FOOD
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TOP FOOD INDUSTRY TRENDS IN 2026

Is Listeria Monocytogenes Slipping Through Your Door?

Sous Vide Offers Brand Flexibility While Enhancing Taste

Turning Process Loss into Performance Gains: Waste Reduction Strategies for Food Manufacturers

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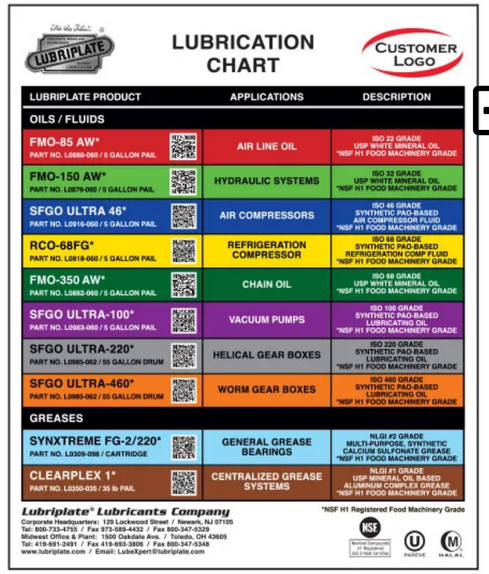

LUBRICATION CHART

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LUBRIPLATE PRODUCT	APPLICATIONS	DESCRIPTION
OILS / FLUIDS		
FMO-85 AW* PART NO. L0880-060 / 5 GALLON PAIL	AIR LINE OIL	ISO 32 GRADE USP WHITE MINERAL OIL *NSF H1 FOOD MACHINERY GRADE
FMO-150 AW* PART NO. L0879-060 / 5 GALLON PAIL	HYDRAULIC SYSTEMS	ISO 32 GRADE USP WHITE MINERAL OIL *NSF H1 FOOD MACHINERY GRADE
SFGO ULTRA 46* PART NO. L0916-060 / 5 GALLON PAIL	AIR COMPRESSORS	ISO 46 GRADE SYNTHETIC PAO-BASED AIR COMPRESSOR FLUID *NSF H1 FOOD MACHINERY GRADE
RCO-68FG* PART NO. L0818-060 / 5 GALLON PAIL	REFRIGERATION COMPRESSOR	ISO 68 GRADE SYNTHETIC PAO-BASED REFRIGERATION COMP FLUID *NSF H1 FOOD MACHINERY GRADE
FMO-350 AW* PART NO. L0882-060 / 5 GALLON PAIL	CHAIN OIL	ISO 68 GRADE USP WHITE MINERAL OIL *NSF H1 FOOD MACHINERY GRADE
SFGO ULTRA-100* PART NO. L0983-060 / 5 GALLON PAIL	VACUUM PUMPS	ISO 100 GRADE SYNTHETIC PAO-BASED LUBRICATING OIL *NSF H1 FOOD MACHINERY GRADE
SFGO ULTRA-220* PART NO. L0985-062 / 55 GALLON DRUM	HELICAL GEAR BOXES	ISO 220 GRADE SYNTHETIC PAO-BASED LUBRICATING OIL *NSF H1 FOOD MACHINERY GRADE
SFGO ULTRA-460* PART NO. L0985-062 / 55 GALLON DRUM	WORM GEAR BOXES	ISO 460 GRADE SYNTHETIC PAO-BASED LUBRICATING OIL *NSF H1 FOOD MACHINERY GRADE
GREASES		
SYNXTREME FG-2/220* PART NO. L0309-098 / CARTRIDGE	GENERAL GREASE BEARINGS	NLGI #2 GRADE MULTI-PURPOSE, SYNTHETIC CALCIUM SULFONATE GREASE *NSF H1 FOOD MACHINERY GRADE
CLEARPLEX 1* PART NO. L0350-035 / 35 lb PAIL	CENTRALIZED GREASE SYSTEMS	NLGI #1 GRADE USP MINERAL OIL BASED ALUMINUM COMPLEX GREASE *NSF H1 FOOD MACHINERY GRADE

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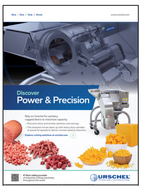

