers explained.

He also understands the importance of the equipment properly aligning the stacked wafer sheets as they go through the wirecutter, and it all starts at the beginning. "If the shells aren't square because the batter didn't spread far enough, or if you lose some of the corners on the shells or if the middle gets chewed away, they won't line up back-to-back, and when the pusher pushes the front row, it will grab the row behind it."

This level of expertise was a game-changer, according to Mr. Cason. Before Mr. Myers, these types of issues and problems with overweights and bowed product were not uncommon, which led to putting the line on hold. "The product wasn't right," Mr. Cason said. "The quality wasn't right."

Now, the sugar wafers are running smooth as the

The magic of tray loading

At Bud's Best Cookies, flexibility is the name of the game. This bakery manufactures cookies ranging from large and bite-size vanilla wafers to standard and bite-size sandwich crèmes and a large variety of wire-cuts and rotary cookies on four production lines, in addition to sugar wafers made on a separate line.

Creating this many varieties — in seemingly countless packaging configurations — makes the conveyors that feed the creaming and packaging areas look more like a space-age highway infrastructure than a cookie factory. It also requires a high level of strategy to get the right products to the proper places and the right times, often depending on the season.

"To do some of the magic we do here, we rebuilt an old tray loader so that in the summertime, we can run Line 3 exclusively for ginger snaps we make for a private label customer," said Al Cason, president and COO.

But during those months, the operation needed to reassign its other cookie production to compensate for that line. "We rebuilt the tray loader and built a takeoff conveyor that takes those cookies so we can run standard-size wirecuts on Line 1 in the summer and run it through the tray loader," he explained.

Now that the fourth cookie line installation is up and running, next on the horizon for Bud's is to develop a plan to further engineer all four lines to streamline the efficiencies even more.

crème in their layers. Mr. Cason credits Mr. Myers, not only for his attention to the line but also for the ways in which he elevated morale in this area of production.

“Dad was fortunate enough to have a lot of good people in the past,” Mr. Cason said. “But that was the past. This is a new workforce, a new environment. You have to have different skillsets than the old management philosophy.”

After Mr. Myers joined Bud’s Best, the company recruited his brother, Scott Myers, to manage the first shift for the cookie business and Terry Helms as vice-president of manufacturing in addition to Joe Tampio, who has served as general manager for several years.

“Terry’s got a ton of experience with equipment and baking; that’s one of the reasons we hired him,” Mr. Cason said. “We needed somebody who could be a steady hand that we could trust, someone who knew equipment and knew manufacturing and who could bring the culture back.”

The hire was no coincidence; the Myers brothers and Mr. Helms previously worked together for Lance at the Charlotte, NC, plant, and they brought a culture of camaraderie to Birmingham. “The big focus has been on trying to build a team and get morale back,” Mr. Cason said.

“The equipment is great, but it takes a certain kind of person to make sure the doughs are right, to make sure the productivity is right, scrap is down and the labor is where it should be,” he added. “Now, my father and I can go out and sell — and deliver — a quality product on time, every day. You need a certain level of expertise to do that, and we have that now.”

New people, new products

Baking is a marriage of art and science. It’s a combination of formulation and processing and a marriage

“Sugar wafers are a lot less forgiving than just about every other product you can run ... There’s not a lot to it, but you have to follow the process.”

Rob Myers, Bud’s Best Cookies



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BUD'S BEST COOKIES

of people and machines. These are the concepts driving Bud's Best product development as the company looks to the future.

"We focused on the value arena for so long that we're ready to get outside of that with some new quality offerings and different configurations of things we've done in the past," Mr. Cason said.

Now that the sugar wafer line is running without a hitch, the bakery is working on developing new varieties of this vintage product. At the Sweets and Snacks Expo, held May 21-23 in Chicago, the bakery displayed two sugar wafer sour flavors made with Pucker Powder. "We're looking at doing some more niche things on this line," Mr. Cason said. "We have some interesting things coming down the pike that could be well suited for a specialty sugar wafer operation."

And under the Bud and Al's Signature brand, the bakery launched a line of "thins," similar to Uncle Al's stage planks, an old item from the company's early days. "We have people call and tell us they remember the planks from their childhood," said Jamey Helton, vice-president, finance.

The thins come in two flavors — chocolate and coconut — and are wrapped two thins to a pack. "[Bud and Al Cason] have taken them to a couple of tradeshow recently, and they've done fantastic," Ms. Helton noted.

As the bakery builds its management team and expands production capabilities, it's ready to launch new ideas.

The venting system on the dual-zone oven helps cool vanilla wafers and keep production moving.

"With this team, our quality has improved, our productivity has gotten better and the scrap has come down. All those good metrics are starting to happen because of this team."

Al Cason, Bud's Best Cookies

"There are many opportunities out there with all we can produce," Mr. Cason said. "We work with different companies on different ideas. We're all ultimately working retail, and we're selling to the same types of stores. But different people have different relationships with companies; if we put our heads together, maybe we can come up with some ideas that would be good for us all."

To achieve this, Bud's Best recently hired Kevin Rackham as director of quality and R&D. "Kevin comes to us with a tremendous amount of R&D experience," Mr. Cason said. "He's a formulator. He's a quality





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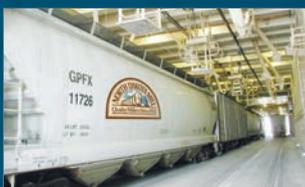
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BUD'S BEST COOKIES

One connection can chart a company's course

These days, employee turnover is a common problem in bakery plants. And while automation can accommodate for a lack of labor, there's another side to that coin. Not having the right expertise in a plant can make for a challenging installation.

That's what happened at Bud's Best cookies when the company installed a sugar wafer line and fourth cookie production line in 2017. So, Al Cason, president and COO, turned to a friend, Bruce Linkletter, a consultant with a lot of experience with sugar wafer production. While Mr. Linkletter helped get the line running, he also introduced the company to his former colleague and close friend Rob Myers, who would become Bud's Best's sugar wafer director.

"Bruce told me, 'Rob Myers will be the best person you can get, not only for this position but also for your company. I know him, and I know what he's made of. Rob could come in and help sugar wafers, and it will help your entire operation by having somebody like him,'" Mr. Cason recalled. "I had never heard an endorsement like that until I heard Rob tell me about his brother," he added. Mr. Myers' brother, Scott, joined Bud's Best in 2018 as shift manager. And shortly thereafter, Terry Helms, who had also previously worked with Mr. Linkletter and the Myers brothers, came on board as vice-president of manufacturing. Today, Scott Myers is production superintendent.

"Our leadership team — and company culture — has come light years in a short amount of time," Mr. Cason declared. And he credits it all to the call he made to Mr. Linkletter.

Shortly after he left the sugar wafers in Rob Myers' hands, Mr. Linkletter was diagnosed with stomach cancer. He passed away earlier this year.

Mr. Cason said he will never forget what Mr. Linkletter's work ethic and strong industry relationships did to chart the course for Bud's Best to sail smoothly into the future. "It was because of Bruce that we found Rob, who recognized challenges that his brother could help us with," he said. With the Myers brothers, the addition of Mr. Helms and with the expertise of Joe Tampio, general manager, Bud's Best has its leadership dream team. "And it all spawned from Bruce," Mr. Cason attested. "He was a true gentleman and friend."

Top: The new bagging system on Line 4 has the versatility to keep up with the new oven's horsepower.

Bottom: Speed and versatility are key factors in high-speed cookie production, and the new line at Bud's Best has both.

guru. He's always thinking and not afraid to come up with new formulas."

Looking toward the future

It's true that the best laid plans of mice and men often go awry. Projects rarely have the ending they were expected to, but in many cases, serendipity prevails.

Through pauses, setbacks and a number of changes, Bud's Best Cookies' installations set the bakery on a course toward future growth, thanks to the team it was able to build along the way.

"Al will lead this company into the next phase," Ms. Helton said. "And I plan to be there behind him, helping with that charge. We learned a lot through these installations — not so much the mechanical knowledge or how to work the equipment — but in how to be involved. It helped prepare us for the future."

Putting new leadership in place now will also help the company navigate the workforce gap currently happening in the baking industry. "It's hard to find younger people who are in — or even interested in — the baking business. There are a lot of people out there, but they don't have a lot of experience. To find people who are real bakers and know this industry is tough," Mr. Cason said.

He sees the team as truly a gift for present production and the long-term future. "It's been a real win," he said. "With this team, our quality has improved, our productivity has gotten better and the scrap has come down. All those good metrics are starting to happen because of this team."

Bud Cason spoke of having the fire in the belly, that passion. And though the past couple years brought its ups and downs, Bud's Best is on a path to success. "We've got the horsepower with the extra equipment — the new baggers, scales, oven, wire-cutter and the sugar wafer line — and a staff who can take care of what Dad and I are out there selling," Mr. Cason said.

The fire is ablaze for the whole team.

"Whether it's people, equipment or the changing market, we are now on different footing," Mr. Cason said. "We've got the equipment in and the best staff we've ever had. We've weathered some storms, and we got through them. We now have a group of people who will propel Bud's Best like never before. I believe that." And that's what cookies are made of. ●







SEA OF CHANGE

As generations shift, economies grow and lifestyles change, Asian diets are evolving, and bakers are trying to keep up.

by Charlotte Atchley

The tides of the global baking industry are shifting as the North American and European markets mature and new global regions emerge as currents of growth. In fact, within this environment, research firm Mintel predicted in its Global Annual Review of “Bread, Bakery and Cakes 2018” that Asia and Africa will dominate the global bakery market in terms of growth in the coming years, characterizing the Asia region as “a dynamic and fast-growing region for bakery.”

While bread consumption remains low for Asian countries compared with more mature markets, global shifts in population, income and the internet are swiftly changing that. In China and India, for example, per capita consumption of bread in retail channels is just 0.6 kg, according to Mintel. However, data from Indian Bakers Federation (IBF) shows the baking industry is seeing 7 to 8% growth in Asia as a whole and as much as 12 to 13% growth in India, a country Mintel reported as only have 0.06 kg per capita consumption of sweet bakery.

Meanwhile, IBF reported that more than 7 billion packs of biscuits — the highest-selling product in the nation — are sold annually in India, followed by sliced bread, cupcakes, pastries and brownies. Mordor Intelligence also found that quick-service bakeries, those making pizza, puff products, pastries, cupcakes and similar items, have tripled over the past 10 years. And frozen dough and frozen bakery products are expected to rise by 10% in the next five years. Yes, the baking industry is swelling in Asia.

More and more baked goods are finding space on supermarket shelves across Asia. This visibility is making them front-of-mind for consumers in Singapore, Hong Kong, South Korea and India, according to Mordor Intelligence’s report “Asia-Pacific Bakery Products Market Share, Size — Segmented by Product Type, by Distribution Channel — Growth, Trends and Forecasts (2018-2032).” And it’s not just bread. Mordor reported that Giant Hypermarket, primarily operating in Southeast Asia, stocks its shelves with a variety of baked goods, including buns, cream rolls and pita bread, to suit diverse preferences throughout the region.

Chih-Te Wang, Siang Shuai Cake, Taipei City, Taiwan, has seen and felt this boom in demand for new products from his own customers. “Consumer habits have changed,” he said. “Our bakery has to keep producing

Consumers in Asia are looking for more nutritious foods and equate artisan bread to healthier bread.
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As Asian diets Westernize, sliced bread still dominates bakery sales.
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new products to keep up with the needs of our customers.” While 10 years ago, he remembered, the order of the day was more traditional Taiwanese breads and cakes, today the bakery must get creative to stay competitive as consumers expect more exciting fare.

This increased demand for a variety of baked goods can be traced to many global shifts impacting the region. “The attitudes changing toward bakery products are driven by multiple factors,” explained Christine Jiang, head of international marketing and sales, Bakery China Exhibitions Co. “Of course, cultural shifts, globalization and generational shifts are the reasons driving this trend as well as the development of China’s general economy and the consumers’ demand for various and even better food choices.”

Bread’s eastward expansion

The baking industry’s rapid development in Asia is a direct result of much of the growth and shifts seen in the region during the past decade. Globalization and the internet shrink the world and bring Western ideas of

.....

“Ten years ago, there were only a limited number of overseas companies on the equipment and ingredient sides at the Bakery China shows.”

Christine Jiang, Bakery China Exhibitions Co.

.....

diet, centered on bread, eastward. And millennials are not only adopting a more Western lifestyle, but they are also gaining more buying power in the global economy.

“With the development of high-speed internet and e-commerce in China, baking products are walking into Chinese families, and we are very optimistic that the baking culture will be accepted and favored by even

more Chinese people and families,” Ms. Jiang said.

Even on the retail side, Ellen Yin, Florida Bakery Ltd., Taipei City, Taiwan, has seen the Asian baking industry and customers exposed to and inspired by celebrity chefs and bakers. “Increase in world travel brings exposure to bakery products from different parts of the world,” she said.

Mordor’s research bears this out. Asian consumers’ preference for international bakery products provides opportunities for international companies to export products into this region.

Ms. Jiang said Bakery China Exhibitions saw this play out in its trade show in 2015. “It was a booming time for the baking industry in China,” she said. “We saw a growing number of local and overseas companies and brands in China and a growing number of people working in China’s bakery industry.”

Globalization is enabling consumers to spend more on food and also become pickier. “The product development pace is quicker, and product life cycle is shorter to meet the finicky consumer’s demands,” Ms. Yin explained. “The Northeast Asia market is relatively mature, whereas Southeast Asia is experiencing a surge of wealth. When people have more disposable income, they will start to pay attention to what they eat. It’s no longer just a necessity; they take into consideration factors like nutrition and glamour.”

In India, the middle and upper classes have seen income double and, in some cases, triple in the past 10 years, which has had a significant impact on the food industry, according to Raj Kapur, national convener, Indian Bakers Federation. Typically, he added, Indians spend about 20% of their income on food.

With surging incomes, young people gaining more buying power and shifting priorities, Asians are looking more toward convenient, ready-made bakery products to fill their hunger. Mr. Kapur sees a trend in home-made food being replaced with low-cost baked goods. “Working women have the constraint of cooking food for their families, and young students and working profes-

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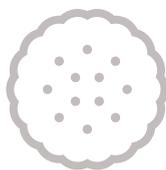
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7 BILLION packs of biscuits are sold in India annually. THE BAKING INDUSTRY has grown 7-8% in Asia and 12-13% in India, specifically.

Indian Bakers Federation

Indian Bakers Federation

sionals want quick and ready-to-eat fresh foods,” he said.

In China, breakfast sees the most play for bakery, as consumers use these baked goods to fuel them on-the-go.

Healthy impact

With more disposable money and a wide variety of options on the bakery shelf, consumers in Asia aren't just looking for ready-to-eat baked goods. They are also seeking out bakery products that bring some nutrition or at least do no harm.

In its report on the region's baking industry, Mordor found that Asians are looking for organic products that contain no pesticides or chemical fertilizers. For a healthy halo, Asian consumers are also looking for gluten-free baked goods and reduced, even no, sugar products.

“The health and nutrition segment of bakery and patisserie products has emerged significantly,” Mr. Kapur said. “The demand for gluten-free, sugar-free, low sodium and protein-rich bakery products has increased three-fold in the past five years.”

Even low/no carb and Keto diets have played a role in Asian shopping decisions. And consumers' concern about fat in relation to their health is guiding their choices.

Case in point, while Asian consumers may say they are seeking bakery products with less sugar, fat, carbs

and even gluten-free, they also are buying more artisan breads with the idea that these are healthier than commercially made counterparts. “Artisan bread, specifically sourdough, the large fermentation sector is getting attention,” Ms. Yin said. “Even though it's a niche market, it's steadily growing because of its natural and healthy perception. The global movement toward clean label, less processed foods is directing many consumers to this category of bakery products.”

And it's worth mentioning that Asia is following the US in its ban of trans fats. Mr. Kapur said that the Food Safety and Standards Authority of India (FSSAI) is proposing to limit the maximum amount of trans fat content in vegetable oils, vegetable fats and hydrogenated vegetable oil to 2% in its goal to eliminate trans fat in India by 2022.

Growth requires support

With all this rapid growth and need for variety, the Asian baking industry has been rising to meet the burgeoning demand. This has required technical expertise in manufacturing and formulating as well as a labor force to support the industry.

“Ten years ago, there were only a limited number of overseas companies on the equipment and ingredient sides at the Bakery China shows,” Ms. Jiang said. “Back then, foreign companies might have found it hard to

Where's the growth throughout Asia?

As Asian lifestyles become more on-the-go and people find themselves with greater disposable income, opportunity abounds for the baking industry to snag sales. There are several areas where bakers may find some success.

Single-serve items packaged for convenience appeal to commuters looking for a snack to tide them over between meals or breakfast for their morning commute. Artisan products as well as those catering to health-conscious consumers can gain ground in sales, particularly those

focused on gluten-free, sugar-free and keto-friendly.

While Mintel found in its February 2019 report that plain white bread still dominates the market, the research firm had reason to believe that customizable flavors and tapping into Southeast Asia's affinity for spice could yield some excitement. The snack and instant noodle categories have already seen success incorporating local flavors. So, why not bakery?

Mintel cited spice/spicy flavors' low penetration (2%) as reason to

believe this segment could benefit from innovation. The firm suggested bakers look to local diets for inspiration, such as mala from China, tom yum in Thailand and rendang in Indonesia/Malaysia.

Mordor Intelligence found that dirty breads, originating in China, are moving throughout the region. These soft filled-buns are coated in syrup and powder and considered an indulgence. They have been growing in popularity not only in China but also in Singapore and Hong Kong.



start a business in China due to the limited market for bakery products.”

Today, all of that has changed. “There is great demand for premium bakery ingredients, equipment, technologies and professionals,” she said. “That’s why every year at Bakery China, we see a growing number of overseas companies and even start-ups that want to open their bakery business in China.” She expects that in the next five years, the Bakery China shows will be featuring more globalized and varied products, reflecting this continued growth.

India’s baking industry has seen a lot of growth in terms of incorporating automation; however, the country’s baking industry struggles with labor issues and lack of formulation expertise. “This industry has seen the development of technological expertise and also tremendous entrepreneurial development,” Mr. Kapor said. Today the industry uses automatic mixing and dough resting. Modern ovens with rotating racks, probes and micro-processor controls provide even bakes and precise control over temperature and humidity, he reported.

“This gives bakers unprecedented control over crust, browning and texture,” he said. “The new technology has resulted in safe and economic bakery products.”

However, ingredient sourcing and formulating knowledge is a place the Indian baking industry has room to

As Asians shift toward a more on-the-go lifestyle, they are wanting more single-serve, convenient baked goods.

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grow. The country only has a few flour mills that supply specialty flours to bakers, and that will challenge the growth of this industry, according to Mr. Kapor.

And like the North American baking industry, India struggles with workforce. “During the past few years, the baking industry has been struggling to employ low-cost workers who are usually trained on the job,” he said. “The baking industry, especially small and micro bakeries, need to hire certified and skilled bakers to ensure quality and safe products. At the same time, it is necessary to train and certify bakers in order to alleviate the problem of a shortage.”

FSSAI has begun training food business operators through the Food Safety Training & Certification program. “Each food business should have one food safety supervisor certified by FSSAI for every 25 food handlers,” Mr. Kapor explained. “This is increasing awareness among the industry.”

As bank accounts in Asia grow, younger generations grow up and the world continues to shrink, the baking industry looks to gain more momentum. That could be in the form of traditional Asian bakery products, more Western goods or fusions of both. This region invites support as its commercial baking industry rises to meet demand. ●

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PRESERVING APPEAL

With water-binding abilities, gums and stabilizers can improve quality and shelf life for certain finishings.

by Charlotte Atchley

Icings and glazes are window dressing. Their very presence tells consumers this baked good is an indulgence and draws them in to make the purchase. But runny, sticky or smudged icing tells shoppers that a treat or dessert is going to be messier than it's worth, and a glaze that's gone too thin due to high temperatures won't have enough body and sheen to capture attention, much less make a sale. Gums and stabilizing systems can prevent these and other scenarios from happening and preserve these toppings as the baker intended for longer periods of time.

"Bakers risk losing shelf appeal if they don't use gums and stabilizers," said Brent Galasso, West Coast sales, Brolite Products. "People buy with their eyes first, especially when it comes to sweet goods. If the icing or glaze is broken down, weeping, stuck to the packaging, sliding off the cake or the pastry, or bloomed, people may choose a different item to purchase."

When it comes to icings and glazes, moisture and temperature are at the center of everything: processing, texture, consistency and shelf life, and even how they hold up shape and interact with packaging. Gums and stabilizer systems can improve upon all of these needs.

"Bakers will not have the same degree of control over the texture of the icing without the use of gums," said Troy Boutte, PhD, principal scientist, DuPont Nutrition & Biosciences. "And glazes and icings made without gums will be much more susceptible to quality issues due to shipping and storage conditions."

However, there is a wealth of gums and stabilizing systems for bakers to work with, but it can be difficult to choose with a product's needs and processing and storage restrictions. It's helpful to understand how gums and stabilizers bring about consistent icings and glazes that hold up on the shelf.

Creating the bind

The power of gums is that they bind water. This power comes into play in a multitude of ways. By binding water, gums help with shelf life, freeze-thaw stability and improve icings and glazes' texture and quality.

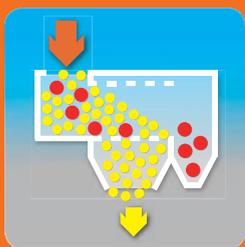
"By foregoing the use of hydrocolloids in icing and glaze formulations, developers run the risk of increased defects to their finished goods," said Anna McKinney, food technologist, TIC Gums. "This could appear in a number of ways, such as sugar crystallization, glaze cracking, slower set times and more syneresis during shelf life."

When it comes to shelf life, controlling moisture is critical because it's a major contributor to staling. By binding up the free moisture in the icing, gums prevent it from moving around. "Gums help restrict the water migration between the icing or glaze and the product, whether that's a cake, snack cake, pastry or Danish," said Marissa Stubbs, bakery account manager, Agropur. "This allows the carrier, like a cake, to maintain the desired product texture and food safety by keeping the water where it belongs to prevent microbial growth."

Stabilizing moisture movement is also critical for

Bakers need to know their final product's needs and processing parameters when choosing gums or stabilizing systems for icings and glazes.

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GUMS AND STABILIZERS

those iced or glazed baked goods that will be frozen and eventually thawed. In moisture-centric applications, the formulation must be stable to maintain quality throughout a freeze-thaw process. “In icings, the gums thicken the entire mass, which helps to stabilize the emulsion while stabilizing the air cells, reducing coalescence,” Dr. Boutte said. “This helps to make a lighter icing with improved shelf life. This is especially important if the icing will be frozen or heat-stressed.”

In the case of glazes, gums not only improve freeze-thaw stability, but they also provide the gelling necessary to set the glaze quickly before packaging, he explained. This allows bakers to move their products quickly without risking the visual appeal. “The gums also reduce or eliminate cracking of the glazes,” Dr. Boutte said.

Wrapped up in moisture control is also the benefit of improved texture and pliability. This enhances the application onto a baked good as well as preservation of the shape throughout production, packaging and shelf life. “The fact that gums can hold water and also control viscosity means they can also help with adhesion to the product and the setting of the icing, and bakers can avoid product sticking to the wrapper or packaging,” said Matt Gennrich, senior food scientist, Cargill.

Improved texture and pliability also apply to consistency between batches regardless of environmental factors. Icings and glazes can be testy when it comes to temperature and humidity because their consistency is so dependent on moisture and heat. “Bakers need to formulate solid products that are untouched by the many external factors they may face including time, temperature, processing speed, raw material inconsistencies and downtime,” Ms. Stubbs said.

For example, a facility’s temperature and humidity will change dramatically between winter and summer, and product has to be equipped to handle those swings. “You can’t change your processing parameters drastically because the temperature in your plant is different from one day to the next,” she said. “Gums will help provide consistent reproducibility between batches and lots.”

Swimming in choices

In icing and glaze applications, gums hardly work alone. Formulators usually choose a combination of gums or incorporate them into a part of a larger stabilizer system. Because of the plethora of gums and stabilizers, each brings something different to the formulations.

“Gelling gums such as agar or gellan gum assist with the structure and set of icings and glazes, allowing formulators to customize the eating experience for consumers,” Ms. McKinney said. “Galactomannans such as locust bean gum or guar work to increase the viscosity of a glaze, improving cling, flexibility and freeze/thaw stability. Acacia can also be used in combination with gelling and viscosifying gums to assist in film formatting to decrease set time as well as act as an

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By binding water, gums help with shelf life, freeze-thaw stability and improve icings and glazes' texture and quality.



emulsifier in products that contain fat or oil.”

When it comes to icing, agar is a go-to gum that brings a lot of benefits to the formulation. It holds water, prevents brittleness and has a low gelling temperature. “At the plant, you’re generally applying icing at an elevated temperature, and the fact that agar gels at a lower temperature gives you a bit more time because it’s not setting up right away,” Mr. Gennrich said.

Agar is also thermo reversible. This means that at high temperatures, the gum is not very viscous, but as it cools, it thickens up. “But if you warm the agar up again, it thins out again,” he explained. “When you’re depositing it, that can be helpful.”

While Mr. Gennrich referred to agar as the workhorse of gums, there are others that may be more suitable for different baked goods or processing parameters. Alginates, for example, are cold-soluble. Unlike agar, which must be hydrated at an elevated temperature, alginate doesn’t need to be boiled to become fully hydrated. The gum still holds water at a low usage rate, making it cost-effective.

Many gums work well in combination. Agar, for all its benefits, works well with locust bean gum to improve functionality. “They do have synergy together,” Mr. Gennrich said. “They help reduce syneresis or watering out.”

Gums can also be a part of stabilizing systems, which include other ingredients such as drying agents and water conditioners, to improve set times and sheen and prevent crystallization. “Gums will often be added as part of a stabilizer blend, which helps to disperse them,” Dr. Boutte said.

Calcium carbonate or calcium sulfate can speed up set times, which accelerates production and prevents icings from being smudged during packaging. Di-sodium phosphate or sodium hexametaphosphate can be used as buffer and water conditioners. Maltodextrin is also a common ingredient in stabilizer systems for increasing sheen and preventing crystallization.

“Preventing crystallization is key in icing and glazes because these are combinations of dissolved and undissolved sugars,” Mr. Gennrich explained. The first part of icing or glaze production is warming sugar, water and a stabilizing blend to create a syrup — the dissolved sugar. The second part is adding in an undissolved sugar, typically a powdered sugar.

“In that temperature transition from when you make the syrup to adding the undissolved sugar, if you’re not cooling it down fast enough, you can actually start to dissolve the powdered sugar, which you don’t want because that increases your chances of crystallization,” Mr. Gennrich continued. “A stabilizing system can help prevent that.”

Gums and stabilizers can help improve an icing or glaze’s ability to be processed on commercial equipment without harming texture or consistency.

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Product and processing

Selecting gums and the building blocks of a stabilizing system depends on a lot of factors that bakers need to consider before jumping in. “Formulators first need to define their objective: days desired, frozen, shelf stable, price,” Mr. Galasso said. “And they need to know their process: cooked or not. Once a clear objective is defined, formulators will be able to narrow in on which choice is best for the product.”

When choosing gums and stabilizers, the end result should be the first concern. “Consider the desired finished product characteristics to narrow the scope of gum options,” Ms. Stubbs said. “There are many to choose from, so knowing what outcome you’re looking for will help.” These ingredients can have an impact on texture and color depending on application: crackle-like for a donut, snap-like for a toaster pastry or a light and airy frosting for a cake.

Gums’ ability to bind water has an impact on all aspects of icings and glazes: texture, consistency and their shelf life.

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GUMS AND STABILIZERS



Without gums or stabilizers present, a glaze can be too thin and not visible on a baked good.
Broilite

“When it comes to color, some gums will provide more opaqueness to the finished product than others,” Ms. Stubbs continued.

Once formulators have the finished product needs in line with gum and stabilizing options, it’s time to turn attention to the processing and storage. “Processing parameters are crucial to choosing the right gums,” Ms. Stubbs said. “Each gum will have varying temperature needs, hydration times, viscosity options and activating agents.”

Hydration needs are key. If a gum or hydrocolloid needs hydration time, the ingredient won’t work effectively

“If you are choosing a gum that needs heat to be effectively hydrated, and you don’t have any heat within the process, it will not allow optimum functionality to be revealed,” said Donna Pechillo, senior scientist, DuPont Nutrition & Biosciences.

Knowing the limitations of manufacturing equipment, specifically the icing depositor or glazer, is also crucial. Here viscosity comes into play, making the icing or glaze flowable through the equipment. With their water-binding abilities, gums and stabilizing systems have a major impact

on viscosity, so it’s imperative that formulators understand the viscosity needed to pump and deposit icings and glazes onto finished product and which gum or stabilizing ingredients will reach that. “Understanding this upfront will lead to at least one less headache down the development process,” Ms. Stubbs said.

Balancing these product and processing needs requires partnering with ingredient suppliers to find the right solutions. “Making sure you are using the proper gums for your specific application is critical to your success,” Ms. Pechillo said. “Through in-depth discussions with your ingredient suppliers, you can use their expertise to choose the proper gum for the task at hand.”

TIC Gums’ “Gum Gurus” team are hydrocolloid specialists who work with product developers to understand the complexities of formulating or reformulating with these ingredients. “Our goal is to take the complexity of selecting the right texture and stability system and turn it into something accessible and navigable,” Ms. McKinney said.

Once formulators have direction, trial and error come into play to finalize ingredients and ratios. “Bakers need to go through research and trials,” Mr. Galasso said. “They need to figure out what doesn’t work so they can decide on what does work best in the products.”

Equipped with the right gums or stabilizing system, icings and glazes can flow through equipment easier, deliver consistent quality, maintain shape through packaging and last longer on the shelf. For an indulgent visual and taste appeal that speaks volumes to the consumer, gums and stabilizers help icings and glazes send a tasty message. ●



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an EXTRA BOOST

Baked goods provide ample opportunity to get more nutrition into the American diet in formulation-friendly ways.

by Donna Berry

Three-quarters of shoppers look for one or more specific ingredients when purchasing baked goods, according to “Power of Bakery 2019,” a new report from the American Bakers Association and Food Marketing Institute that is sponsored by Corbion. While whole grain and multi-grain are the most sought ingredients, the presence of vitamins, minerals and a growing array of functional nutrients appeals to nearly a quarter of all shoppers, particularly younger ones who want more from what they eat.

It’s no wonder bakers are increasingly giving their products boosts of extra nutrition, an effort known as fortification. This is not to be confused with enrichment, which refers to the addition of micronutrients depleted during processing. With both practices, bakers may encounter taste and stability challenges that need to be addressed early in the development process.

There are several approaches to effectively deliver extra nutrition. These include technologies that protect

the nutrients, best practices for weighing and adding nutrients, and smart-blending systems. But, first and foremost, a baker should determine what nutrients to add and why. Is it to enhance nutrient content or make a health claim? Is it to comply with a standard of identity? Is it for a specific demographic known to be deficient in certain nutrients?

“Different age groups and lifestyles have different nutritional requirements, so it’s important to know who the target consumer is before developing a concept,” said Nathan Pratt, R&D scientist, nutrition, Kerry Ingredients. “For example, children need iron, calcium, vitamin A and vitamin D for optimal growth and development, but many kids do not get enough of these, so they are great candidates for fortification into foods kids eat frequently.”

Adding nutrients to baked goods increases costs; therefore, it is paramount that only the right ones in the most effective form be added to the formulation. You also want to make sure that addition fulfills a purpose.

Flour is one of the most commonly enriched and fortified ingredients in the food industry.

Kerry Ingredients

Adding nutrients to baked goods increases costs; therefore, it is paramount that only the right ones in the most effective form be added to the formulation.

“The fortified food should be consumed in quantities that will make a significant contribution to the diet of the population in need,” said Jasmine Monette, professional nutritionist and technical support manager, Lallemand Baking. “The baker needs to make sure that the addition does not create an imbalance of essential nutrients and that the nutrient is stable under proper conditions of storage and use.”

Vitamins, for example, are more sensitive to stress during the baking process. “This means vitamins can lose some activity,” said Annette Bueter, product developer, SternVitamin. “Losses in activity can be compensated by adding overages, which means we are adding higher vitamin levels than what is required on the label of the final product. Minerals are less sensitive than vitamins, but they can have an impact on the sensory properties of the baked goods.”

Nutrient distribution and interactions must also be evaluated. The latter may change over shelf life and have a negative impact on taste and appearance.

“Differences in particle size may cause incomplete blending or segregation of nutrients,” said Mel Mann,

director of innovation, Wixon. “Minerals such as calcium may disrupt bubble formation — gas leavening — during baking, resulting in lower rise. “Bioavailability should also be considered,” he said. “There may be solubility issues because of nutrient interactions.”

Encapsulation can delay or prevent interactions. “In the end, it all depends on the levels and the combinations of micronutrients in the final product,” Ms. Bueter said.

Enrich vs. fortify

Historically, fortification was all about adding vitamins and minerals to everyday foods to prevent deficiencies that can lead to disease. This has evolved to include adding nutrients to help the body function at its best.

“Bakers who fortify their products have an opportunity to create functional foods that provide broad nutritional benefits, or they can reach into highly desirable niche food markets by developing products tailored to specific health conditions,” said Laura Tagliani, director of science and compliance, Quintessence Nutraceuticals.

Markets like bakery and snacks that have matured often start to converge into different segments as companies differentiate their products and gain consumer attention, observed Sam Wright, CEO, The Wright Group.

“Segments can be based on age, gender, lifestyle considerations, health conditions or even time of day,” he said. “The permutations are endless, and each segment would require a different combination of nutrients to support the market positioning.”

Take calcium fortification. “This is important for healthy development in children, as well as necessary for maintaining bone health throughout adulthood,” said Matt Patrick, technology, applications research and technical services, Delavau Bakery Partners by SaffPro.

This bone-building nutrient is not inherently present in grain; however, varied grain-based foods are commonly consumed by the demographics that need calcium. Young children, for example, eat breakfast cereals and snack crackers. Adding calcium to these products for bone development can round out these products.

While older children and young adults would also

Fortifying foods children already love, like crackers, with extra nutrition they need, like calcium, can help bakers reach target consumers.

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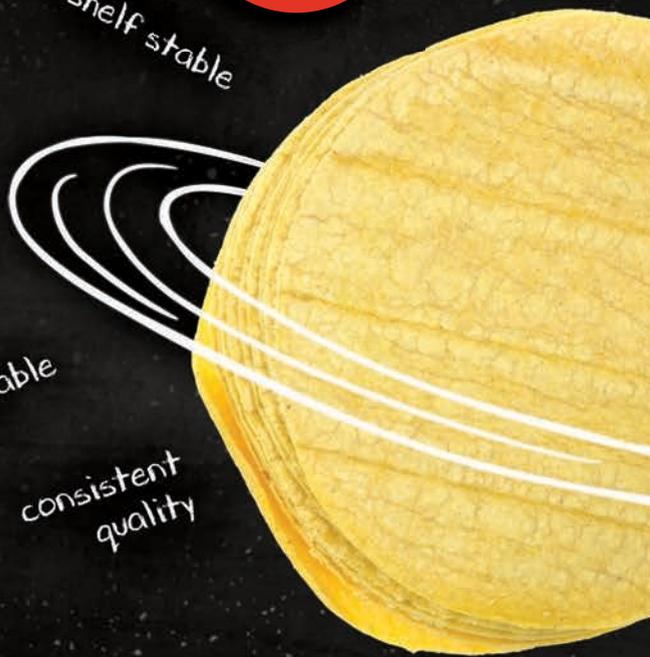
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benefit from calcium, their nutritional needs and diets are different. This demographic gravitates toward portable bars and may benefit from protein and even a dose of caffeine for an afternoon energy boost.

Keep in mind the US Food and Drug Administration does not require fortification or enrichment for any food product; however, for products described as “enriched,” there is a standard of identity that must be maintained.

Flour is one of the most commonly enriched and fortified food ingredients. In the US, the Code of Federal Regulations specifies the exact amount of five nutrients

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Flour is one of the most commonly enriched and fortified food ingredients.

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— folic acid, iron, niacin, riboflavin and thiamin — that must be added to enriched flour and provides specifications for other optional nutrients. Other countries have their own fortification specifications based on the nutritional needs of the population.

“When wheat is milled, the bran and germ from the wheat kernel are removed, and the endosperm is processed into white flour, stripping certain vitamins and minerals,” said Cary Efurd, national sales manager, Corbion. “Flour enrichment adds those back, restoring essential nutrients that are lost during processing to meet mandatory regulations.

“When adding vitamins and minerals at the milling level, consistency is key,” he continued. “There are cer-

tain variables at the mill to overcome in order to meet the minimum requirements and guidelines for flour enrichment outlined by the FDA.”

This is where premixes are useful. Suppliers carefully combine micronutrients at specified levels to ensure the quantified dosage is delivered to the consumer through the end of the product’s shelf life. “Premixes generally come from suppliers skilled in manufacturing and verification of content, including overages needed to account for losses from baking and shelf life,” Mr. Mann said.

Premixes are also pre-portioned to prevent nutrient imbalance and ease-of-use. “In the premixes, the level of vitamins and minerals are pre-portioned according to the ratio of daily nutrient requirement,” Ms. Monette said.

Even with premixes, however, there can be taste and texture challenges. “Flavor challenges can be overcome through techniques like encapsulation and flavor-masking,” Mr. Patrick said. “Overcoming textural challenges usually requires physical manipulation of the particle involved.”

For example, Lesaffre Yeast Corp. has overcome calcium fortification challenges through patented technology that uses calcium carbonate at a specific particle size together with solubility manipulation.

It’s important to consider how much of each nutrient will be present in each serving because marketers cannot control how much product a consumer will eat in one sitting. Sensible fortification practices must be employed to protect consumers from over-indulging.

“All vitamins and minerals have a daily requirement that we need to make sure to get enough of, as well as an upper limit we should not exceed,” Mr. Pratt said. “For example, the daily recommendation for vitamin D is

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FORTIFICATION



Consumers already reach for bars for nutrition boosts and meal replacement, making them an obvious choice for fortification.

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15 micrograms per day for most adults. The upper limit is 100 micrograms per day. Smart, safe addition levels would be 10 to 20% of the daily value of a nutrient per serving. Remember, people eat many different foods over the course of a day, so they do not need to get all their nutrient requirements from one food at one setting.”

Choices of fortificants

At the Institute of Food Technologists’ annual meeting and food exposition held in New Orleans in June, suppliers showcased fortified and enriched baked goods.

The Wright Group sampled a keto-designed peanut butter protein snack bar. It contained an array of microencapsulated and organic-compliant vitamins and minerals as well as soy and dairy protein, encapsulated omega-3 powder and a 60% medium-chain triglycerides powder, which is unique to the company.

Watson, Inc. showcased potassium-fortified snack bar bites. The prototype uses a premix containing a number of vitamins and minerals and allows for a “good source of potassium” claim. “We designed a special microencapsulation system to mask the salty taste of potassium,” said Moira Watson, vice-president of marketing and communications, Watson. “The coating matrix had to survive the bar-making process, which involves high heat, high moisture levels and acidity.”

The premix included iodine, which was delivered through a potassium iodide and calcium sulfate blend microencapsulated by an acacia gum matrix for added stability. “Since the iodine in this formula is a very small amount, this process enables accurate delivery

An advertisement for PreventASe. The background is a photograph of a woman and a young girl sitting at a table, eating. The woman is smiling and looking at the girl. The girl is holding a spoon. The text is overlaid on the image.

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Baked goods' position as ideal carriers for nutrients mean fortification will remain a staple in the industry and could gain momentum in the future.

and homogenous distribution," she said.

Quintessence Nutraceuticals markets a nutritionally potent extract of the pharmacological isolates from the bran and germ layers of rice. The ingredient is made through a patented hydrolyzation and extraction process that makes the nutrients in rice bioavailable and bioactive. The ingredient supports in-demand label claims such as sustainable and 100% non-GMO.

Delavau offers a system that delivers sodium reduction and calcium fortification in baked goods. "With this fortification technology, we have achieved 'good,' 'excellent' and 'glass-of-milk' levels of calcium in baked goods," Mr. Patrick said. "We're able to deliver a glass-of-milk level of calcium in a 6-in. sandwich roll without negatively impacting the sensory experience."

Going hand-in-hand with calcium is vitamin D, a nutrient also associated with bone health. It is considered a nutrient of concern with deficiency linked to certain chronic diseases. Lallemand offers a natural, vegetarian ingredient for vitamin D fortification of baked goods. The company developed a process that allows baker's yeast to produce vitamin D when exposed to ultraviolet light.

"The vitamin D yeast is available as a concentrate," Ms. Monette said. "This type of product is ideal for industrial bakeries as it can be used to fortify bread by adding it to regular cream yeast. For more accurate vitamin D dosing in smaller batch sizes, we offer premixes."

Wixon sells several flavor-masking technologies that can help cover the chemical notes of certain vitamins and minerals. "These are custom designed; there is not a single fix for every problem," said Roni Eckert, senior food scientist at Wixon.