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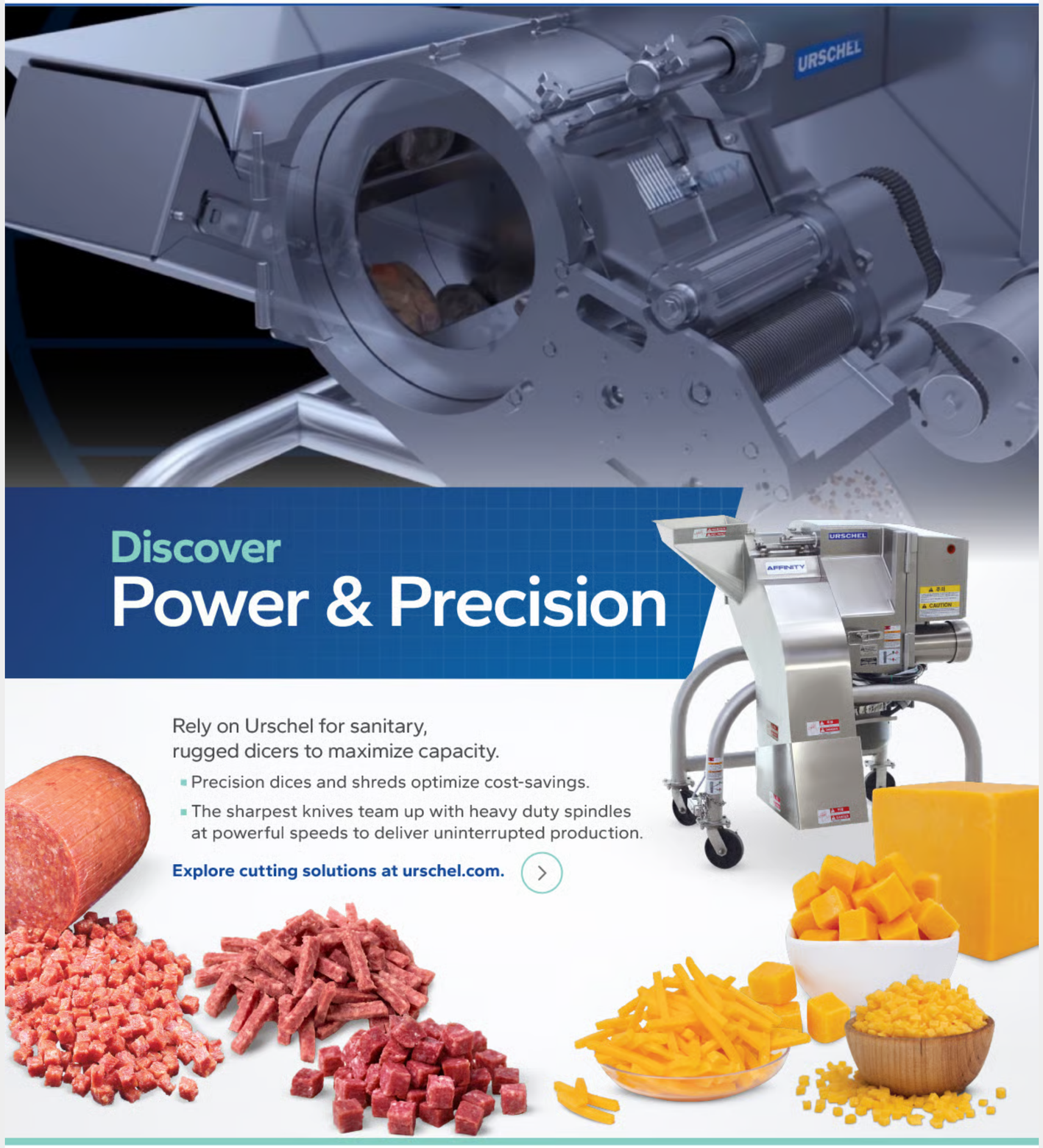

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Is Listeria Monocytogenes Slipping Through Your Door?

Listeria Monocytogenes (Lm) is difficult enough to keep out of a food plant, but once it gets in, the real challenge begins. Fortunately, processors don't have to go it alone.

Sous Vide Offers Brand Flexibility While Enhancing Taste

Taste wins with sous vide, and companies are employing new pasteurization techniques to retain flavor and expand into food segments, such as pet food, protein and overall clean label eating.

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From the Editor

How Much is Food Manufacturing Downtime Costing You?

A recent study by ABB reveals just how much unplanned downtime costs, but implementing a modernization strategy can help.