Baked goods' position as ideal carriers for nutrients mean fortification will remain a staple in the industry and could gain momentum in the future. "Vitamins and minerals are generally accepted ingredients in typical baked goods, as they are usually part of the flour system," Mr. Mann said. "In response to consumer avoidance of chemical-sounding ingredients, expect to see increased used of whole food ingredients with high concentrations of desirable nutrients." •



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breaking down **BARRIERS**

Manufacturers in one of the industry's most stalwart categories soar to new heights.

by Dan Malovany

Some jobs require a specialist. Others need a jack-of-all-trades. In the highly diversified bar market, where varieties vary from cold-formed nutritional options to baked breakfast and grab-and-go alternatives, branded producers and copackers must choose between production lines that provide maximum versatility or sheer volume — or investing in a combination of both.

“The flexible, multi-purpose lines tend to be much smaller,” noted Kevin Knott, key account manager, Franz Haas, a part of the Bühler Group. “If you’re a co-manufacturer and making small batches, you’ll need flexibility and need to changeover quickly. Changeovers can be difficult, especially if protein is involved, because protein can be an allergen.”

Let’s put size into perspective. Cold-forming operations range from 300 to 1,200 mm in width for high-speed dedicated lines. On extruded baked goods systems, Mr. Knott pointed out, those dimensions go from 1 to 5 m across.

Certainly, multipurpose lines don’t provide as much capacity as dedicated ones, which can drive margins while meeting market demand. However, these typically

smaller, more flexible lines require a substantially lower capital investment and might be less expensive to run over the long haul, especially if the production schedule calls for multiple changeovers on a given day.

“There’s not as much cleaning, which can cost a lot of money,” Mr. Knott said. “With two or three smaller lines, changing over isn’t as much of a hit to your operation as a big, long line.”

Managing a morphing market

For decades, bars have adapted swiftly to fad diets and vacillating consumer trends. As a result, the now \$7 billion market experienced 17% growth from 2013 to 2018 according to Mintel’s “Snack, Nutrition and Performance Bars” report from February 2019. However, Mintel indicated the steady year-over-year growth is showing signs of a slowdown as other food and drink categories provide convenient options for healthier lifestyles. The report noted that even protein’s importance is beginning to indicate signs of waning.

Such challenges will require the bar category to reinvent itself again and redefine how it’s serving consumer

New product innovation often requires investment in versatile and high-volume production lines.
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BAR TECHNOLOGY

needs. For these manufacturers, those initiatives clearly translate into ramping up new product development that pushes potential capital expenditures toward flexible equipment and production lines that will handle an onslaught of yet-undefined innovation.

“People who use Reiser’s Vemag do not want to dedicate a line to a single product,” explained John McIsaac, vice-president of business development, Reiser. “The Vemag system is based around quick changeovers for multiple products, which mean not only different flavors but also different shapes and sizes.”

If a producer wants to run a rectangular bar in the morning and a D-shaped one during the afternoon shift, the changeover typically takes around two minutes, according to Mr. McIsaac.

“Our customers and potential customers are constantly challenging us with different flavors, viscosities and shapes,” he said. “Therefore, our equipment not only needs to handle today’s products but also those our customers have not yet dreamed up.”

Specifically, the Vemag double-screw pumping system along with its Reiser-engineered cutting attachment can be used on all varieties. “Where we need to use more specific, dedicated equipment is with the production of filled bars,” Mr. McIsaac observed. “We have developed a number of engineered solutions to accomplish this.”

Such flexibility is found not only in makeup but also throughout an integrated production line. “Our precision shuttling conveyors can load a pan for baking or load a continuous oven band or freezer,” Mr. McIsaac

said. “Or we can run directly into a flowwrap packaging machine without any extra labor.”

However, Sebastian Clemens, sales account manager, Bühler, cautioned to watch out for certain changeovers, especially since many proteins can be allergens. “High-capacity lines are more efficient, but the market also changes frequently, and lines must be flexible,” he said. “As a result, sanitary design of equipment and quick changeovers are essential. We have focused on these challenges and have developed solutions the industry now expects.”

While food safety remains a priority, don’t forget to consider more functional factors during bar manufacturing, especially when it comes to rolling out new products or scheduling runs on multipurpose lines. “It all boils down to viscosity — it’s the main issue for production. You want products with viscosities in a similar range,” Mr. Knott advised. “You don’t have to change drives or need multiple drives on the same line. You can use the same equipment and just focus on cleaning between product runs.”

Bühler will exhibit its SnaxFix automatic bar production line at the 2019 International Baking Industry Exposition, to be held Sept. 7-11, in Las Vegas. According to Mr. Knott, it provides entry-level production of cereal and other cold-formed bars or serves as a pilot plant line for testing new products before ramping them up on a higher speed operation.

Having an extra extruder head to clean will streamline efficiency by cutting downtime when working with

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allergens or even organic ingredients. During changeovers, sanitation needs to swap out the extruder head with a clean one, then roll it over to a separate room for scraping, cleaning and wet washing while production keeps running. "This allows you to keep multiple lines running," Mr. Knott said. "If you have three extruders, you just need one spare head for changeovers."

Some cold, hard facts

The bar category also faces competition from other snacks as eating occasions reach upwards of six times a day. According to Mintel, leveraging on-the-go snack appeal should allow the bar category to counter prevailing headwinds from cookie, confectionery and conventional snacks — and even from mobile meal replacement foods. Highlighting their nutritional appeal, which remains the primary draw to the core consumers in this diversified bar segment, will provide an additional critical point of differentiation in the battle for share of stomach.

Operationally, such trends have prompted branded companies and their co-manufacturing partners — as well as incubators testing the creative limits of the category — to rely on experts in cold-formed and baked bar production.

Prior to production, food safety must be carefully considered. Because there is no kill step during a baking process, cold-formed products typically use precooked ingredients, which are incorporated with dry mixes to add vitamins, nutrients and texture. Processing the protein also provides other product attributes. "In many cases, for instance, protein is processed or transformed to provide a softer texture to mask with natural flavors," Mr. Knott said.

In other cases, the nutritional composition and visual appeal of bars are critical to their success in the market. "The main difference in

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An enrober and cooling tunnel set the attractive finish on multiple varieties of snack bars.
Bühler Group

manufacturing candy vs. cold bars is that candy bars are typically enrobed — covering the formed piece — and cold-formed bars are much more nutritious, and the finished bar needs to have a perfect finish,” Mr. Clemens said. “The surface needs to be size-controlled as well as perfectly formed.”

While baked lines require ovens, cold-formed bars may require extensive cooling tunnels and other systems to properly set and chill the bars, especially after enrobing and before they enter the packaging department at rates of often a couple hundred a minute.

“Enrobing the product covers a multitude of sins,” Mr. Knott pointed out. “If you have a nice, coated finish to the product, you’re not as worried about what it looks like inside the bar. The consumer just sees the enrobed finish and not the extruded bar finish.”

From a baked perspective, many similarities exist between cookie and bar manufacturing. “Both involve portioning a product that retains the characteristics the producer wants to maintain — with great piece identity, weight control and reduced labor,” Mr. McIsaac observed. “From a product development perspective, cookie and bar producers are among the most creative people we know.”

During the baking process, many manufacturers prefer to maintain the bars’ more natural, “naked” or unprocessed look. “Typically, you don’t want to pick up any color when baking a bar, especially not a color like you see with a cookie with its nice, golden toast color,” Mr. Knott said. “That’s not the case with an extruded energy bar.”

One tough process

Additionally, bar formulas and processes often result in vastly different mouthfeel than their cookie counterparts. “An energy bar is tougher to eat than a cookie,” Mr. Knott said.

And it’s tougher to make. “The mixing technology is different. It’s more of a blend than an actual mixing of the batch that you get with a cookie,” he added.

Likewise, the motors on extruders used for bars need to be ramped up for proper processing. “We have to up-

grade the side of the drives and the gearbox — the whole extruder is much beefier for a protein or energy bar than it is for a cookie,” Mr. Knott said. “It needs to be substantially so because the dough is much tougher to extrude.”

Because bars incorporate molasses, syrups and other viscous binders, such “blending” of a sticky batch requires greater torque and energy than what’s needed to make a

The nutritional composition and visual appeal of bars are critical to their success in the market.

cookie batter. Often a mixer listed at 1,000-lb capacity can turn out 600-lb batches because of the batch’s tacky texture.

Wirecut machines have been used for decades to form products for both the cookie and confectionery markets, and most recently, they have expanded into nutritional, protein and breakfast bars, according to Sam Pallottini, director of cookie, cracker and pet food sales, Reading Bakery Systems (RBS).

He noted the new RBS servo-driven wirecut model offers advanced “game changing” technology, but the operation of it is fairly simple. It comes with a pair of saw-tooth feed rolls that gently push the batter through the filler block and die to form the bar. This new wirecut design enables manufacturers to select a head that best suits forming their products.

Mr. Pallottini added that a standard head for extruding soft bars and cookies comes with the machine. It consists of a 250- or 312-mm-diameter feed roll, filler block and a 125- or 165-mm-wide die plate, depending on the product’s characteristics. “This head can be interchanged with a specialized design for coextrusion to run two dough cookies, fig bars, breakfast bars and two-color cookies,” he said.

For some high-protein products or stiffer doughs, RBS offers a heavy-duty head design. “This comes with larger feed rolls, stronger die support rails and larger

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gearmotors,” Mr. Pallottini explained. “The heads can all be interchanged, enabling the customer to run a wide range of products through a single machine and, therefore, making the line very flexible.”

Overall, Mr. McIsaac said, bar manufacturing means handling tough products without destroying their components. “While we handle the product gently, we do have the power available in our small and large output machines to handle the stiffest dough and mixtures,” he said. “Our engineers tailor the cutting systems for speed, accuracy and clean cuts. We use smooth plastics and polished stainless steel. Typically, we do not need or use coatings, rather we use materials geared to the product to avoid sticking.”

Maintaining the integrity of inclusions and particulates ensures not only product quality but also manufacturing flexibility. “Because co-manufacturers are always searching for the most versatility possible in the equipment they choose, the request we get the most is for a machine that can maintain the integrity of the particulates,” said John Giacoio, national sales director, Rheon

USA. “This is not always as easy as it may sound.”

Specifically, he added, production complexity directly correlates to the amount of particulates in the final product and those additional materials such as creams that act as a lubricant to move them through the machine with minimal damage. “It helps that our co-extruders are known for how gently they handle particulates,” Mr. Giacoio said.

Many co-manufactures are also looking for the ability to run different layers in a single bar. “Not only can the Rheon co-extruder provide a dual-textured product, but we are able to offer up to four different materials in the same product,” he observed. “This takes versatility to a whole new level.”

Rheon’s co-extruders rely on a cutting section, called an iris, that operates like a six-piece shutter on a camera lens. “As it closes, it cuts, wraps and seals our extrusion,” Mr. Giacoio said. “The internal layers are completely encapsulated.”

Mr. Giacoio refers to the systems as “continuous co-extruders” because the design of the shutter cuts mate-

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Long used to make cookies, new designs of wirecut machines effectively produce breakfast and nutritional bars.
Reading Bakery Systems

rial on the fly. “Our shutters are also able to cut very sticky materials without any problems,” he said.

Bringing two or more product streams together, whether layered or enrobed, provides a challenge that can be met. “We can do it at high speed with quick changeovers,” Mr. McIsaac said. “It can only be done with versatile pumping systems and customized attachments, which are two of Reiser’s and Vemag’s strengths.”

As co-extruding in layers or concentric circles has become more popular in the market, Bühler relies on systems that handle materials with a wide range of viscosities to create double- or triple-layer bars. Once again, however, manufacturers should monitor the viscosity of all fillings and batters closely to minimize production issues.

“The differentials in viscosity become a greater issue when you have coextrusion because you have two different materials with different water activities,” Mr. Knott said. “They don’t always play nice together. To make it work, we use multiple extruded heads that are servo controlled. One rate of flow is different from the other rate of flow.”

Prior to packaging, he added, many bar producers rely on ultrasonic cutting for sticky or gooey coextruded products. “You get a much cleaner cut that way,” Mr. Knott said.

With the category facing headwinds and the market changing, bar producers should look to new products to address consumers’ functional needs, according to Mintel’s report. And that means adapting on an operational level as well. “A line should be designed for today’s and tomorrow’s products,” Mr. McIsaac said.

That’s how the category will turn headwinds to tailwinds and move the bar to the next level with healthy and snackable products for years to come.

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ENSURING SAFE TRAVELS

Following proper procedures protects belts and conveyors from a host of operational issues.

by Dan Malovany

As baked goods race along a production line at hundreds of pieces an hour, mishaps quickly multiply to mayhem, accidents become chain reactions and unanticipated incidents snowball into an avalanche of unscheduled downtime or something worse. In plants running on a 24/7 schedule, preventing problems from steamrolling into a train wreck on fast-moving conveyors requires a well-established protocol for sanitation and maintenance that's designed to leave nothing to chance.

Often that process begins by answering a question about belts and conveyors that don't receive the due diligence mixers, dividers and other systems get. "Ask yourself, 'Why do I need to clean the conveyor?'" suggested Bobby Martin, executive product manager, conveying systems, AMF Bakery Systems.

The query sounds simple, but the answer is a bit more convoluted. "Some conveyors need to be cleaned to ensure optimal performance and efficiency" Mr. Martin pointed out. "Some conveyors need to be cleaned for food processing or food contact, and others need a simple basic cleaning to remove dust and dirt."

And it gets more complicated depending on the type of bakery or snack operation. "Dough can be sticky and cling to equipment, drying out over time and becoming harder to remove," said Cari Rasmussen, food safety specialist, Commercial Food Sanitation, an Intralox company. "Some products are developed to include glazes, fillings and toppings, which can be difficult to clean because of product characteristics such as being sticky or oily; even very small particulates may get into cracks and crevices of equipment. These can all make sanitation a little harder to execute."

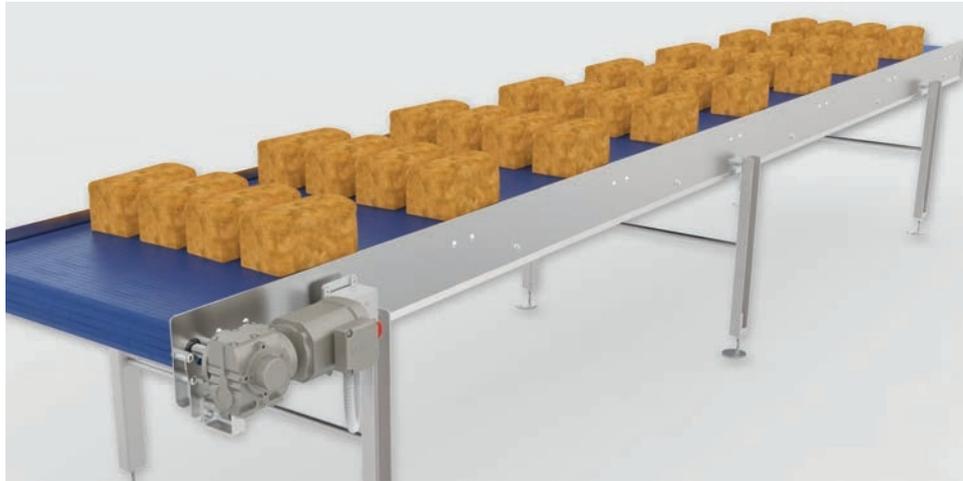
Even in bread and bun bakeries, failure to clean on a regular basis could damage a conveyor's performance. "Flour in the atmosphere and sugar are abrasive, and you're going to have a lot of wear between the belt and other components on the conveyor," said Jonathan Lasecki, chief engineer, Ashworth Bros. "Pins may wear, or you might see metal or plastic debris that can cause the belt to abrade quicker than if it were cleaned."

As a result, scheduled cleaning is directly linked to a conveyor's reliability, even with ambient spiral coolers that don't seem to need a ton of TLC to do their jobs. "These

Predictive monitoring systems track a conveyor's performance and schedule maintenance to reduce unscheduled downtime.

Ashworth Bros.

Transitioning to more hygienically designed equipment that's easier to inspect and maintain could slash sanitation and changeover time.



New sanitary-designed conveyors reduce changeover times, labor costs and food safety risks.
AMF Bakery Systems

systems are designed with specific friction factors in mind, and if the system is not routinely cleaned, these friction factors can change considerably, adding tension to and shorting the life expectancy of the belt,” said Bryan Hobbs, Ashworth’s sales and service manager of North America.

From a product safety perspective, the oven’s kill step has provided a longstanding drape of security for the baking industry. As a result, it’s only been since the implementation the Food Safety Modernization Act that many bakers have ramped up their sanitation procedures to meet regulatory requirements. “In the baking industry, the type of complete washdown and sanitation performed in the protein industry, particularly in meat and poultry, has not been the traditional method of cleaning” said Rick Spiak, vice-president of sales and marketing, Wire Belt Co. of America.

Heightened allergen awareness and possibilities of pathogens getting into the process — much of it spawning since the Peanut Corp. of America salmonella outbreak in 2009 — has prompted a renewed era of due diligence. “Food industry personnel are now considering the need to do a thorough washdown and cleaning between allergens, especially with peanuts,” Mr. Spiak said. “While warning labels may say, ‘This product may contain peanuts,’ processors are also looking at how a thorough washdown can be conducted in a plant where that has not traditionally been done. Where dust or other types of remnants from ingredients are present, some are thinking about a vacuum clean-up and then perhaps a washdown.”

He added that potato chip, pretzel and other snack facilities need to carefully monitor changeovers between seasonings, spices and flavorings that contain various dairy, egg, wheat or other allergens. Even greater caution is recommended with certain other products. “Energy and nutrition bars are a whole different animal with nuts and allergens,” Mr. Spiak said. “You have not only all the allergens but also all the ingredients that hold the snack bars together, which is usually some conglomeration of sugars and that, because of its stickiness, could complicate equipment maintenance.”

Processors have become keenly aware of food safety risks, and how they can reach well beyond the internal costs of a recall itself. “Those risks to the processor include fines from government regulatory bodies, the bad press they may receive, or the damage to the brand name,” Mr. Spiak said.

Know when to clean

A well-developed cleaning protocol will extend the service life of the belts. But when something is about to go wrong, the belts and conveyors typically provide signs that indicate service is needed, according to Kevin Quinn, sales manager, Douglas Machines Corp.

For example, watch out for spills that not only put a dent in efficiency but also present hazardous working conditions, affect employee safety, and cause equipment damage. Likewise, look for mistracking. “Buildup on the conveyor belt can cause it to misalign, get off-track or result in uneven belt wear,” Mr. Quinn explained.

Carryback is a root cause of cross contamination. “During the manufacturing process, product moves along the conveyor belt, and inevitably residue will stick to the belt surface,” Mr. Quinn said. “It builds up daily and eventually causes damage and/or downtime, lost productivity and health issues for workers and consumers.”

Moreover, belt slippage caused by a lack of improperly cleansed conveyors results in using excess energy and could spark costly interruptions in production. Mr. Quinn noted that Douglas Machines’ Cyclone belt washers are designed to remove fats, sugars, allergens and oils from a wide variety of open mesh and solid conveyor belts. Although the inline washer does not sanitize, he added, a chemical disinfectant sprayed during post-cleaning will remove pathogens.

Sometimes it takes more than power washing. During a scheduled deep-cleaning process, sticky and oily residue requires rubbing, brushing or scraping, according to Mr. Martin.

Bakers sometimes forget to use a little extra elbow grease



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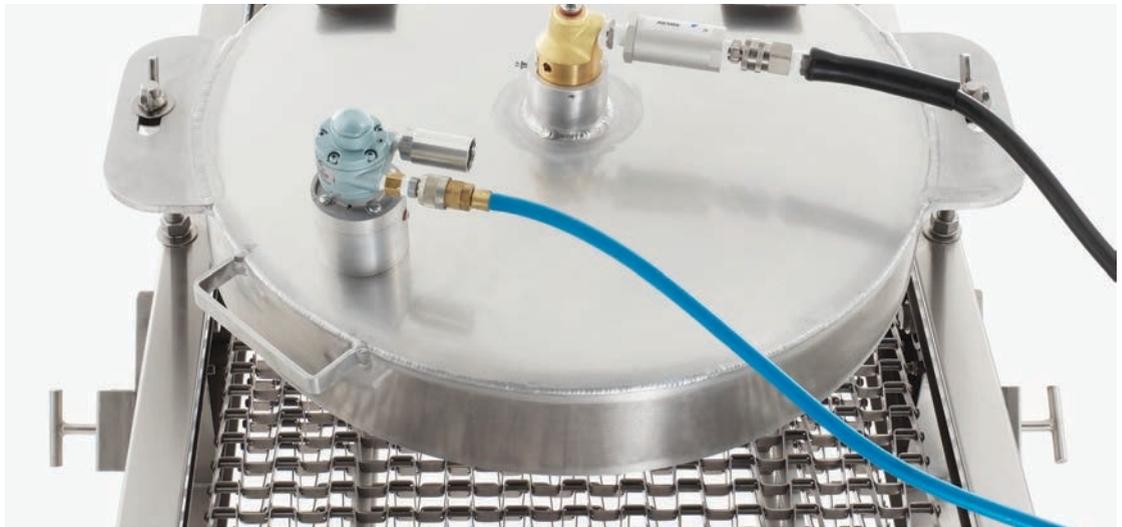
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Inline belt washers remove fats, sugars and allergens from a wide variety of conveyor belts.