WE ALL KNOW THE ADAGE THAT "STUFF HAPPENS," and it certainly applies in manufacturing environments.

Bearings break, packaging lines jam, processing equipment stops working for any multitude of reasons, and these issues lead to unplanned downtime that is as frustrating as it is costly.

But do you know just how much downtime is costing you?

In a recent study of 3,600 senior decision makers across sectors, ABB – with help from Sapio Research —found 44% of leaders experience equipment-related interruptions at least monthly, with 14% reporting stoppages every week.

Frequent stoppages add up. Nearly half (47%) of ABB's survey respondents report disruption costs ranging from $10,000 to $99,999 per hour, while 29% report costs ranging from $100,000 to $499,999. Less than 10% (7%) report downtime costs of more than $500,000 per hour.

ABB says the average per-hour cost of downtime is $169,889.

How can manufacturers reduce the financial burden of downtime? ABB points to lifecycle management with a focus on modernization strategy.

This seems like common sense. In fact, 55% of respondents report having a proactive modernization strategy, while 38% say they act on a case-by-case basis. Just 6% of respondents say they're reactive.

But there are several barriers to modernization, with budget constraints being the most significant. The report also points to reliability of upgrades, internal skills gaps, difficulty proving ROI and a preference for full replacement.

"Unplanned downtime is costing industry up to half a million dollars per hour – yet one in three businesses hasn't modernized their motor-driven systems in the last two years," says Oswald Deuchar, global head of modernization program, ABB Motion Services. "That's more than a missed opportunity, it's a silent crisis. Our research shows that those who shift from reactive firefighting to forward-looking life-cycle strategies experience fewer failures and greater resilience. A key challenge, though, remains in justifying the up-front investment. With some applications, upgrading obsolete, inefficient equipment can generate return on investment in less than two years, but leadership buy-in is often hard-won."

And ABB notes just having a modernization strategy isn't enough. It also needs to be aligned with operational goals and well-executed to truly provide operational and financial benefits. **FE**

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Turning Process Loss Into Performance Gains:

Waste Reduction Strategies for Food Manufacturers

Manufacturers that are shifting their views and approaches to waste reduction — seeing it as a critical driver of performance — are also seeing the greatest gains despite a shaky economic outlook.

Photo courtesy: Wachirapong Sukkasemsakorn / Getty Images

BY ANDREW JOHNSTON, VICE PRESIDENT OF INDUSTRIALS, DIVERT, INC.

Andrew Johnston

RISING COSTS ACROSS THE SUPPLY CHAIN ARE IMPACTING NEARLY EVERY INDUSTRY, and food manufacturing is no exception.

Balancing production efficiency with product quality and regulatory demands has always been delicate for food manufacturers, but these economic pressures are making it increasingly difficult. In food manufacturing facilities today, every input is more valuable, and any waste is harder to justify.

Despite these realities, many facilities continue to overlook the value of recovering ingredients or byproducts rather than discarding them. While waste in manufacturing is rarely deliberate, it easily creeps in through the everyday realities of production. Routine processes or issues, such as cleanouts or packaging errors, can erode margins and make companies more vulnerable to regulatory or environmental risks.

Manufacturers that are shifting their views and approaches to waste reduction, seeing it as a critical driver of performance, are also seeing the greatest gains despite a shaky economic outlook. With better data and more engaged teams, manufacturers are uncovering inefficiencies and turning them into measurable results.

EQUIPPING EMPLOYEES TO PREVENT WASTE AT THE SOURCE

Employees who understand how and why waste occurs are in the best position to prevent it, especially those who work on the production floor where waste begins. But training alone isn't enough. Manufacturers make real progress when they build more robust programs with repeatable steps that help teams see where waste begins and act on it quickly.

Think about employees in operations and maintenance who manage constant adjustments on the line, from calibration issues to product changeovers. They understand that even the most minor deviations, from batching errors to mislabeling or line downtime, can equal significant losses. If those same individuals know how to spot recurring issues, they can uncover patterns that might otherwise remain hidden.

This kind of organizational-wide awareness requires data and accountability. When facilities track waste within their existing production data, they can more easily connect loss to root causes. Regular audits and open communication between operations and quality teams help keep waste prevention top of mind. Over time, that collaboration turns reduction into a shared effort across a facility.