Douglas Machines

for proper sanitation. “To effectively remove the proteins, oils and other materials from the surface of the belt or conveyor, use manual scrubbing or spray bars for some components,” Ms. Rasmussen said. “If mechanical action isn’t regularly applied, excessive buildup and the formation of bio films can occur, making it more difficult to clean.”

Moreover, Mr. Lasecki cautioned that using bleach, sanitizers and other chemicals may make belting and conveyor components embrittle over time. “A sudden movement or vibration can then cause a belt to fracture or break, potentially affecting the operation of the belt,” he said.

Additionally, Ms. Rasmussen observed, chemicals may cause rusting of non-compatible metals, which can lead to foreign material contamination. Using wet-cleaning methods on some belts such as fiber-backed or fiber-reinforced, will allow water to soak in, which makes them difficult to dry out and leads to molding inside.

Wire Belt recommended a three-step process for cleaning, starting with dislodging and removing visible large food or debris from the belt and paying special attention to drive and idler components, shafting, belt support and conveyor frame. Pre-rinse with water between 125 to 130°F with pressure between 150 and 300 psi. Then apply the detergent at 150 psi or per the manufacturer’s directions. Remove detergent from the conveyor system before it dries but after the recommended amount of time has elapsed.

Proper rinsing is often overlooked, which leaves a residue that raises friction values and tension on some systems. “When processors clean their equipment, we noticed they don’t properly rinse off chemicals that they use,” Mr. Hobbs said. “They may not have adequate water supply to rinse, or hoses may not be at full pressure and water may be leaking out of clean-in-place (CIP) systems. As a result, belts don’t get rinsed off very well to remove all of the cleaning chemicals.”

Various belt designs require different cleaning methods.

Mr. Lasecki pointed out that the open structure of mesh overlay and wire belts lend themselves to high-pressure washes where the water deflects away. However, high-pressure spray on solid belts will result in backsplash where the stream of water shoots back toward the nozzle, resulting in a less than satisfactory cleaning.

Dry vs. wet cleaning

Most bakeries follow dry cleaning methods — or, at least, minimize the use of water as much as possible — as a part of their standard operating procedures for cleaning. “In bakeries, you have flour and yeast, and when you add water, it grows,” Mr. Lasecki said. “Some bakeries may think that water is not the best cleaning solution because it’s going to create more problems than alleviating them.”

Many older bread and bun bakeries also don’t have adequate floor drainage or wastewater reclamation, according to Steve Collison, senior account manager, MK North America. “And we’re not sure they should because there are current methods to clean without lots of water,” he said.

While most bakeries urge “less is more” when using water, wet cleaning is an option that many effectively employ. “At Ashworth, we recommend the use of water to remove contaminants from the belt,” Mr. Lasecki said. “Otherwise, use a CIP system to clean the belt and also thoroughly clean the belt support structure.”

Some bakeries now separate the handling of raw ingredients and product from production of finished items for food safety reasons. “The traditional thought is that the heat-cycle kill is the answer to food safety. However, if processors are not diligent about the separation of steps in the appropriate order, and most are, but for those who have yet to consider process changes, the kill step is not always the silver bullet,” Mr. Spiak said. “Products may get contaminated after baking or frying. The right temperature kills almost all bacteria, but what if some raw ingredient gets onto

the equipment and/or a finished baked good, and that ingredient has an allergen contaminant or a pathogen? Surely wet cleaning will become a consideration for any processor that has these types of risks.”

Several bakeries rely on CIP systems. “CIP systems are more commonly used on a conveyor when running a modular belt,” said Greg Stravers, senior vice-president and head of PFI, a division of Precision Inc. “This helps to clean the niches that are created by the many hinges and modules that make up the belt.”

Mr. Stravers added that positive-driven extruded thermoplastic belting has much less need for the CIP systems because it’s a solid, homogeneous material. “However, in some positive-driven applications, the conveyors can be installed in areas that are elevated and less accessible for cleaning, and CIP systems can be installed in those areas that are difficult to access.”

Using CIP systems on conveyors requires the infrastructure and utilities to support it, such as proper drain placement and sufficient water supply. “Additionally, the design of the conveyor itself may not allow for the use of CIP systems,” Ms. Rasmussen observed. “Upgrading to CIP systems can address hard-to-clean areas, such as sprockets. An additional incentive is that these automatic systems decrease the resources and time needed to manually clean a conveyor, allowing sanitation personnel to focus on other tasks. Keep in mind, however, that the CIP cycle does need to be monitored.”

As a result, bakers need to balance out what type of cleaning is most effective and economical for their operation. That’s why many companies today incorporate sanitary design into their return-on-investment (ROI) calculations for new equipment. “A more sanitary design offers a better ROI because even though labor is still required to clean each conveyor, the time for cleaning is heavily reduced,” Mr. Martin said. “Less time required to clean is less expensive on labor and may result in more uptime production.”

Mr. Stravers recommended designing conveyors to eliminate any hidden areas. Additionally, rounded or sloped surfaces will prevent product buildup. “Conveyors should have removable bed rails — by hand, no tools required — to not only clean the rails more effectively, but to access the framework,” he said. “Conveyor take-up assemblies should be simple and made with no threaded rod — acme threads, if necessary — to make it easier for sanitation.”

He added that any conveying equipment that isn’t easily dismantled in order to effectively clean unavoidable harborage poses a risk to production.

Replacing those worn parts

Because belting carries finished goods, it receives the most attention, but bakers need to ensure that the conveyors’ frames and key components are adequately scrubbed.

Playing it safe with acetal belting

It’s easy to see why acetal belting is popular for conveying products through freezers and other areas of the plant. “It is strong, tough and has a low coefficient of friction against many materials available,” said Adam Bannerman, lead engineer of Intralox’s food new product development group.

However, it’s also flammable. “If acetal ignites, the flame it generates is really hard to see,” said Bobby Martin, executive product manager, conveying systems, AMF Bakery Systems.

Specifically, acetal burns with a bluish or clear blue flame. “You’re likely to smell the formaldehyde from acetal before you see the flame,” said Kenneth King, commercial support manager, Ashworth Bros.

Mr. Martin added that acetal is the go-to material up to the oven loader whereas nylon is used due to its proximity to the heat source. However, acetal should not be used post-oven for cooling or anywhere near high heat. Nylon material is preferred, sometimes up to the packaging area.

For spirals, Intralox uses a special material called SELM, which stands for self-extinguishing, low-moisture absorption. For other applications in a bakery, Mr. Bannerman said, heat-resistant nylon belting mitigates the risk of fire in hazardous areas.

Mr. King suggested placing fire systems in close proximity to spiral systems as a safety precaution when using acetal belting. Additionally, maintenance personnel need to shield the plastic belting, especially if they’re welding on, above or adjacent to a conveyor. “When you weld something, you’re going to get sparks,” he noted. “If that area is not shielded well and sparks lay on the belt, that’s the ignitor.”

Ashworth labels acetal belting to signal its risk of potential flammability.

Because belting carries finished goods, it receives the most attention, but bakers need to ensure that the conveyors' frames and key components are adequately scrubbed.



Scraping away residue and caked-on material along with other proper sanitation practices ensures food safety and enhances a conveyor's long-term performance.

Intralox

There's something to be said about having a mean, clean, smooth-running machine. "Often bakers overlook cleaning the support structure underneath the belt," said Kenneth King, commercial support manager, Ashworth. "Many bakeries use flour or sugar or glazed icings, and any of those materials that build up on the rails are going to cause dramatic increases in friction that could lead to damaging of the belt as well as the system. The support structure on any conveyor has to be focused on as much as the cleaning of the belt."

Often the top of the belt and side of the framework receive priority treatment. "The wear strips, sprockets and inner and lower framework also need to be cleaned to help minimize product buildup," Ms. Rasmussen said. "Buildup can lead to operational challenges and quality issues due to mold growth and pest infestation."

Mr. Martin advised storing a strategic supply of spare parts to swiftly repair the most common breakage. "Sprockets follow the belts in order of importance to keep in inventory, but most of the time, sprockets are replaced when they get worn out," he said. "The motors and reducers are to be kept in inventory, but these items can be considered predictable to fail. Some parts of a conveyor, such as wear strips or side guides, don't last as long and will need to be replaced."

For predictive maintenance, Mr. King noted that Ashworth's SmartSpiral spiral monitoring system tracks spiral system performance, allowing bakers to schedule maintenance before parts fail. This system will be featured at the International Baking Industry Exposition (IBIE), which runs Sept. 7-11 in Las Vegas. "You can go from a reactive maintenance approach to a more predictive one where you anticipate what needs to be attended to well ahead of time so that you can schedule downtime to do appropriate maintenance," he said.

Upgrading for uptime

Transitioning to more hygienically designed equipment that's easier to inspect and maintain could slash sanita-

tion and changeover time. Wire Belt's products are put through testing to earn acceptance certificates from the USDA Agricultural Marketing Service, Equipment Design Review Section, which relies on third-party private contractors. "That certification tells the customer that Wire Belt's product meets NSF/ANSI/3-A 14159-3-2014 requirements and shows the user that this is a product that is food-safe if properly cleaned and maintained," Mr. Spiak said.

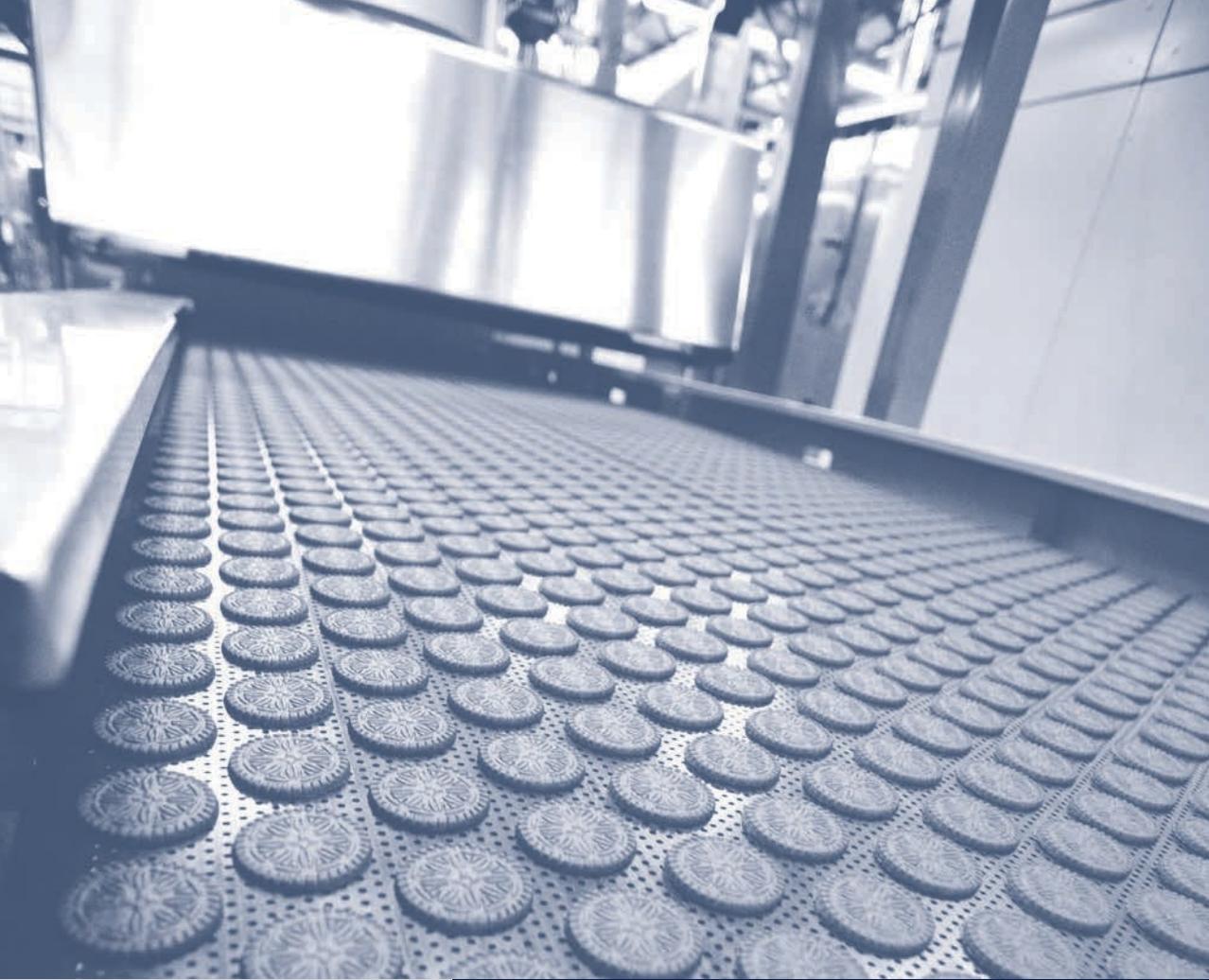
At IBIE, AMF will be promoting a new rod-less horizontal bread diverter that is enclosed in a loop of S-Series, sanitary-designed conveyors. Additionally, the company will use augmented reality to allow bakers to virtually tour a bun and bread line to explore its conveying systems' dough, pans, products, baskets and basket stacks.

Mr. Collison noted that the type of food and its characteristics — low-moisture, wet, sticky, frozen, hard and soft — ultimately impact conveyor and belt selection. "Choosing the conveyor and belt is critical to reduce difficulty in cleaning and cross-contamination," he said.

Scott Swaltek, vice-president of engineering, Capway Automation, pointed out that conveyor and belt design — and their sanitary protocols — vary greatly by their application on the production line. "Make-up areas that tend to be in a washdown environment require belts that can withstand moisture," he said. "Plastic modular belting made of nylon or non-coated fabric belts — each of which can absorb moisture — have limited roles in these areas."

Because of a proofer's proximity to the makeup area, he added, its belts will have similar requirements while cooling conveyors need proper airflow with a higher open area in the belt construction. Each belting type may need different sanitation procedures.

Establishing proper cleaning protocol and standardized operating procedures for sanitation reduce the chance of nearly undetectable issues from exponentially expanding into a major mess when conveying snacks and baked goods on a high-volume production line. ●



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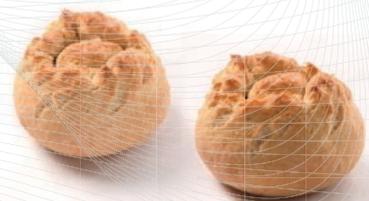
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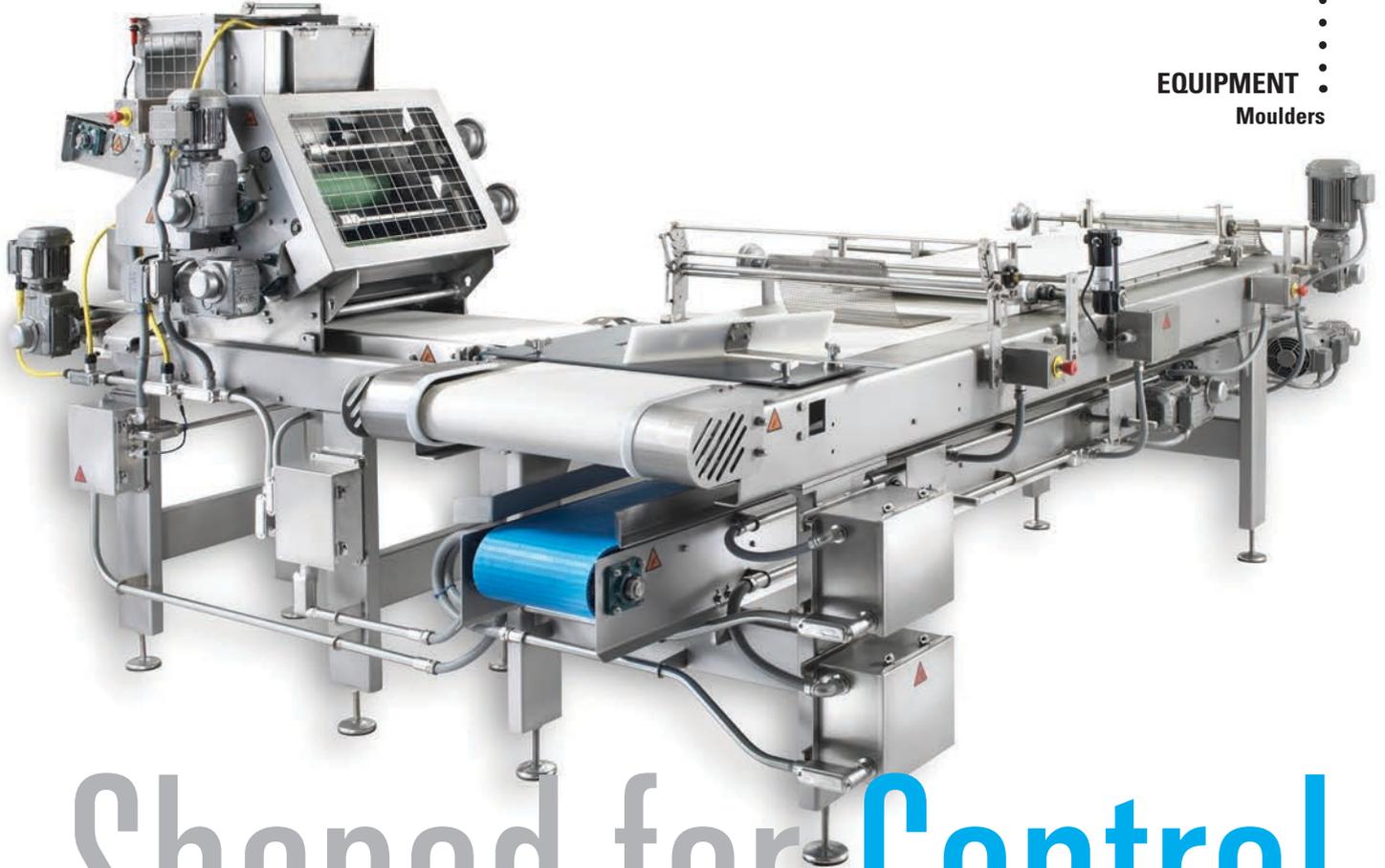


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Shaped for Control

Bakers' needs for high-speed moulding go beyond rapid-fire shaping and require greater flexibility.

by Charlotte Atchley

When it comes to shaping dough, high-speed bread, bun and roll producers need consistency and flexibility to keep up with throughput and consumer demand. Precise controls can unlock quality shaping for bakers. “Consistently shaped bread and rolls is not only a matter of moulding,” said Patricia Kennedy, president, WP Bakery Group. “The whole process, from mixing to baking, must be consistent and in control.”

Moulders with automatic controls can accommodate changes that happen at the mixing bowl, whether that's due to fluctuations in flour or the environment. Today's moulders can precisely position a dough piece for exact and repeatable shaping. Quick tool-less changeovers enable bakeries to expand their product lines to include those specialty breads consumers are asking for.

“Flexibility is a common request, especially for popular products like rustic, clean label and organic breads,” Ms. Kennedy explained.

Exerting control at the moulder has enabled high-speed operations to adapt to consumer demand while turning out a well-shaped finished product.

Centered on control

Whether the final shape is a long log or rounded roll, moulding for consistency at high speeds requires precision and control. Precision ensures that dough balls are delivered in the proper position for repeatable shaping. Controls maintain each piece's shape and keep production speeding along.

“Ensuring a well-sheeted dough piece followed by precise centering under the moulder belt is critical to the final product shape,” said Bruce Campbell, executive product manager, AMF Bakery Systems. Dough piece spacing is everything. If the dough isn't hitting the moulder in the same place every time, the final shape won't be consistent or quality. AMF uses a dough ball

Independent direct-drive rollers provide control over the final shape of the product.
Shaffer, a Bundy Baking Solution

MOULDERS

spacer and extended bed moulder to provide precision in moulding and panning.

Manufactured by Gemini Bakery Equipment's equity partner Werner & Pfleiderer, the BM Series Bread Sheeter Moulder's infeed conveyor features a specially designed centering device that controls delivery of the

Moulders with automatic controls can accommodate changes that happen at the mixing bowl, whether that's due to fluctuations in flour or the environment.

dough balls to the sheeting head. With that in place, dough balls enter the moulder correctly and can be shaped the right way each time.