Recognition also matters. When teams are rewarded for reducing waste, they start looking more closely at how every step of production affects yield and throughput. That shift in mindset drives improvements in both efficiency and morale.

RECOVERING VALUE THROUGH ANAEROBIC DIGESTION

Even in the most optimized operations, some byproducts can't be avoided, but that doesn't mean they should be written off as waste or treated as valueless. Anaerobic digestion has become one of the most practical and proven ways to capture that remaining value in large-volume operations.

In this process, microorganisms convert organic material in oxygen-free environments into renewable natural gas and nutrient-rich soil products that can be reused locally. Unlike traditional disposal or composting, anaerobic digestion can handle a mix of materials, from commingled slurries and DAF/SAF residues to packaged products ready for discard. That flexibility makes it well-suited for food and beverage manufacturers dealing with complex waste streams.

Anaerobic digestion is also particularly beneficial for facilities that work with processors equipped for responsible depackaging. Gentle separation methods paired with liquid screening irreversibly destroy branded packaging and limit the spread of microplastics in soil amendment. Some providers, including Divert, provide verified reports detailing what was processed and how it was managed, bringing new levels of transparency to sustainability and compliance teams.

When it's part of a larger waste management strategy, anaerobic digestion turns disposal into a measurable contributor to both environmental and business performance.

USING COMPLIANCE TO REDUCE BOTH WASTE AND RISK

Compliance has long shaped food manufacturing. It protects product integrity, maintains brand trustworthiness and helps ensure consistency. But it can also play a meaningful role in waste reduction. As more states introduce or tighten waste mandates, the need to handle recalled, expired or mispackaged goods responsibly has never been greater.

Certified facilities that provide secure destruction also give the manufacturers documented assurance that products are fully processed and can't re-enter the market. Beyond meeting requirements, this kind of oversight builds confidence across the chain, from regulators to customers to internal teams.

Verified reporting from these facilities gives manufacturers a clearer view of their compliance performance and connects disposal data back to production. Being able to see where and why products are being discarded helps manufacturers also see the upstream errors that cause unnecessary waste.

When compliance and waste management operate as a single, connected system, they reinforce each other, reducing risk, improving accountability and enhancing environmental outcomes.

BUILDING A CULTURE OF CONTINUOUS WASTE REDUCTION

Successful and impactful waste reduction programs have to be just that — programs. They can't rely on one-off tactics or temporary fixes. Manufacturers need to view waste reduction as an evolving strategy and a measurable performance metric that can be refined over time.

Another critical component of an effective waste management program is the data it produces. When information from production, logistics and disposal systems is connected, it gives manufacturers a more complete view of where inefficiencies occur and how they affect operations.

Better insight leads to better decisions, and that matters more than ever. The economy is unpredictable, and businesses across industries are seeking ways to remain resilient. Manufacturers that keep material loss under control are better prepared for supply fluctuations and rising disposal costs. Operating predictably helps them stay compliant and maintain trust with customers and investors.

While reducing waste is inherently an environmental responsibility, it's also a critical business objective that protects value and the bottom line. Manufacturers that engage employees, recover value through advanced processing, and uphold strong compliance standards can turn process losses into lasting performance and progress.

Because, ultimately, the future of food manufacturing will be defined less by how much waste we avoid and more by how much value we can bring back into use.

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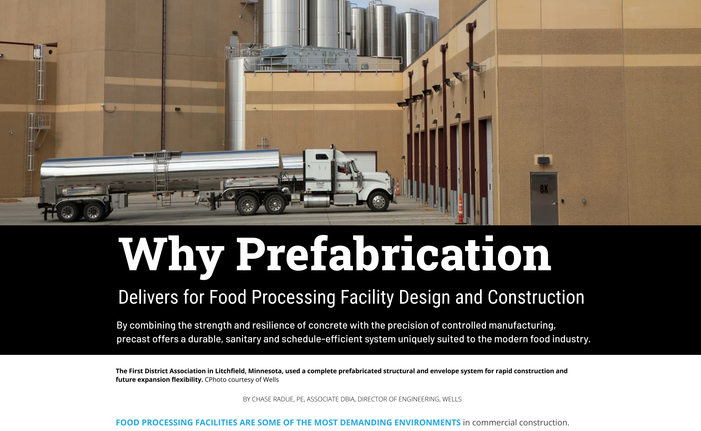

Why Prefabrication

Delivers for Food Processing Facility Design and Construction

By combining the strength and resilience of concrete with the precision of controlled manufacturing, precast offers a durable, sanitary and schedule-efficient system uniquely suited to the modern food industry.