Dough positioning is key, but control of the various features on the moulder also have a large say in the final shape. For example, Gemini's BM Bread Moulder has a

high-speed curling conveyor that pre-forms dough pieces, leading to improved sheeting and moulding.

The BM Bread Moulder and the company's Roll Line Sheeter Moulder both use variable-speed independently driven sheeting rollers. These allow operators to target the sheeting and moulding action, which leads to improved shapes and sheeting but also allows operators to adjust to product changes more easily.

Shaffer, a Bundy Baking Solution, uses independent direct-drive sheeting rollers to provide elongation control as well as adapt to any changes in production. "The ratio between rollers can be varied for speed changes and weight changes," said Kirk Lang, vice-president, Shaffer.

While the independent direct-drive rollers provide elongation control, Shaffer designed its pre-sheeting roller to be close to the primary sheeting roller, providing more elongation. "The precision adjustment on the pressure board height and width allow for accurate setting and ensure the consistency of the dough," Mr. Lang said.

Shaffer also offers product selection standard on its equipment that controls the speed of the primary sheeting roller, secondary roller, various belts, pan conveyor and all dusters. This ensures every batch is made to the

Equipment designed for easy cleaning makes changeovers and sanitation cycles faster.
Baker Thermal



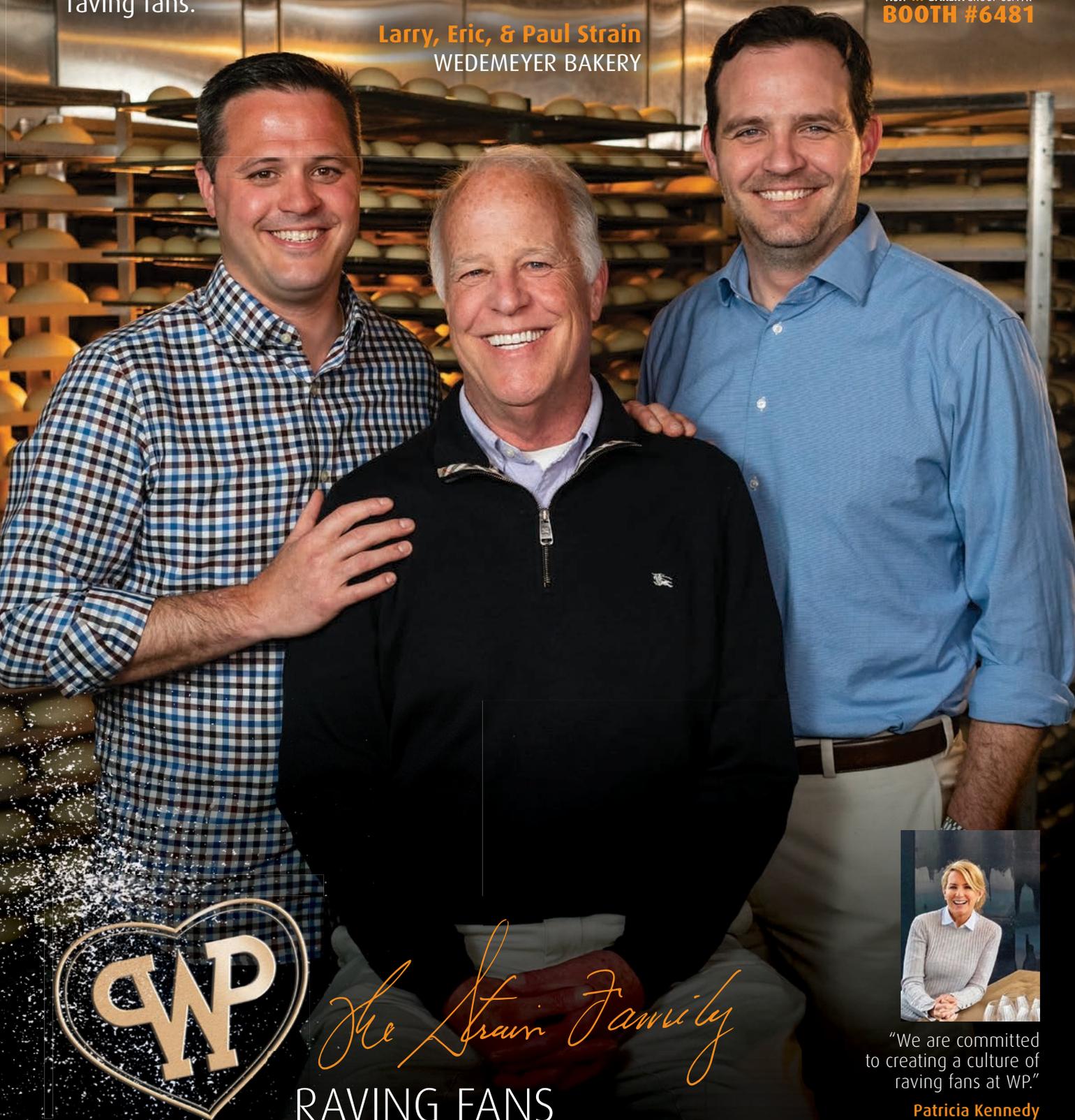
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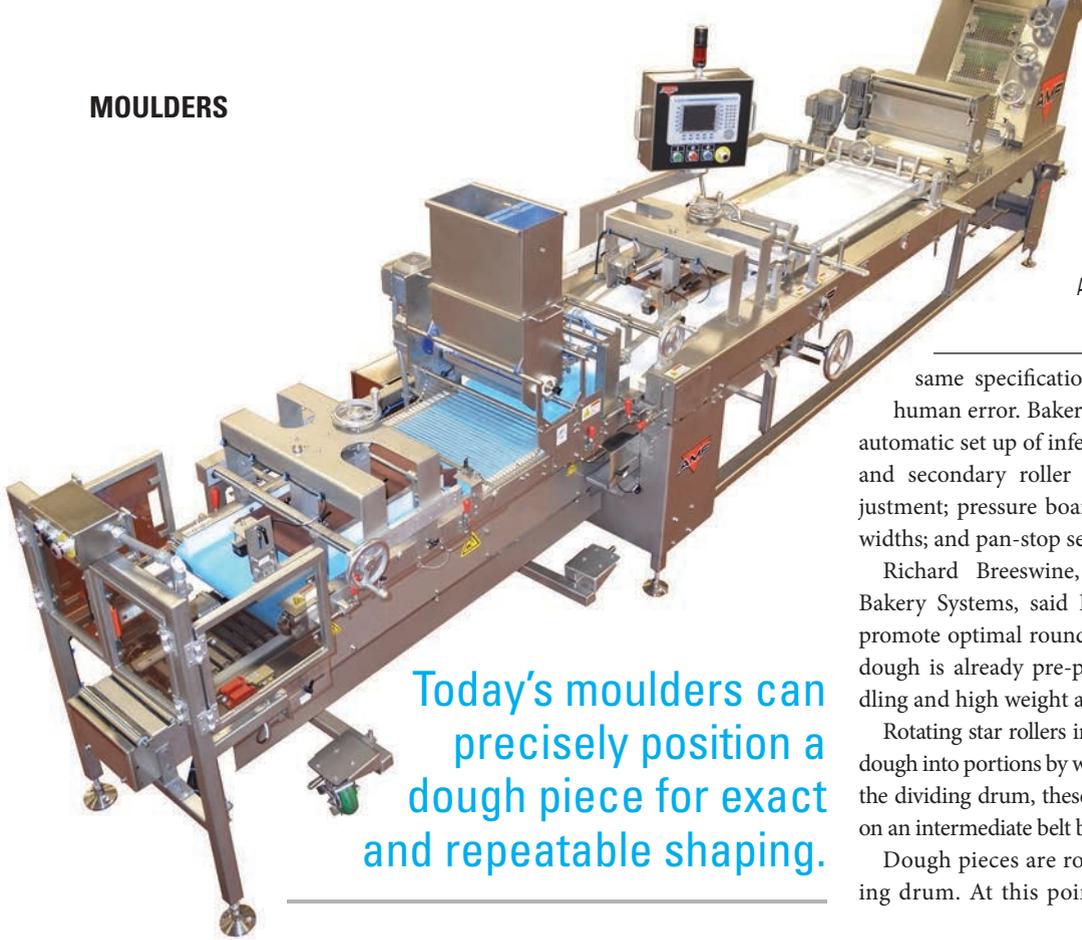
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MOULDERS



Today's moulders can precisely position a dough piece for exact and repeatable shaping.

At high speeds, precision is critical for achieving the proper shape of the dough piece.

AMF Bakery Systems

same specifications without the opportunity for human error. Bakers can also decide to program the automatic set up of infeed guides; pre-sheeting, primary and secondary roller gap; cross-grain back-stop adjustment; pressure board height; dough and pan guide widths; and pan-stop sensor position.

Richard Breeswine, president and CEO, Koenig Bakery Systems, said Koenig uses its Rex method to promote optimal rounding. "It basically means that the dough is already pre-portioned for gentle dough handling and high weight accuracy," he said.

Rotating star rollers in a pre-portioning hopper cut the dough into portions by weight. After being pushed through the dividing drum, these dough pieces are allowed to rest on an intermediate belt before moving to the moulder.

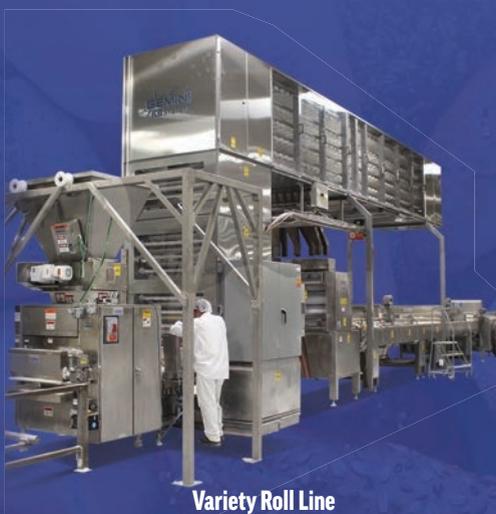
Dough pieces are rounded by an oscillating rounding drum. At this point, optimal moulding is due to



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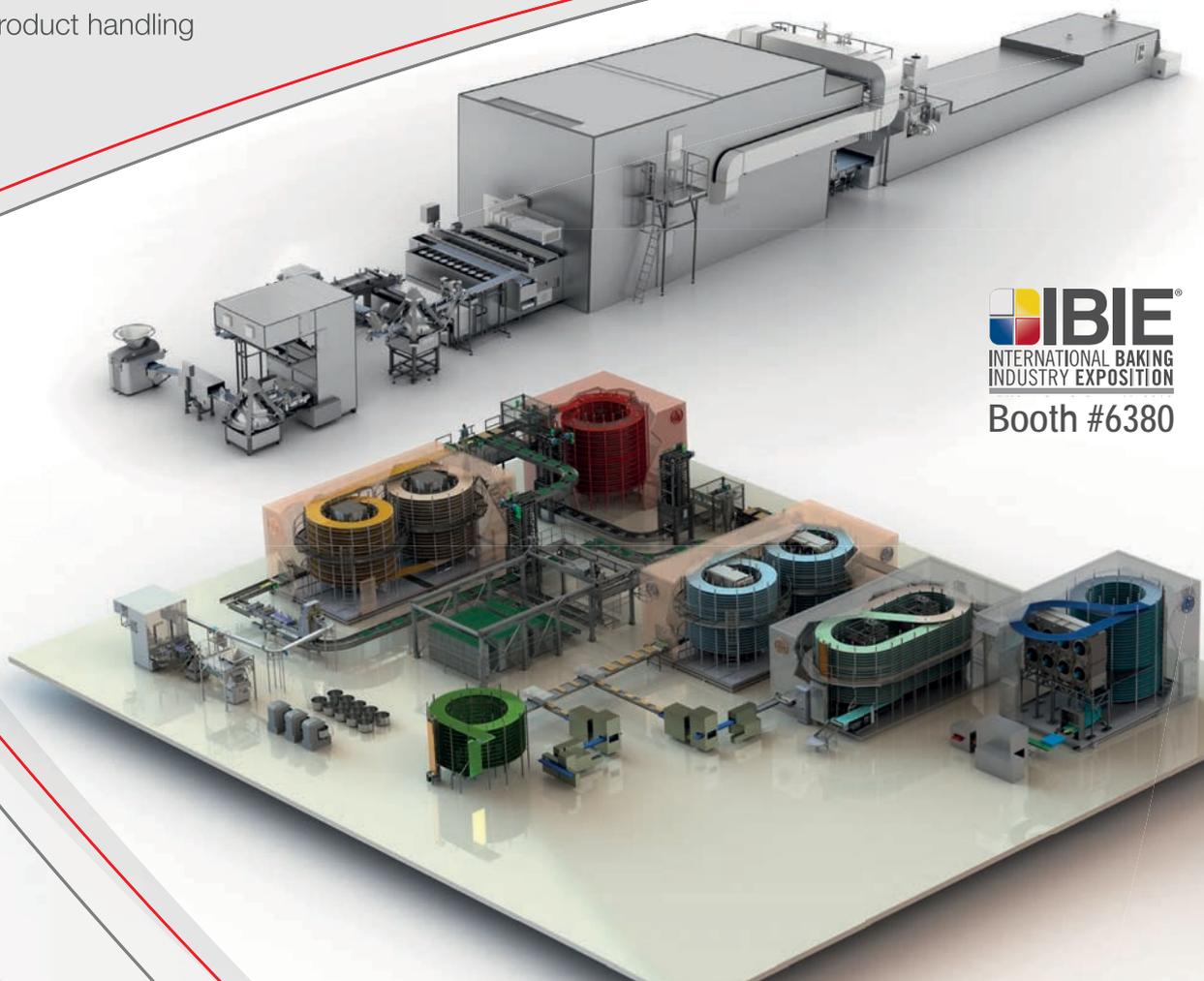
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MOULDERS

Koenig's electrically adjustable rounding eccentric and exchangeable rounding plates. The company's latest dividing and rounding line, the T-Rex AW, uses specially designed rounding ledges to put out 72,000 pieces/hour in a 12-row operation and is the most efficient dough divider and rounder in the company.

"This machine is revolutionary. It combines modularity and product variety with gentle dough processing and high performance," Mr. Breeswine said.

To keep dough moving through the moulder, Fritsch offers monitoring on its long moulding unit on infeed and exit sides. This helps operators avoid dough accumulation, which can get out of hand quickly at high outputs.

"The scraper on the calibrating roller of the long moulding unit is pneumatically adjusted when dough is on the line, which prevents heating and automatically cleans the roller," said Anna-Marie Fritsch, president, Fritsch USA. The company uses contrarily moving moulding belts and reaches high throughput, up to 130 rows per minute for specialty products. For high-speed round moulding,

Fritsch offers multi-step tools and pneumatically adjustable cups that maintain quality shaping.

Fast and furious changes

More often bread bakers must diversify production from only white pan bread, buns or rolls. Consumers want breads, buns and rolls that are made with whole wheat and feature multi-grains, seeds and toppings. Some people are moving toward breads made with high-hydration doughs. To meet that demand, bakers are expanding their product offerings and need more flexible production lines to accommodate these specialty breads.

"Bakers want to produce a wide range of products on the line," Ms. Fritsch said. "This is why our systems offer great flexibility. The round moulder, for example, forms bread rolls between 30 and 1,000 g."

Offering the flexibility bakers need requires the ability to quickly — and sometimes automatically — adjust for the next product's needs, be that a different shape, weight or hydration.

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Fritsch offers operators a quick-tool-exchange system and tool-exchange wagon to make product changeovers fast and easy. “Moulding speed, radius of the moulding movement and the synchronized movement can be easily adjusted,” Ms. Fritsch explained. For those hydrated doughs or products that are heavier, she suggested the company’s pneumatically adjustable moulding cups.

For long-moulded products, operators can adjust the intensity by changing the speed of the moulding belts as well as the gap between the moulding and conveyor belts. “In addition, the calibration roller can be adjusted to calibrate more or less, depending on the product,” she said. “For example, soft doughs won’t use calibration, and stiffer doughs will need strong calibration.”

To accommodate the wide range of product needs bakers have today, AMF offers line configurations



Extra controls and easy cleaning features enable operators to changeover quickly at the moulder for different weights and shaping needs.

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for diverse bread moulding. “Some bakers require no sheeting, while others with very stiff doughs need three sets of sheeter rollers,” Mr. Campbell explained. “AMF offers all of these as well as options for extending the moulding conveyor to get the perfect dough piece in the pan.”

The company also has a robust moulder board design with multiple adjustments to enable operators to accurately target the moulder for a variety of dough piece weights and sizes.

More and more often bread bakers are having to diversify away from producing only the white pan bread, buns or rolls.

Sanitation also comes into play for changeovers. Equipment often needs cleaning between product runs, and this can become costly downtime for an otherwise quick changeover. Equipment is being designed to keep cleaning from slowing operators down.

Not only has Stewart Systems engineered its make-up inline moulder pressure board to enable high speeds and quick changeovers, but the company also has incorporated a no-fray blue multi-ply poly belt. It doesn't absorb oil and can be washed down for easy cleaning.

Gemini's bread moulders and roll moulders feature high-precision scrapers that enable the easy release of dough. Self-contained air blowers on the bread moulder also dry the rollers to prevent dough stickage and make clean-up easier. The hinged pressure boards give the sanitation team easy access for faster cleaning.

Incorporating specialty

Quick changeovers between different sizes and weights are critical in this diversifying marketplace because many bread consumers are asking for very different make-ups — not to mention production needs — other than traditional white bread, buns and rolls. “Flexibility is always a concern for bakers, and we are seeing more who not only want to offer an artisan-style loaf but are also looking to make tin breads,” said John Giacoio, vice-president, sales, Rheon USA.

The moulding needs of an artisan bread vs. a pan bread are very different. Consumers want breads that are free from additives and long fermentation times.

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“Producing these clean label foods requires increasingly hydrated doughs with pre-proofing times in excess of two hours,” Ms. Fritsch explained. “Such doughs have a higher-water content and are, therefore, softer and more highly developed, giving them a greater tendency to stick.”

These softer doughs have a delicate cell structure that has been developed with a lot of water and time. Equipment can sometimes harm that cell structure, which can damage the final bread or roll. Glimek’s bread dough line features an adjustable pressure board that uses gentle stretching to protect more delicate doughs, such as multi-grain, rye or hearth-baked breads made with lower-protein flours.

Rheon’s moulders have been designed with these breads in mind but are capable of making pan breads with a simple changeover.

“We need to take more time forming the loaf than a typical white pan bread moulding system because we are trying to maintain a certain cell structure,” Mr. Giacoio said.

These artisan breads are often not baked in a loaf pan, so what comes out of the moulder is the final shape of the bread. Rheon equipment replicates a hand process to achieve a more difficult shape.

AMF offers a variety of configurations to match the flexibility necessary for artisan production. “Some bakers require shot moulding while others require longer moulders,” Mr. Campbell said. “AMF offers all of these options by having a driven moulding belt to

ensure the right moulding for that product.”

The hydration level of these doughs causes them to stick to the equipment, which can slow down production and harm product quality. “Bakers would like to produce with our equipment in continuous operation,” Ms. Fritsch said. “Therefore, our contrarily moving moulding belts are automatically cleaned by scrapers, and the flour duster placed above ensures that nothing sticks to the moulding belts.”

The blower system on Gemini’s BM series bread sheeter moulder prevents dough from sticking to rollers by directing air onto them.

Toppings like seeds and nuts are also in high demand because of the healthy halo they impart on bread products. Seed enrobers can be incorporated at the moulder to help bakers expand their product lines. When designing bread production lines, AMF can incorporate seed enrobers and water sprayers into the moulding process for added flexibility.

As both a part of Middleby Bakery Group, Burford’s high-speed enrober works synergistically with Baker Thermal Solutions’ moulder to provide up to 80 ppm and seed topping reclamation to prevent costly waste.

While meeting consumer requests for specialty breads is important, today’s moulders enable bakers to not only meet those demands but also maintain the same consistent quality those same consumers have come to expect from their breads, buns and rolls. With increased flexibility, capabilities and control, bakers can get the most out of moulding technology. ●

The latest moulders can turn out high throughput while still being flexible enough to handle products with high hydrations and nuts or seed toppings.
Koenig Bakery Systems

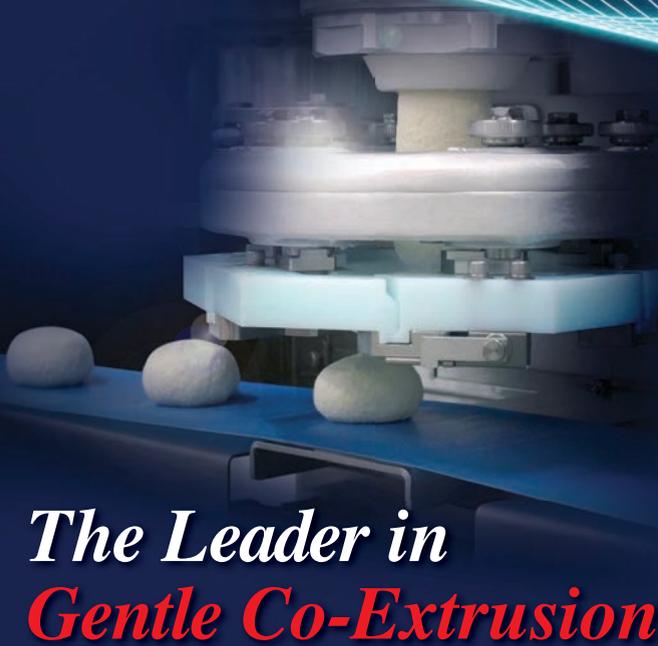


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AS FAR AS IT CAN SEE

Effective X-ray and vision systems protect consumers and baking and snack companies.

by Karlee Renkoski

For quality-conscious food manufacturers, seeing a package without any visual access to what's inside could be worrisome ... and rightly so. Does the product have deformities that were missed upstream? Is a contaminant hiding inside? These questions all come to mind, except that nowadays, bakers and snack producers don't just have to rely on faith in the process. They've got technology.

In addition to finding foreign objects such as metal, glass, bone, stones, plastics or rubber in packaged products, X-ray technology and vision systems also count the items, identify broken or missing pieces, measure the mass or weight and verify package integrity, according to Brian Barr, sales manager of packaging, Heat and Control.

And defective products can also be ejected.

While both inspection systems carry out similar tasks, each have different abilities. As X-rays improve, they're becoming more reliable with investigation as strong beams scan through the product. Vision-based camera systems detect mislabeling on a product, broken seals or missing declarations of allergens, said Miles Kroner, business manager of vision and serialization, Mettler Toledo. This minimizes product recalls, retailer fines and costly rework.

Baking and snack companies should ask themselves if there's value to using both types of equipment on one line for quality assurance and more product information. "Leveraging the software capabilities such as on-board diagnostics, quality-control performance verification routines, overall equipment effectiveness, image library and quality control auto-reports allows custom-

ers to put a robust quality control program around the equipment — ultimately helping them comply with audits and Global Food Safety Initiative-based standards," said Lanel Menezes, business manager at Mettler Toledo. "The technology helps our customers further bolster the overarching food safety program, keeping consumer safety as the main priority."

Interferences with imagery

With X-ray equipment and vision systems, image clarity is everything. And there are a variety of factors that could potentially obscure what's really going on in an item.

"Metal foils can make it difficult to see surface defects or see through for X-ray technology," said Joe Crompton, vice-president of robot technology, BluePrint Automation. Additionally, the size of the foreign objects and product rates can prove challenging.

Mr. Barr has noticed that glass containers are consistently tougher applications to inspect. A combination of products, packaging or potential contaminants can also be difficult for a system to read when striving for safety.

Depending on the packaging, Mettler Toledo has a variety of X-rays to do the job. For example, its X37 side beam system is designed for tall, rigid containers. Its X34 system — which will be exhibited at the International Baking Industry Exposition held Sept. 7-11 in Las Vegas — is for small packages, its X36 is for large-case products and its X38 is for pumped products. The company understands that product presentation plays a significant role and that the inspection process must maximize

Inspection equipment flexibility for product size, shape and packaging is crucial.
Heat and Control

foreign matter detection and keep the visual appeal, according to Mr. Menezes.

Mettler Toledo's vision systems face other challenges such as consistent product handling and inconsistent code verification print quality, sometimes due to a low contrast between the code and background design.

Clear packages and monotone colors can be difficult with vision systems, noted Steve Holtschult, vice-president of technology, Colborne Foodbotics. The products should also be identical for the best results. "The ever-changing shape of products causes unstable image recognition," he said. "Products that are rigid and have clean lines of sight are easier to capture."

Not only does poor image quality cause vision systems to miss tainted product, but it also can swing the inspection pendulum the other way. "Flexible packaging poses the largest challenges, as the variability can cause false rejects due to unclear camera presentation and reflection from the vision system's light source," Mr. Kroner said. "Vision systems perform best when the packaging is rigid or smooth and consistent."

And companies can't forget that a clean machine produces clear imagery. "Maintenance and cleaning of vision systems are as straightforward as they are fundamental," said Andrea Bertuolo, CEO and sales manager, EyePro System. "The procedures do not take long, and the parts to check and change periodically are not many but should be respected to allow for the best system performance."

Advances provide accuracy

Despite imagery concerns, improvements in X-ray and vision system technology have created better clarity. Systems are developing to meet customers' needs. New algorithms, for example, can compensate for distorted images, Mr. Holtschult said. Other advancements such as 3-D or time-of-flight technologies have made it easier to inspect products.

"At times, a customer is interested in pre-package inspection, and at other times a customer is focused on following final packaging, all while working to eliminate any contaminants at each critical control point," Mr. Barr said. "We look at the various product characteristics to ensure that we can inspect, transfer — onto and off of the X-ray system — and remove contaminated products, all of which require some customization to ensure seamless installation, integration and operation by our customers."

The ability to make equipment modifications, especially when it comes to software, is one of the biggest advances in X-ray and vision systems. According to Mr. Crompton, you have to set parameters for an X-ray machine or a vision system of product size and type as well as the specific defects to be detected.

FSMA advances X-ray, vision systems

Prior to the US Food and Drug Administration (FDA)'s Food Safety Modernization Act (FSMA), equipment such as X-rays and vision systems were doing their job to maintain product quality. But after the rule went into effect, it became apparent that these systems needed a stronger job description.

"For X-ray systems, FSMA has had a greater effect on the collection of inspection data and system availability along with optimized inspection. Mettler Toledo Product Inspection X-ray systems, for example, capture and store both crucial production and quality control data, as well as visual images of the inspected product," said Lanel Menezes, business manager of product inspection, Mettler Toledo. "In the event of an FDA visit, and provided the available audit tools are used, this data can be instantly called upon for review."

Higher levels of detection, accuracy, reliability and event traceability all improve products' safety that, in turn, can help a company comply with FSMA. Ishida offers software for event traceability to gather data and record product images for baking and snack companies, said Todd Grube, product manager of inspection systems, Heat and Control. The IX-G2 model has dual sensors to improve the detection of low-density contaminants. The IX-EN — which will be showcased at the International Baking Industry Exposition (IBIE) held Sept. 7-11 in Las Vegas — and IX-GN series have multiple levels of the company's Genetic Algorithm software, which allows for a tailored setup and effective detection of specific contaminants.

As for vision systems, Andrea Bertuolo, CEO and sales manager of EyePro System, said the company looks for not only quality but also the presence of contaminants on the top and bottom surface. "The size of contaminants that can be detected is becoming smaller and smaller, thanks to the introduction of higher definition cameras," he said. "The new EyePro technology, called Multi-Eye, will be at IBIE and uses hyperspectral imaging to detect and classify contaminants." This classification is key in determining where the problem occurred and getting the problem fixed to maintain a safe food record.

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A combination of products, packaging or potential contaminants can also be difficult for a system to read when striving for safety.

EyePro System has different software for each product and different rejection systems depending on the product characteristics and distribution on the line. "It is very important to get familiar with these systems and to use them in the first phase to acquire data on the process capabilities in order to set the right limits accordingly," Mr. Bertuolo said.

The amount of voltage power determines the accuracy of an X-ray systems' beam when it penetrates a package and produces an image for inspection. According to Mr. Menezes, operators must adjust the voltage level in legacy systems for different packaging and products;

however, new systems, such as Mettler Toledo's X3000 series, are trained to adjust automatically. "The packaged product is passed through the system a few times in 'teach' mode to learn variations in production, and the software chooses the most effective voltage and amperage levels to conduct a successful inspection. This, along with advanced detection algorithms, makes the setting of those levels very accurate and eliminates the possibility of human error," he explained.

Vision systems are also designed with automated adjustments to account for a wide variety of product sizes, shapes and packaging designs. But Mr. Kroner said the machine also needs to be tweakable for the operator. "An easy-to-use software interface is essential to a successful implementation of a vision solution," he said. "If the onsite operator is not able to adjust the technology, the benefits of the vision solution can quickly fade."

Although Heat and Control's focus is on achieving the best analysis and detection performance, Mr. Barr said the company is also working to simplify the user experience for X-ray. "Our goal is to provide equipment that



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not only allows users to get to their goal of delivering the safest products to their customers but also gives them an intuitive and an informative operational experience,” he noted. “The information reporting aspects of the X-ray inspection results is key.”

EyePro System is doing the same thing with its vision camera equipment. “Vision systems are not just installed to inspect quality and reject defective products, thus avoiding recalls and protecting the brand,” Mr. Bertuolo said. “Our vision process control solutions are used also to provide easily accessible and interpretable information, share real data coming from 100% of the production, understand the process and improve the process capabilities and the final products delivered to the final customers.”

Baked goods and snacks need to be examined carefully before being sent out to sit on store shelves. Quality control that ensures the safety and standards of a product through X-ray technology and vision systems can verify the consumer will get what they expect and will ease the mind of the manufacturer through inspection data. •



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SUCCESSFUL PROJECTS

Worthwhile prep work helps bakers ensure their next operation or engineering plan hits the target.

With the International Baking Industry (IBIE) just around the corner, bakers are preparing their shopping lists and checking them twice. What will all this activity lead to? Projects!

We all have them. In operations, projects could be onboarding new operators or reducing scaling variance. For the engineers, they could mean replacing a piece of equipment or installing a new line. We have all likely been a part of projects that hit the target. They came in on time, within budget and met all objectives. And then we have also, perhaps, been part of those that haven't been as successful. Where's the line between a project's success and failure?

To start, well-defined scope and objectives are required for any project. This may sound basic — and it is — but taking the time to establish the scope and clarifying the objectives are essential elements for success. Then there are several boundaries that need to be established: budget, timeline and resources. The budget establishes viability of a project early and sets the stage for whether to pursue new or rebuilt equipment. Timelines help narrow the focus of the project. Resource decisions are also critical. The project manager needs time to evaluate, plan and manage the initiative. Having a manager without the available time or supporting resources is the surest way to snatch defeat from the jaws of victory.

Once assigned, the project manager must assess the objective and raise any concerns or problems. Objectives need review to determine if they are realistic and achievable within established boundaries. The value

of the expected outcomes needs analysis. A preliminary cut at the budget must be made; bring potential suppliers, contractors and internal resources into this process as well as the timeline development. The more input incorporated into the budget and timeline, the more you can rely on the preliminary findings.

If the analysis supports proceeding, then all aspects of the project need to be thoroughly vetted. The cost analysis needs to be reviewed. At this point, suppliers and contractors should be identified and equipment and contract work bid. Once approved and funded, the project manager's work really begins: managing the suppliers, contractors and assigned resources; monitoring and controlling spending; planning training needs; and preparing for startup. Success will depend on the training, support skills and open communications with all stakeholders.

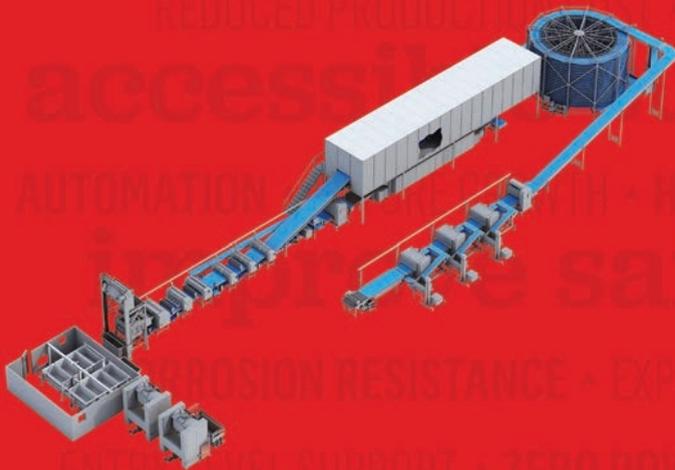
While the project manager needs the clear authority to head the job, there remains a strong role for a project champion. The project champion is the executive in the organization who removes internal barriers and provides the needed resources for the project manager. The project champion owns the project and spearheads it through the organization. This person is the flag waver who has sold others on the proposal and ensures the project manager has the support needed to ensure success.

Lastly, a controlled closing is essential. It assesses all aspects of the project and identifies opportunities for improvement for the next one. With these strategies, any company can see a project through to a positive conclusion. •



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Totally Immersed



New technology at IBIE may change how attendees experience this year's Expo.

by Kristen Putch

When International Baking Industry Expo (IBIE) attendees arrive at the Las Vegas Convention Center Sept. 7-11, an immersive experience awaits.

Technology has been at the forefront in the planning process, according to Fred Springer, president and CEO, Burford Corp., who is serving as IBIE Technology Task Force chair for the second time.

"Technology has always been a big part of our mission," Mr. Springer said. "The task force comes together monthly to explore, evaluate and recommend all current and emerging technologies that can be possibly used to the benefit of IBIE."

The task force was developed about a decade ago and has been working on all aspects of tech for the upcoming show, including the mobile app and virtual reality (VR).

One of the newest features at the 2019 Expo will be the iba.Virtual Bakery Tours. IBIE attendees may be landing in Las Vegas, but once they arrive, they can go around the world.

Launched in 2018 at iba in Munich, these VR tours provide an interactive experience to explore the world of baking in a unique way.

"The launch of the iba.Virtual Bakery Tours at iba 2018 was cinema at its best," said Cathleen Kabashi, iba's exhibition director. "The iba.Virtual Bakery Tours revealed the unique concepts, work processes and skilled bakers behind the respective business ideas: What sets

them apart from the competition, what makes them special and how can the trade fair visitors apply these concepts to their own businesses."

With the help of VR glasses and 360-degree videos, attendees will see directly into renowned retail bakeries from around the world, including Tartine Bakery, San Francisco; Sandholt Bakery, Reykjavik, Iceland; Apollonion Bakery, Athens, Greece; Baier Bakery, Stuttgart-Herrenberg, Germany; Hinkel Bakery, Dusseldorf, Germany; and Joseph Brot in Vienna. There will also be enhanced content from wholesale bakeries Richmond Baking Co., Alma, GA, and Klosterman Baking Co., Cincinnati, which will be unveiled at IBIE.

The decision to bring the tours to IBIE was a direct result of attendee feedback, according to Mr. Springer.

"Our marketing team identified a need for bakery tours. They cited bakery tours as one of the most popular requests from bakers," he said. "Unfortunately, coordinating physical bakery tours isn't feasible for 23,000 people. VR is a great tool to provide the same benefit without having to leave the convention center."

Mr. Springer believes the virtual tours will give attendees the experience they are looking for.

"These are some of the best bakeries from around the globe," he said. "You get to see how bakeries — big and small — operate in Germany, Greece, Iceland, Austria and the US, without having to step on an airplane."

IBIE attendees will be able to virtually tour bakeries from around the world from the show floor using VR glasses.

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Hinkel Bakery in Dusseldorf, Germany, is one of a number of bakeries featured in the iba. Virtual Reality tours being exhibited at IBIE.

Once the bakeries were confirmed, the VR team worked directly with them on storyboarding and then flew to the locations for filming with 360-degree cameras. And while VR “tourists” can’t open an oven, they will be immersed in the environment and get to see how the ingredients, ovens, proofing machines and mixers operate. Mr. Springer said it was important to make sure there were diverse production environments that show different types of baked goods.

The virtual tours will be available on the show floor for the duration of the Expo.

In addition to VR, other interactive experiences available on the show floor include two new Artisan Marketplaces, the RBA Bakers Center and Fresh Take Talks, Mr. Springer said.

“We recognize that our attendees expect an immersive experience beyond just walking the aisles of the trade show floor,” he said.

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READY TO MINGLE

At Cereals and Grains 19, attendees will learn about global food systems from inside and outside the industry.

by Karlee Renkoski

AACC International (AACCI) will provide a forum to further educate the industry about global food issues through discussions with various scientific experts and knowledgeable speakers, all of whom can be found at Cereals and Grains 19, scheduled for Nov. 3-5 in Denver.

After Cereals and Grains sold out in London last year, AACCI brought the event to the Sheraton Denver Downtown Hotel, which has more space. The area is easy for attendees to travel to and is connected to the seed and baking side of agriculture by serving as a hub for breeding companies, breweries and Ardent Mills.

Approximately 1,000 people will attend the event, which Sean Finnie, Cereals and Grains 19 program chair and senior manager of R&D at Bay State Milling, said offers a good balance — big enough to attract scientific discussions and small enough to maintain intimacy. “The most important thing at Cereals and Grains 19 is the networking and building of friendships, both professionally and personally,” he noted. “The personal nature of the conference makes it stand apart from others.”

Part of this intimate element is the fact that members drove the direction of the program. Subjects and speaker ideas were sent in at the beginning of the year to the program team, which reviewed the topics and chose the overall theme based on relevance and conversational potential. This year, it’s all about global food systems.

“We’re reaching deep into the current and emerging issues of our membership and feel that the conference will bring new ideas, approaches, conversations and solutions to the members, their science, their company and career,” Mr. Finnie said.

Within the overall theme are daily topics, which in-

clude food safety, innovation in the value chain, and health and wellness. On the first day, Nabeeha Kazi, executive director of No Wasted Lives, will speak on building sustainability programs to fight hunger. The second day brings in Hamed Faridi, chief science officer at McCormick & Co., and experts from IBM to talk about artificial intelligence. On Nov. 5, Karen Nelson, PhD, president of J. Craig Venter Institute, will discuss microbiome with personalized medications and nutrition.

In addition to a variety of sessions and exhibits, there will be four optional pre-meeting workshops on Nov. 2. These include Enzyme Chemistry and Applications in Brewing, Grain and Grain Based Food Safety, Chemical Leavening Basics, and Protein Highway.

For the first time, AACCI will offer post-meeting tours in the US. On Nov. 6, attendees can participate in a seed and brew tour at the Limagrain Cereal Seeds, a malthouse and brewery, as well as a bread and brew tour at the mill at Whole Foods Bakery.

“The tours are developed with the thought that some hands-on experience will bring added value to the people who join as well as another unique opportunity for networking and building professional and personal relationships,” Mr. Finnie explained.

To provide even more discussion, AACCI is including meals in the registration fee this year. “The hope is that people will use the luncheons, breaks and happy hours to take advantage of meeting and growing from the connections of being with ‘like’ people,” Mr. Finnie said. “Time and again, attendees find endless ways they have benefitted through the relationships developed through attending the AACCI – Cereals & Grains 19.”