The First District Association in Litchfield, Minnesota, used a complete prefabricated structural and envelope system for rapid construction and future expansion flexibility. CPhoto courtesy of Wells

BY CHASE RADUE, PE, ASSOCIATE DBIA, DIRECTOR OF ENGINEERING, WELLS

FOOD PROCESSING FACILITIES ARE SOME OF THE MOST DEMANDING ENVIRONMENTS in commercial construction. Every surface, structure and connection must perform under heavy mechanical loads, extreme temperature changes and frequent, aggressive cleaning cycles. Maintaining operational uptime while meeting USDA and FDA sanitation standards creates a delicate balance between structural integrity, safety and speed of construction.

For engineers and designers, this challenge increasingly leads to one solution: prefabricated concrete building systems, known as precast. By combining the strength and resilience of concrete with the precision of controlled manufacturing, precast offers a durable, sanitary and schedule-efficient system uniquely suited to the modern food industry.

BUILT FOR PERFORMANCE AND DURABILITY

From dairy processing and meat packaging to beverage bottling and cold storage, every facility in the food sector experiences constant mechanical stress. Heavy industrial equipment such as silos, conveyors, refrigeration units and automated lines can exert concentrated loads on floors and structural systems. In many cases, a single packaging silo can top out at around 280,000 pounds.

Precast is inherently designed to accommodate these kinds of loads. Manufactured under controlled conditions, it can achieve compressive strengths far beyond what field-poured concrete can reliably deliver. Prestressing strands and post-tensioning methods create internal compression that enables longer spans, higher load capacities and thinner profiles without sacrificing performance. According to the Precast/Prestressed Concrete Institute (PCI), factory-cast elements with prestressed strands routinely achieve strengths exceeding 270,000 psi — well above typical reinforced concrete benchmarks.

For food processors, this translates to tangible operational benefits. Stronger, stiffer floor systems allow overhead conveyors, process piping and mezzanines to function without excess vibration. Equipment can be rearranged or upgraded without structural modifications, extending the life of the facility and providing flexibility for future production lines.

CLEANABILITY AND SANITARY DESIGN

In a food processing facility, cleanliness is regulatory. Facilities must maintain surfaces that can withstand repeated high-pressure washdowns, caustic chemicals and thermal shock. Any joint, seam or surface irregularity can become a potential bacterial harborage point, posing contamination risks and regulatory noncompliance.

Prefabricated concrete offers distinct advantages here. Wall and ceiling panels cast in a controlled environment can be hard-troweled to a Grade A, void-free surface, which meets or exceeds USDA standards for cleanability. The material itself is non-porous, resistant to moisture infiltration, and compatible with epoxy or antimicrobial coatings when additional surface protection is required.

Prefabricated systems such as insulated wall panels, pocket beams and double-tees create continuous, ledge-free surfaces, eliminating unnecessary joints that can collect debris. Fewer penetrations and less field-applied sealants reduce long-term maintenance while improving food safety outcomes.

SPEED AND EFFICIENCY IN CONSTRUCTION

Food producers operate on tight timelines. Every day a facility sits idle costs money and delays distribution. Prefabrication directly addresses this by shifting most of the construction process away from the job site and into a controlled manufacturing environment. While site foundations and utilities are being installed, the concrete wall and floor panels are simultaneously manufactured, cured and prepared for delivery.

When construction reaches the erection phase, installation proceeds quickly. Panels are delivered "just in time," assembled with cranes and sealed into place, often allowing a facility to reach full enclosure weeks to months earlier than conventional construction methods. Because the construction of precast components can often be sequenced to accommodate concurrent equipment installation, teams are able to integrate process systems and building structure on parallel tracks, reducing downtime and accelerating commissioning.

Additionally, the delivery and construction speed of precast typically aligns with equipment delivery schedules, ensuring that critical assets can move directly into a protected environment without requiring separate storage or temporary enclosures. Our own studies have found that prefabricated construction can cut construction schedules by as much as 50% compared to other building materials.

The approach also reduces weather-related delays and site congestion, improving safety and minimizing conflicts among trades. For food processing projects that frequently operate in remote or climate-sensitive regions, the predictability of prefabrication can make the difference between an on-time opening and costly overruns.

THERMAL PERFORMANCE AND BUILDING ENVELOPE CONTROL

Many food processing plants combine spaces with radically different temperature zones: ambient manufacturing floors, refrigerated storage and deep-freeze areas. Managing condensation, vapor migration and energy use across these spaces requires high-performing building envelopes. Prefabricated concrete wall panels can be produced with continuous insulation and integrated vapor barriers, eliminating thermal bridging and ensuring airtight performance. Depending on the configuration, panels can achieve R-values ranging from R-22 to R-32, according to the National Precast Concrete Association.

In some cases, precast systems are used to form the refrigeration unit itself, with insulated wall, ceiling and floor panels engineered to meet precise temperature and vapor requirements for coolers and freezers. Unlike other building systems, there are very few joints in a precast concrete wall system, minimizing air and vapor infiltration. Proprietary joint and barrier detailing within the panels create an airtight, thermally efficient space, allowing the structure to become the cooler or freezer enclosure. The insulated sandwich panels, with continuous edge-to-edge insulation, eliminate the need for a separate freezer box and help reduce energy costs while maintaining consistent interior temperatures.

This integrated approach allows designers to use the same precast system as both the load-bearing structure and the thermal enclosure, reducing the need for secondary insulated metal panels or redundant cladding systems. The result is an energy-efficient, sanitary envelope with fewer materials, fewer trades and lower maintenance demands. For processors operating 24/7, those savings accumulate quickly in reduced heating and cooling loads.

LONGEVITY, MAINTENANCE AND LIFE-CYCLE VALUE

Even with robust materials, long-term facility performance depends on maintenance. Food processing plants are subjected to temperature swings, vibration and high moisture levels that can degrade joints and coatings over time. Regular inspection of sealants, waterproofing and expansion joints remains essential.

Prefabricated systems simplify that process. Because panels are factory-cast with integrated connections, inspection points are predictable and accessible. When deterioration occurs, repairs can be made during scheduled maintenance shutdowns with minimal disruption to operations. A proactive maintenance plan documented and aligned with USDA sanitation schedules helps prevent minor issues from developing into major repairs.

Over decades of operation, the benefits compound: less structural degradation, lower life-cycle costs and a reduced risk of production interruptions. As sustainability targets expand across the food industry, the longevity of precast building systems also contributes to lower embodied carbon per service year compared to shorter-lived materials.

COLLABORATION AND DESIGN-BUILD INTEGRATION

Because food processing facilities rely so heavily on specialized process equipment, they benefit from a design-build or integrated project delivery approach. Prefabrication complements this model by bringing the building solutions provider's engineering team into the design process early. This collaboration allows structural systems and construction logistics to align with process layouts like equipment openings, overhead clearances and load paths, all optimized before manufacturing begins.

In practice, that means fewer design changes, faster approvals and better coordination between the structural and mechanical systems. It also improves constructability: openings for ducts, drains and conduit can be pre-engineered, reducing field cutting and patching that could compromise sanitation.

A Design-Build Institute of America report indicates that projects using an integrated delivery approach typically achieve faster completion times, fewer cost changes and higher owner satisfaction compared to traditional design-bid-build models. When prefabrication is part of that integration, the benefits compound, both in schedule certainty and operational readiness.

BUILDING FOR THE FUTURE

As the food industry continues to evolve, whether through automation, e-commerce distribution or expanded cold storage capacity, facility design must keep pace. Prefabricated concrete provides a platform for growth: open floor spans, minimal columns and robust thermal performance support adaptability and future expansion.

Facilities built today must be ready to integrate next-generation equipment and technologies tomorrow. Prefabrication's precision, flexibility and performance make it a strong foundation for that future. FM

ABOUT THE AUTHOR: *Chase Radue, PE, has been with Wells for over a decade, providing leadership for drafting and engineering. In his director of engineering role, he facilitates engineering coordination between manufacturing and field operations to ensure successful project design and development. He holds a bachelor's degree in civil engineering from Minnesota State University, Mankato, and is certified as an Associate Design-Build Professional (Assoc. DBIA).*

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AI, SUSTAINABILITY AND HEALTH
TOP FOOD INDUSTRY TRENDS IN 2026

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AI, SUSTAINABILITY AND HEALTH:
TOP FOOD INDUSTRY TRENDS IN 2026

Last year was an eventful year for the food manufacturing industry, and FOOD ENGINEERING expects many of the major themes to carry over into 2026.