This year’s AACCI meeting has more space and an agricultural connection.
AACCI

events

NORTH AMERICA

SEPTEMBER

Sept. 7-8: Tortilla Industry Association (TIA) Conference, Las Vegas
Phone (800) 944-6177
Web www.tortilla-info.com

Sept. 7-11: International Baking Industry Exposition 2019, Las Vegas
Education: Sept. 7-11
Expo Hall: Sept. 8-11
Phone (312) 673-5440
Web www.ibe2019.com

Sept. 8-11: Association of Official Analytical Chemists International Annual Meeting and Exposition, Denver
Phone (301) 924-7077
Web www.aocac.org

Sept. 8-11: Energy and Store Development Conference, Dallas;
Food Marketing Institute (FMI)
Phone (202) 452-8444
Web www.fmi.org

Sept. 10: NextGenBaker Global Leadership Forum, Las Vegas; American Bakers Association (ABA)
Phone (202) 789-0300
Web www.americanbakers.org

Sept. 11-14: Natural Products Expo East, Baltimore
Phone (303) 390-1776
Web www.expoeast.com

Sept. 15-18: FMI Annual Business Conference, Chicago
Phone (202) 452-8444
Web www.fmi.org

Sept. 23-25: Pack Expo Las Vegas, Las Vegas; PMMI
Phone (571) 612-3200
Web www.packexpolasvegas.com

Sept. 25-27: Women in Agribusiness Summit 2019, Minneapolis
Phone (207) 244-9544
Web wia.highquestevents.com

OCTOBER

Oct. 1-3: Food Safety Consortium, Schaumburg, IL
Web www.foodsafetyconsortium.org

Oct. 6-8: SNAC International Executive Leadership Forum 2019, Lake Tahoe, CA
Phone (703) 836-4500
Web www.snacintl.org

Oct. 8-11: Food Processing Suppliers Association Process Expo, Chicago
Phone (703) 761-2600
Web www.fpsa.org

Oct. 17-20: North American Millers' Association Annual Meeting, Colorado Springs, CO
Phone (202) 484-2200
Web www.namamillers.org

Oct. 20-23: ABA Technical Conference, Atlanta
Phone (202) 789-0300
Web www.americanbakers.org

Oct. 22-24: Specializations: Laminated Doughs, Manhattan, KS; AIB International
Phone (785) 537-4750
Web www.aibonline.org

Oct. 26-29: Food and Nutrition Conference and Expo, Philadelphia; Academy of Nutrition and Diabetics
Phone (800) 877-1600
Web www.eatrightfnce.org

Oct. 29-30: Organic & Non-GMO Forum, Minneapolis
Web www.ongforum.com

NOVEMBER

Nov. 3-5: American Association of Cereal Chemists Annual Meeting, Denver
Phone (651) 454-7250
Web www.aaccnet.org

Nov. 3-8: Wheat Industry Fall Conference, Santa Fe, NM; National Association of Wheat Growers
Phone (202) 547-7800
Web www.wheatworld.org

Nov. 4-6: PMMI Annual Meeting, Cincinnati
Phone (571) 612-3200
Web www.pmmi.org

Nov. 5-7: 2019 SQF International Conference, San Antonio; FMI
Phone (212) 452-8444
Web www.fmi.org

Nov. 17-19: US Private Label Trade Show, Chicago; Private Label Manufacturers Association (PLMA)
Phone (212) 972-3131
Web www.plma.com

DECEMBER

Dec. 10-12: FSPCA Preventive Controls for Human Food and HACCP Integration for FMSC Compliance, Phoenix; AIB International
Phone (785) 537-4750
Web www.aibonline.org

INTERNATIONAL

SEPTEMBER

Sept. 11-12: Global Grain South America, São Paulo
Web www.globalgrainevents.com

Sept. 11-13: Fi Asia, Bangkok
Web www.figlobal.com

Sept. 12-14: Bakepol, Krakow, Poland; MTP Grupa
Web www.bakepol.pl

Sept. 14-15: Cake Sensation, Saarbrücken, Germany
Web www.cake-sensation.de

Sept. 21-24: Sudback: Trade Fair for Bakery and Confectionery Trades, Stuttgart, Germany; Messe Stuttgart International
Web www.messe-stuttgart.de

Sept. 22-25: Bibac Plus 2019, Antwerp, Belgium
Web www.bibacplus.be

OCTOBER

Oct. 5-9: Anuga: Taste the Future, Cologne, Germany
Web www.anuga.com

Oct. 21-23: Fi India and Hi 2019, Mumbai, India
Web www.figlobal.com

Oct. 22-25: CibusTec, Parma, Italy
Web www.cibustec.it

Oct. 29-30: TIA Europe Conference, Barcelona
Web www.tortilla-info.com

NOVEMBER

Nov. 12-14: Global Grain Geneva, Geneva
Web www.globalgrainevents.com

DECEMBER

Dec. 1-5: ISNFF: International Conference and Exhibition on Nutraceuticals and Functional Foods, Kobe, Japan
Web www.isnff.com

Dec. 3-5: Fi Europe and Ni 2019, Paris
Web www.figlobal.com and www.ingredientsnetwork.com

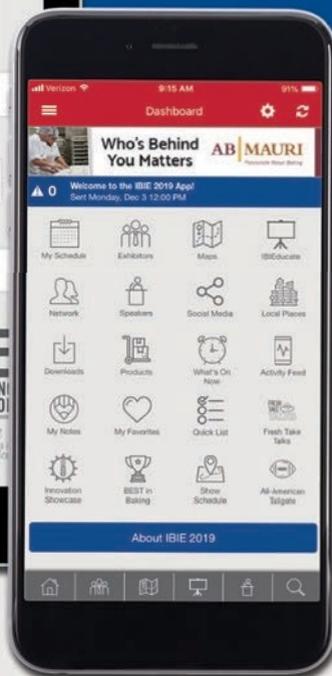
Dec. 10-12: Shanghai Private Label Fair, Shanghai; PLMA
Web www.plmainternational.com

For more information on these events or to see a more comprehensive calendar for 2019, visit www.bakingandsnack.com/events.

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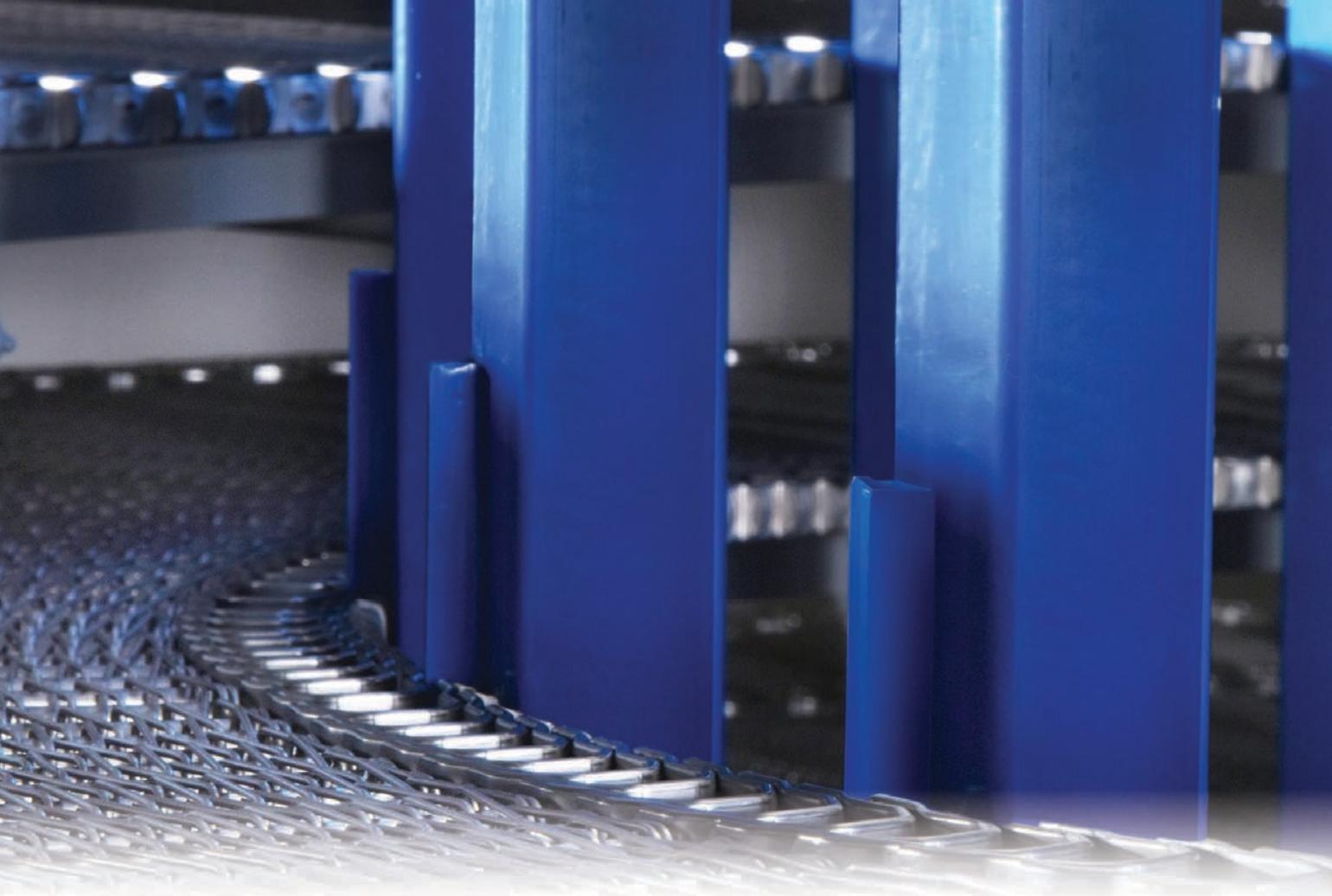


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INNOVATIONS



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FEATURED INNOVATION CENTER

BABBCO: Collaboration leading to innovation

Originally built in 2004, the Babbco Innovation Center in Raynham, MA, was recently renovated to enhance collaboration.



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INGREDIENTS & FORMULATING

Prune bits provide flexibility and functionality

Prune Bits from Sunsweet Ingredients are a versatile ingredient that can provide fat and sugar reduction as well as caramelization and flavor enhancement in baked goods.

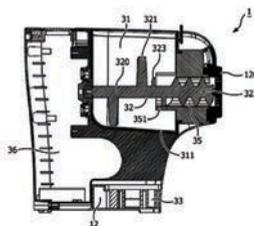


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EQUIPMENT & PACKAGING

Checkweighing for large dough batches

The Vemag Process Check (VPC) 715 from Reiser is designed for baking companies that want a simple, user-friendly inline checkweighing system.



124 patents



126 new on the shelf

featured innovation center



BABBCO: COLLABORATION LEADING TO INNOVATION

To build great products and strong business relationships, ask what customers want; don't tell them. That's been the core tenant of Babbco since Charles Babb founded it in 1918. It's also a philosophy that has never resounded more than after the company renovated its Babbco Innovation Center this year.

The renovations enhance the space where the company's experts listen to bakers, teach them about new technologies and work together to create new and improved products. Originally built in 2004, the Innovation Center is a 15,000-sq-ft facility that includes a training center, R&D lab, conference room and test oven center. It sits at the heart of the company's 75,000-sq-ft executive offices and design and manufacturing headquarters in Raynham, MA.

"Babbco's Innovation Center was designed with our valued customers and prospective clients in mind," said Nathan Stockton, sales manager, Babbco. "Our ultimate goal is to provide an inviting, innovative and collaborative workspace."

In the Innovation Center, bakers have access to new equipment including mixing, sheeting, depositing, proofing and retarding, plus moisture analysis, computerized data loggers and a walk-in refrigerator and freezer. The center also houses the company's four tunnel ovens.

"Customers can test on our air impingement oven with independent steam section, our high-temperature direct-fired oven, our steel band oven and our radiant oven," Mr. Stockton said.

Bakers can also use Babbco's high-velocity impingement air test cooler. By using temperature probes and graphing results, R&D personnel compare accelerated cooling methods and evaluate their impact on production throughput, product quality and consistency.

Being located at Babbco's manufacturing headquarters also offers benefits. In-house experts can walk bakers through the automated in-plant production process and educate them on assembly, maintenance and operation.

"This provides a unique opportunity for our valued customers and prospective clients to use our world-class facilities to test their products and have exclusive access to working with our industry-leading personnel all under one roof," Mr. Stockton said.

Training is critical for prospective clients and bakers who are purchasing one of Babbco's tunnel ovens. Each industrial oven includes a comprehensive onsite training session. Babbco installation professionals work closely with clients to provide operator, sanitation and maintenance training. Engineers also review

fully assembled and tested ovens in the plant prior to shipment. Because the ovens are built in modular sections and preassembled, pre-wired and made ready for factory acceptance tests, delivery can be expedited, and customers know exactly what to expect.

Innovation Center design professionals can assure bakers that the ovens will work on their lines, and design engineers can use 3-D Solidworks CAD/CAM design software to evaluate and fine-tune all aspects of a new project. Mr. Stockton said bakers should use the Innovation Center as a research facility to refine baking processes, establish product-specific bake times and oven settings and confirm product quality. It offers a space to also test throughput prior to purchase and installation and determine exact oven size and build requirements. The center also creates a space to experience and test different baking technologies to improve quality and increase capacity by reducing costs and maximizing plant space.

— Nico Roesler



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ingredients & formulating



Prune bits provide flexibility and functionality

Prune Bits from **Sunsweet Ingredients** are a versatile ingredient that can provide fat and sugar reduction as well as caramelization and flavor enhancement in baked goods.

“They’re a versatile and functional dried-fruit product, capable of taking a backseat to other ingredients or working as an inclusion,” said Kate Leahy, spokesperson for Sunsweet Ingredients.

These mild and slightly chewy bits are made by dicing a dried plum paste, and they can function as a dried fruit inclusion or be transformed into other formats. When soaked in warm liquid, they become a mild puree, which can be used in pastry fillings or can act as a fat replacement in baked goods. They can also dissolve into melted chocolate, enhancing the chocolate flavor. For bar applications, Prune Bits act as a binder and contribute a mellow sweetness without impacting overall flavor.

These clean label ingredients are also gluten-free and made from non-GMO prune plums.

(770) 949-2402 • www.sunsweetingredients.com



Specialty, easy-to-use shortenings

Vream Specialty Shortenings from **Bunge Loders Croklaan** is a line of shortenings specially designed to enhance the appearance, mouthfeel and functionality of icings, donuts and tortillas. All three of these new shortenings provide a clean taste and ease-of-use with wide temperature tolerance and smooth consistency. This provides better mouthfeel and longer shelf life.

(800) 621-4710 • www.bungeloders.com



Customizable blends for tortillas

Kemin expanded its portfolio of bakery solutions to include ingredient solutions for flour tortillas. The company now offers individual emulsifiers, enzymes and mold inhibitors for flour tortillas and can also package these ingredients in customizable blends and batch packs to suit bakers’ needs. These clean label ingredients provide functionalities such as leavening, softening and longer shelf life.

(800) 777-8307 • www.kemin.com

Prebiotic support from inulin

BENEO's inulin and oligofructose are obtained from chicory root using a gentle hot water extraction. According to the International Scientific Association for Probiotics and Prebiotics, inulin and oligofructose are two of the three proven prebiotics that can support digestive health by feeding the microbiome in the gut. These fibers can be used to boost the fiber content of baked goods as well as act as fat and sugar replacers.

(973) 867-2140 • www.beneo.com



Stevia-based natural flavor

Sweet Green Fields and Tate & Lyle introduced ZOLESSÉ Natural flavor. This new flavor is a glycosylated stevia extract that allows bakers to have a clean ingredient list. It works with other stevia products as well, helping to reduce bitterness and providing a more sugar-like taste. It can also be used with monk fruit extract and sugar.

(360) 483-4555 • www.sweetgreenfields.com

(847) 396-7500 • www.tateandlyle.com



Maple syrup ingredients

Indiana Sugars offers maple flakes and maple sugar, both of which are derived from pure maple syrup. While they impart sweetness and maple flavor to applications, maple flakes add texture to finished products. Maple sugar dissolves easily and blends into dry mixes.

(630) 739-9151 • www.sugars.com



Clean-label emulsifier

Fiberstar provides clean label emulsification with its Citri-Fi ingredient. This natural functional fiber is produced from a byproduct of the citrus juicing process. Citri-Fi is non-GMO, non-allergenic and gluten-free. It can be labeled as citrus fiber, dried citrus pulp or citrus flour.

(715) 425-7550 • www.fiberstaringredients.com



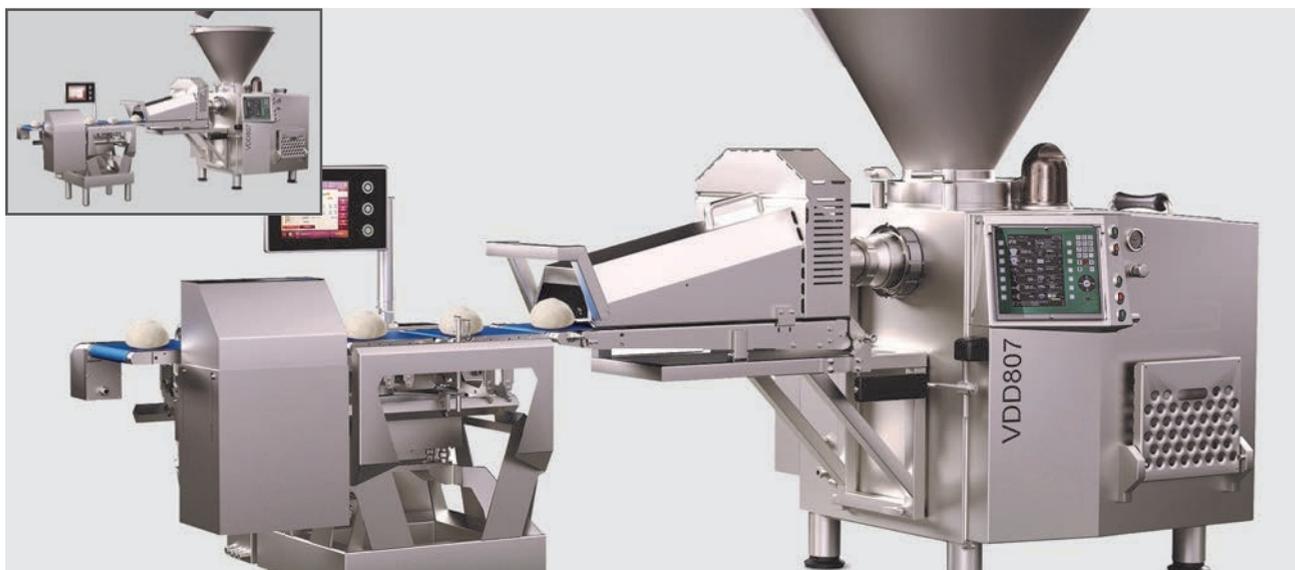
Ancient and heirloom grain crisps

The Annex by Ardent Mills offers identity-preserved ancient and heirloom grains in crisp form. These crisps provide a crunchy texture and toasted flavor. They can be used in snack, bar and bakery applications. The crisps are available in Ardent Mills Great Plains Quinoa, sorghum, sorghum flakes, amaranth, high-density brown rice, standard-density brown rice and Blackjack barley flakes.

(888) 680-0013 • www.the-annex.com



equipment & packaging



Checkweighing for large dough batches

The Vemag Process Check (VPC) 715 is designed for baking companies that want a simple, user-friendly inline checkweighing system. The VPC 715 from **Reiser** directs the divider as a product changes over the course of large batches or when the dough is resting longer.

“The VPC715 not only steers the divider as the product changes, but it also allows the baker to know his scaling is correct,” said John McIsaac, vice-president of strategic business development, Reiser. “Properly scaled product not only effects the bottom line for ingredients but also optimizes baking and packaging — not to mention the consistency it brings to the consumer.”

The unit was designed for bakeries of all sizes where ingredient costs are a concern. The single-lane units are for cookies and bars and can run at 50 pieces per minute. Pizza dough lines can run at 120 cuts per minute. The dual-lane units are geared more toward high-speed bread and pizza products.

The inline checkweigher is fully washdown capable and features a simple operating system for instinctive and intuitive controls. Finally, data can be exported however a baker needs it, including through a USB port.

(781) 821-1290 • www.reiser.com

Portable trough with kibbler



The Thomas L. Green Portable Live Bottom Trough with Kibbler from **Reading Bakery Systems** processes an entire batch of raw dough by slowly conveying it through rotating kibbler knives and discharging small, useable sized dough chunks. This versatile solution to dough handling is sized according to the needs of the production line. Dough can be dumped into the trough directly from a batch mixer or from a dough dump station. The controls and general operation allow the operator to control key functions without exposure to moving parts.

(610) 693-5816 • www.readingbakery.com

All-plastic spiral belts



SpiralPlast, a new line of all-plastic low-tension spiral belts from **Ashworth** include the SpiralSurf and SpiralFlow belts. The open-area design of SpiralFlow provides air circulation for shorter dwell times and increased output. Both belts feature a load-sharing outer edge hinge that increases belt strength and extends belt life. SpiralSurf and SpiralFlow are available in 1- and 2-in. pitch and various materials and colors, along with guard edges and lane dividers. SpiralPlast belts can be used in new and existing spirals.

(800) 682-4594 • www.ashworth.com

Material handling system

From incline conveyors for gently reclaiming and refilling to Z-conveyors that safely move products up several stories quickly and safely, **Axis Automation** offers many conveying and material handling solutions. The Z-conveyor with Axis Rake Topper is designed to handle a wide variety of moist and sticky products, including shredded cheeses, moist green peppers, mushrooms, moist coconut, streusel and more. It separates and evenly distributes products with precision and accuracy, handling sticky or oily dairy ingredients with ease.

(262) 367-4444 • www.axisautomation.com



Mesh belt for oven

In addition to grid and plate hearth designs, **Baker Thermal Solutions** offers a mesh hearth for its 960 tunnel oven series. The mesh belting is designed for less maintenance and more flexibility. It will accommodate smaller pans and foils as well as reduce lubrication requirements. Coupled with Baker Thermal's un-loader design, the mesh hearth can greatly improve oven operations, according to the company.

(919) 674-3750 • www.bakertherm.com



Three-roller bar horizontal mixer

Topos Mondial offers heavy-duty roller bar overtilt horizontal mixers. They are offered in several sizes from 800 to 2,000 lb. The stainless-steel sanitary mixer has no gearbox and doesn't need oil to maintain. The roller bar and bowl design are based on a proven bowl geometry for the shortest and most efficient mixing times for yeast-raised doughs. The mixer is driven by a high-efficiency, variable-speed main drive motor with low-maintenance timing belt drives. The electrical controls and the mixer canopies can be customized to meet exact requirements.