Photo credit: Getty Images / duanpanboxc

BY ALYSE THOMPSON-RICHARDS

FOR THE FOOD MANUFACTURING INDUSTRY, 2025 BROUGHT TARIFF PRESSURES, MAJOR ACQUISITIONS AND CONSUMERS' INCREASING CONCERNS OVER HEALTH AND WELLNESS.

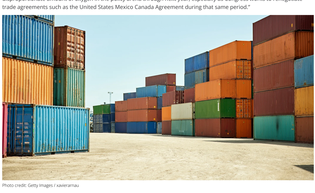
FOOD ENGINEERING expects to see those themes return in 2026, in addition to advances in artificial intelligence and sustainability. We outline our reasoning below.

TARIFFS

At the start of 2025, anxiety around the form and impact of new tariffs abounded throughout the manufacturing industry. Now, eight months after the introduction of President Trump's reciprocal tariffs – and the subsequent tariff rollback on certain agricultural products – uncertainty around these tariffs should lessen, CoBank says.

The firm notes "effective across-the-board tariff rate is now about 17% but based on tax collections, the actual average import tax paid is only about 10%." CoBank's Brian Covey writes the tariffs "have likely not yet had their most significant effect on the economy," but some sectors are experiencing larger impacts than others. As a result, organizations are altering purchasing patterns to ease the blow.

"Supreme Court action could stimulate legislative need," Covey adds. "A court decision limiting the president's use of emergency authority could create some chaos around disposing of the tariffs already collected. And that result would also drive the administration to pursue other remaining legal avenues to reimpose tariffs. This issue will take a disproportionate amount of oxygen in the policy arena through next year, especially as Congress works to renegotiate trade agreements such as the United States Mexico Canada Agreement during that same period."



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M&A CONTINUES

Last year brought several high-profile acquisitions in the food industry, capped in December by Mars' $36 billion purchase of Kellanova, the snacking spinoff of Kellogg Company.

Merger and acquisition (M&A) activity is expected to continue this year, driven by renewed focus on better-for-you products, says Capstone Partners.

"Food mergers are expected to rebound moving into 2026 as businesses in the sector cycle through the first impacts of widespread tariffs on key import countries," the financial advisory firm notes. "Regulatory pressure from the HHS and FDA have already created voluntary change in processed food formulations, with many brands committing to full elimination of synthetic dyes in the coming years. These shifts will likely make best-in-class BFY food brands highly attractive acquisition targets, particularly brands that have effectively balanced consumer demand for both tasty and healthy meals and snacks."

Photo credit: Getty Images / Jacob Wackerhausen

ARTIFICIAL INTELLIGENCE

Artificial intelligence (AI) solutions and capabilities seemed to exponentially expand in 2025, and that's likely to continue in 2026. Manufacturers will pursue incorporating AI into their operations, whether that involves vision and inspection, preventative maintenance or other applications.

Agentic AI — AI that can autonomously reason, plan and take action — is projected to slowly infiltrate manufacturing activities. Gartner Group suggests that 33% of enterprise software applications will include agentic AI by 2028, up from 1% in 2024.

In a recent FOOD ENGINEERING feature, AI experts, including Christopher Selden, senior director, product, at Crisp agree that's a realistic estimate.

"The key question is effective, durable use across teams, which is achievable within that time frame, provided some important requirements are met," Selden recently told FE. "Agentic AI develops best in structured, repetitive, data-rich workflows where it can continuously learn and become more flexible and responsive to data inputs."

Neil Smith, CPG president for Schneider Electric, believes agentic AI could become a vital part of manufacturing even sooner.

"These systems, trained on sector-specific data, will proactively recommend actions such as cleaning-cycle optimization to plant operators," Smith says. "They will test and correct code, helping engineers improve control, safety and batch logic during design and maintenance. Agentic AI will drive predictive maintenance, reducing downtime and improving efficiency. It has already started optimizing production environments by regulating temperature and humidity, to name just a few, to support facility managers and ensure consistent product quality."

Photo credit: Getty Images / mikedabeltum

SUSTAINABILITY

Pursuing sustainability initiatives will remain important to food manufacturers in 2026, but not just for altruistic reasons. Waste reduction and efficient water and energy use also allow manufacturers to cut costs in a difficult economic environment.