(610) 970-2270 • www.toposmondial.com



Smart splitter for baked goods

The **Burford Corp.** PS-3 Smart Pattern Splitter uses low-pressure water to provide a split-top look on bakery products. The PS-3 can be programmed to produce a variety of split patterns. No pan stop is required as the pan flows continuously. It provides accurate split positions, a quick-change manifold and a portable pressure control system.

(877) 287-3673 • www.burford.com



Cross contamination prevention

Douglas Machine Corp.'s 2554-SPW is designed to quickly and efficiently wash, rinse and sanitize weigh hoppers, chutes and feeder pans. Changeover time is significantly reduced because the hoppers and feeder pans of most 12 head scales can be cleaned in just one batch. Using the shortest wash time, the machines can process up to 10 batches an hour, maximizing the operation rate and using as little as 120 gal of water per hour. It's also available with left- or right-hand door swing and data-logging capabilities for accurate, automated food safety reporting.

(800) 331-6870 • www.douglasmac.com





Cake depositor

E.T. Oakes' next generation cake depositor with a laminar channel design allows batters to flow smoothly, eliminating shear while maintaining highly accurate product densities. The system provides flexibility with the rotary valve on/off controlled by the touch screen. Using a pressurized system, the depositor eliminates the need for a hopper by delivering product in closed piping directly from the pump or continuous mixer to the depositing manifold. The depositor operates at speeds up to 100 rows per minute and is available in various sizes.

(631) 232-0002 • www.oakes.com



Wrapper with obstruction detection

Formost Fuji's premium bread wrapper with obstruction detection reduces waste by preventing the sealers from engaging when the sensor detects product in its path. Instead of having to clear damaged products, bakers simply remove the obstruction after it clears the machine and continue production without stopping the run. This feature saves on labor and film costs. Prior to obstruction detection, the run would stop, and the operator would have to take time to remove product and reset the run, which would waste several feet of film and the operator's time.

(425) 483-9090 • www.formostfuji.com



Inline product enrober

The Deco Seeder, an inline moulded product enrober from Gemini Bakery Equipment/KB Systems, offers uniformity of toppings and significant labor savings with minimal topping waste. Excess topping is transported via a cross conveyor back to a bulk seed collection bin. A compact venturi-type automatic vacuum topping reclaim system provides fresh and reclaim topping to the topping depositing hopper. The Deco Seeder is designed to be used in conjunction with the Gemini/W&P line of sheeter/moulders but can be retrofitted to most moulders.

(215) 673-3520 • www.geminibe.com



Sanitary spraying system

GOE-Amherst Stainless Fabrication introduced APEX-1.0 Sprayer, a spraying system designed for simple, clean, efficient spraying of sheens, glazes, preservatives, egg wash, oils and sugar solutions. The sprayer applies a topical coating to buns, breads, pastries, flatbreads and rolls. Using GOE's proprietary dispensing design, the spraying system eliminates problems associated with plugging of spray nozzles. For ease of cleaning and sanitation, the system ensures open access to all components and eliminates concealed zones.

(716) 691-7012 • www.goe-spray.com



Sustainable bag closure

Kwik Lok Corp. introduced Eco-Lok, a bag closure made with sustainable materials, the first step in the company's drive to reduce its environmental impact. The new Eco-Lok product, used as a closure on consumer food products such as bread loaves, is formulated with a plant-based biopolymer called NuPlastiQ that requires up to 20% fewer greenhouse gas emissions to produce than standard plastic bag closures. Eco-Lok maintains the qualities of existing Kwik Lok plastic closures. It is printable, reusable, recyclable and metal detector-compatible.

(509) 248-4770 • www.kwiklok.com

Craft sheeting and laminating system

Rademaker developed Radini, a flexible sheeting, laminating and makeup system for the craft baker without sacrificing quality or integrity. A modular design coupled with ergonomic tooling and controls allow for reduced costs and improved delivery times. The system was designed for croissants, Danish, pizza, donuts and more.

(330) 650-2345 • www.rademaker.com



Versatile case packer

The Gantry 300 swing from **BluePrint Automation** is a case-packing solution that loads packages either standing up or laying down on the same machine. It can easily case pack into RSC or retail-ready cases, trays and other containers. Now with a smaller footprint, the swing can run pouches, bags and cartons of snacks and baked goods with no impact on productivity.

(804) 520-5400 • www.blueprintautomation.com



Improved, adjustable slicer

The new micro-adjustable slicing head, SL-14 from **Urschel**, features 14 cutting stations that maximize slice engagement. This increased cutting station design delivers much higher capacities vs. the standard, fully adjustable 8-station cutting head. For use on the model CC Slicer, switching over to the SL-14 from the standard 8-station head requires no special adapters. This development allows processors the ability to increase productivity without the expense of purchasing an additional slicer, according to the company.

(219) 464-4811 • www.urschel.com



Dough sheeting line

The ADS 1100 Dough Sheeting Line from **Wellbake** was designed for the growing North American flatbread market. This system consists of three belts, three flour dusters, two WaveSpreader dough spreading systems and two dough calibrating units as main components. The first belt receives the dough from the “SoftFeed” extruder. It’s then discharged to the second belt for relaxing before final width made by the second WaveSpreader. Then it’s calibrated and discharged to the final belt, which has a slight incline for resting and conditioning of the dough.

(705) 722-4100 • www.wellbake.com

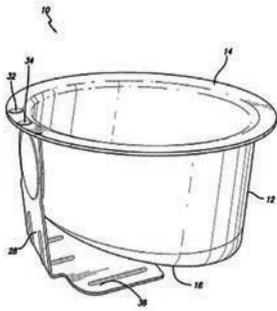


Roll divider

WP Bakery Group’s Winkler Admiral Divider is a volumetric roll divider with a welded steel plate frame for strength and rigidity. This provides the Admiral with the ability to operate 24/7 in the most demanding production such as frozen doughs and bagel plants. If bakers already have an Admiral, WP can rebuild it. The company uses an Admiral frame and adds all new head and bed, motors, gears, shafts, bearings and covers. By swapping the rebuilt Admiral for an old one, bakers can save thousands on the equipment and in production, according to the company.

(203) 929-6530 • www.wpbakerygroupusa.com

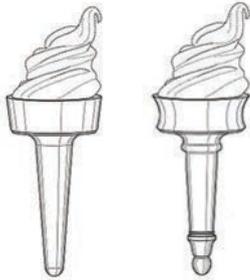




Baking pan

This pan is designed to bake a tilted cake. A rim defines the first plane, and the second plane is defined by a tilted bottom. Both planes are connected by a side-wall, and a support positions the pan on an oven's surface so the first plane is parallel to the surface.

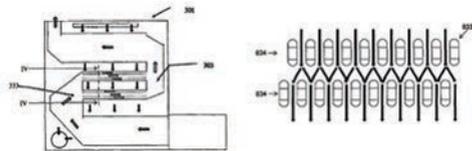
US Patent No. 10,251,403 (April 9, 2019), R. Hartman, Glendale, CA.



Ice cream cones

In the first design, an ice cream cone has a straight, flat wafer composition with a straight base. In the second design, an ice cream cone has a smooth, sculptured wafer composition with a curved ornamental base.

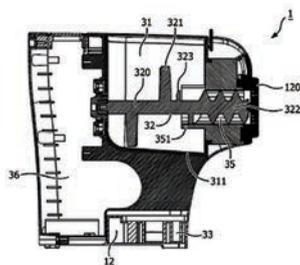
US Patent No. D845,580, D845,581 (April 16, 2019), J. van Borstel, assigned to **JVB Industrial Design GmbH**, Hamburg, Germany.



Hot air oven

To improve the efficiency of a tube heat exchanger within a hot-air oven, this invention arranges the tubes horizontally in an intermediate section of crossflow. Each heat exchanger has an elongated tube with a wall and an interior with a wall, which decreases air friction on the exterior side of the heat exchanger tubes.

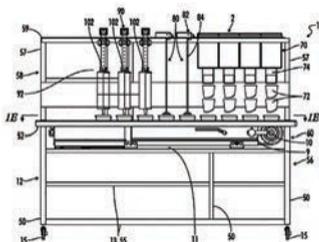
US Patent No. 10,258,049 (April 16, 2019), O. Engstrom, assigned to **Revent International AB**, Upplands Vasby, Sweden.



Extruder device

This machine includes a working chamber that houses ingredients, an extrusion die and a rotation shaft to stir the ingredients and extrude the product. A driving system moves the rotation shaft and separates the extrusion by at least one time period, during which the shaft rotates in the opposite direction of its extrusion rotation. This process allows buildup inside the working chamber to be removed.

US Patent No. 10,264,797 (April 23, 2019), J. Zhang and T. Song, assigned to **Koninklijke Philips NV**, Eindhoven, The Netherlands.



Sandwich assembly

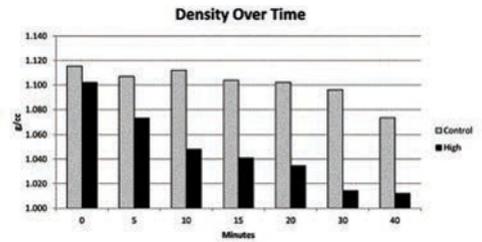
An automatic sandwich maker assembles both bread pieces and the food in between including patties, meats, vegetables, condiments and sauces. One assembly system incorporates a control system, an indexing conveyor system, a scale dispensing system, a bulk sauce and a cartridge metering system, a stainless steel frame, and a supervisory control system with display.

US Patent No. 10,271,558 (April 30, 2019), V. Donisi and C. Harrington, assigned to Kevin Bishop, Brentwood, TN.

Frozen dough method

Relating to frozen biscuit dough, this process combines grain flour, water, a fat and a leavening system that includes monocalcium phosphate and an alkali. After proofing and forming, the dough is placed in the freezer. This frozen biscuit dough can be baked without thawing.

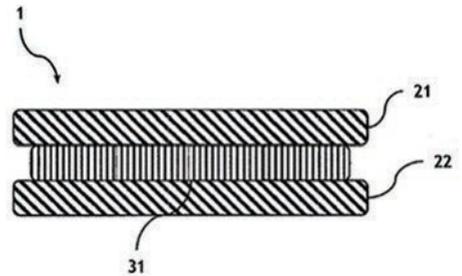
US Patent No. 10,278,399 (May 7, 2019), J. Conley et al., assigned to **General Mills, Inc.**, Minneapolis.



Biscuit filling

The filling in a sandwich biscuit can be formed from yogurt powder, live lactic cultures and dry starch. The amount of dry starch is based on the total weight of the filling, and the live lactic cultures improve shelf stability.

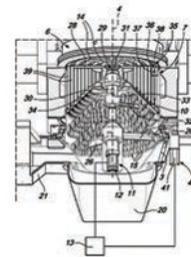
US Patent No. 10,278,400 (May 7, 2019), P. Aymard and R. Wahl, assigned to **Generale Biscuit**, Clamart, France.



Cutting tool for extruders

To reduce the time required to mount a cutting accessory onto an extruder for snacks, this automatic cutting apparatus has a main support, an annular support with a vertical axis and a main shaft connected to the annular support. The main shaft moves in a rotary motion about its own axis, and the annular support can be attached to an extruder with at least one blade acting on the lower die face.

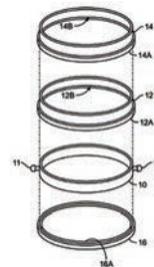
US Patent No. 10,285,406 (May 14, 2019), M. Niccolai and M. Niccolai, assigned to **Niccolai Trafile SRL**, Pistoia, Italy.



Layered cake device

A first cake layer is placed on a tray inside a ring-shaped rim, leaving a gap for icing to be spread on the top and sides of the layer. This process is continued on the additional layers, which stack on top of one another. Tools for shaping spreadable material — one straight and the other wave-like — are also included in this patent.

US Patent No. 10,285,416 (May 14, 2019), G. Lipari, Morris Plains, NJ.



Flour tortilla method

A flour tortilla, including whole wheat or multi-grain, is made by using a fatty substance — any lipid or emulsifier — in the form of a powder, granulate or crystal. This method treats the tortilla dough by applying a fatty substance to part of or all of the surface for improved folding and rolling characteristics, crust color, layering and puffing, stacking stickiness, and stack height.

US Patent No. 10,299,485 (May 28, 2019), M. Sturkenboom et al., assigned to **Mauri Technology B.V.**, Made, The Netherlands.

new on the shelf



Oatmeal snack bar

Nature's Bakery, Reno, NV, introduced its Oatmeal Crumble Bar, which features an open-top oat bar with real fruit jam topped with crunchy oat crumble. Available in three fruit flavors — strawberry, apple and cherry — the 1.4-oz snack is 140 Cal and has 14 g whole grains and 3 g fiber. It is plant-based, vegan, dairy-free and Non-GMO Project verified.

www.naturesbakery.com



Mini sandwich crackers

Lance Minis, baked crackers with creamy fillings from **Lance**, Charlotte, NC, added two more varieties: ToastChee Peanut Butter includes real peanut butter sandwiched between cheese-flavored crackers, and Whole Grain Peanut Butter includes real peanut butter sandwiched between whole grain crackers. The snacks contain no high-fructose corn syrup, artificial flavors or preservatives. These sandwich crackers are found in a 12-count multi-pack at a suggested retail price of \$5.99, an 8.5-oz shareable box at \$3.39 and a 2.5-oz single serve at \$1.49.

www.lance.com



Energy bites

Native State Foods, Los Angeles, introduced Breakfast Energy Bites, a combination of herbs, seeds, fruits and nuts wrapped in dates with almond butter in the middle. The line features 10 ancient superfoods and comes in three flavors: Goji Berry Chia, Cacao Coconut and Blueberry Ginger. The single-serve pack is organic, kosher-friendly, and gluten-, soy- and dairy-free.

www.nativestatefoods.com



S'mores cookies and wafers

Voortman Bakery, Burlington, Ontario, Canada, released a s'mores-flavored cookie and cream wafer. Both products have no high-fructose corn syrup or artificial colors or flavors, and they are baked with real chocolate and cocoa. The cookies come in an 8.4-oz package, and the wafers come in a 10.6-oz package.

www.voortman.com



Frozen protein waffles

Adding protein options to the breakfast category, the **Kellogg Company**, Battle Creek, MI, rolled out Off the Grid, a line of complete protein frozen waffles. Available in three varieties — Vanilla Buttermilk, Cinnamon Brown Sugar and Wild Blueberry — the waffles are a combination of soy protein isolate, whey protein concentrate, whole wheat flour, egg whites from cage-free whole eggs, hemp seeds and 12 g protein per serving. Off the Grid is non-GMO and free from artificial colors and flavors.

www.kelloggcompany.com

Fudge brownies

Drake's, Collegedale, TN, rolled out Starlight Brownies, which are fudge brownies topped with chocolate-flavored fudge and white candy-coated chocolate chips. The snack is also certified kosher and individually wrapped with six brownies inside a 13.95-oz box.

www.drakescake.com



Protein wafer bars

ON Protein Wafers, from **Optimum Nutrition**, Downers Grove, IL, are bars made from crispy wafers layered with a protein-enhanced cream filling. Available in Vanilla Crème, Chocolate Crème, Raspberry Chocolate Crème and Mocha Crème, the snacks are 190 to 210 Cal and have 15 g protein and 6 g sugar.

www.optimumnutrition.com



Quinoa tortillas

Maria and Ricardo's, Canton, MA, rolled out two non-GMO tortillas: Quinoa Flour Certified Gluten Free and Whole Wheat Plus. The 100-Cal quinoa tortilla includes quinoa flour, tapioca, potato starch and avocado oil. Free from dairy wheat, soy and eggs, it has a suggested retail price of \$4.29 with six in a package. The 45-Cal wheat tortillas are keto-friendly, vegan and kosher certified. With eight per package, the product has a suggested retail price of \$3.29.

www.mariaandricardos.com



Frozen bars

Entering into the frozen category, **Kind Co.**, New York, created KIND Frozen bars. The Dark Chocolate Almond Sea Salt bar is 190 Cal and has 11 g sugar. The frozen bars come in a single serving or six pack and contain no artificial sweeteners, sugar alcohols or GMOs.

www.kindsnacks.com



Bite-sized cake

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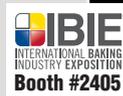
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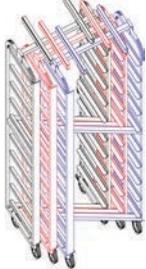
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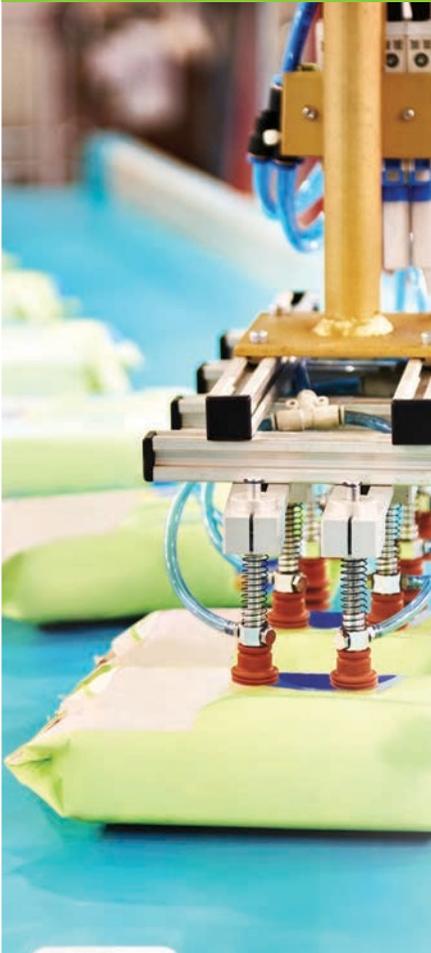

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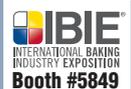


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The Temptress cookie mimics flavor profile of its craft-beer namesake.

Formulation for The Temptress took approximately six months to complete.
Wackym's Kitchen

Last summer, cookie company Wackym's Kitchen, Dallas, moved into a new 10,000-sq-ft facility and made a friend in the neighborhood. Located just down the street, Lakewood Brewing Co. is known for The Temptress Imperial Milk Stout that is the No. 1 craft stout in Texas. The geographical proximity of these two companies became the tipping point for a collaboration.

"Teaming up with Lakewood Brewing for a new cookie is a perfect marriage of two brands because Wackym's Kitchen is known for crunchy, buttery artisanal cookies with unique and adventuresome flavor combos, and Lakewood Brewing also loves to create new and interesting beer flavors," said Paul Wackym, founder, owner and master baker; Wackym's Kitchen.

The bakery's 38th cookie variety, The Temptress, has a flavor of chocolate, molasses and vanilla — mirroring the milk stout — and features an earthy taste from some of the molasses. It's not artificially flavored or preserved and uses ingredients such as real butter, cane sugar, cage-free eggs and unbleached flour. The cookie can also be paired with milk, coffee or a beer such as the craft stout of the same name, according to Mr. Wackym.

It wasn't easy turning a popular ale into a beloved

cookie. "The formulation was one of the most challenging I have faced in the 11 years of developing recipes for Wackym's Kitchen, taking nearly six months to get it right," Mr. Wackym said. "I made a lot of bad cookies — none of them were crave-ready — so the process wasn't not done."

To replicate the stout's flavor profile, Mr. Wackym experimented with hops and malted barley, which he discovered were too aggressive. Next, he tried wort, a liquid byproduct of the brewing process, which he found difficult to balance the flavor. The final experiment proved the winner: He used the actual imperial milk stout and combined it with other ingredients.

The Temptress was tested at the Coppell Farms Market, where Wackym's Kitchen introduces most of its products. After being received with enthusiasm, the cookie became part of grocery store Central Market's Big Tastes of Texas event in May. Now it's sold in an 8-oz package, which includes 26 to 30 cookies, at many Central Market locations, Lakewood Brewing Co. and through wackymskitchen.com. Mr. Wackym seeks to spread it across new markets as it builds momentum.

And it is building momentum. Although The Temptress is currently a seasonal cookie, the successful response gives Mr. Wackym hope to turn it into a mainstay. "It was very interesting to see product recognition," he said. "The Temptress Imperial Milk Stout itself has a very passionate following. Those who loved The Temptress glommed right onto the cookie in a heartbeat."

Although there are no plans for a second beer cookie, Mr. Wackym noted that Lakewood Brewing has a list of uncommon beers, including different flavors of The Temptress. "Lakewood Brewing has many more, and like us, they will continue to introduce creative beer flavors, and that in turn provides us with additional opportunities to work together."

— Karlee Renkoski



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