"When it comes to sustainability, manufacturers making real headway aren't chasing dramatic net zero declarations," says Kim Lovan, associate vice president, food, beverage and agribusiness at Black & Veatch. "They're building capability by installing infrastructure that enables sustainability later without paying the full cost today. The sustainability initiatives that will succeed are the ones that enhance operational efficiency while reducing emissions. Customer demand for eco-friendly policies and products are also driving sustainability measures."

Schneider Electric's Smith points to industrial electrification strategies as a pathway to reach sustainability and efficiency targets.

"With growing adoption of on-site renewable power generation and microgrids managed by intelligent systems, industrial players will be able to schedule production based on expected consumer demand patterns as well as forecasted energy price, availability or carbon mix," Smith says. "As energy volatility persists, companies will adopt phased and strategically planned electrification roadmaps. Those that allow them to ramp up production when low-carbon electricity is abundant, pause or export surplus energy when energy prices spike, turning energy agility into industrial resilience and margin protection."

Photo credit: Getty Images / Pawel Balic

Ray Wodar, global director of business consulting for the CPG and retail industry at Dassault Systèmes, notes consumers will seek transparency in carbon footprint, water use and recyclability data.

"Sustainability is no longer a marketing claim, it's a measurable, verifiable data requirement," Wodar says. "Regulatory shifts, such as the EU's Digital Product Passport initiative, combined with consumer activism and plastic bans, are driving companies to adopt circular packaging and low-carbon product design. Consumers will increasingly rely on clear, accessible information to make choices, making transparency a key differentiator in the marketplace. Brands will design for zero waste from day one, not retrofit sustainability later."

Wodar also suggests a rise in localized manufacturing, not only to reduce transportation carbon emissions, but to provide businesses with more flexibility.

"In addition to cutting costs, localized manufacturing will help brands build resilient, transparent supply chains to better face volatilities such as geopolitical shocks, raw material shortages and climate disruptions," Wodar says.

PRODUCT DEVELOPMENT

A new year also brings a slate of predictions on popular flavors and formats, but in 2026, product development will likely be driven by health and wellness.

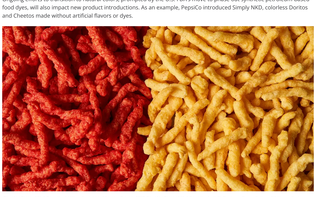
Specifically, GLP-1 adoption — for weight loss and diabetes management — will remain strong, continuing to impact how consumers eat and shop. In fact, Circana reports roughly one-quarter (23%) of U.S. households have someone using these medications. These households are also expected to represent 35% of all food and beverage units sold by 2030.

"The rise of GLP-1 medications is a huge moment for the CPG industry," says Sally Lyons Wyatt, global executive vice president and chief advisor for Circana. "Our research shows shopper priorities are evolving quickly and dramatically. It's vital for retailers and manufacturers to pay close attention to these trends. The key to future success will be adapting product selections and marketing to line up with the new health-focused mindset of this growing group of shoppers."

Protein dominated new product introductions in 2025, with high levels of the nutrient appearing in yogurt, cereal, snack foods and even water. But next year, Mintel and Datassential expect focus to also return to fiber as part of an increased interest in health and wellness.

"Mintel predicts fiber represents an opportunity," Joel Gregoire, Mintel associate director for food and drink - Canada, said in its 2026 trends webinar. "Fiber has typically been regarded for older individuals, but we believe that narrative will change as consumers aim to improve their dietary diversity."

Ongoing efforts to transition to natural colors, prompted by the U.S. FDA's move to phase out synthetic petroleum-based food dyes, will also impact new product introductions. As an example, PepsiCo introduced Simply NKD, colorless Doritos and Cheetos made without artificial flavors or dyes.



***Cheetos Flamin' Hot Crunchy* (left) pictured next to new *Simply NKD Cheetos Flamin' Hot Crunchy* (right).** Photo by Brielle Patton, D3 Studio Partners

"Rest assured, our iconic Cheetos and Doritos remain unchanged. NKD is an additive option, not a replacement, introduced to meet consumer demand," says Rachel Ferdinando, CEO of PepsiCo Foods U.S. "This move underscores our commitment to flavor leadership, demonstrating that our taste remains strong even without visual cues. As part of our broader transformation, we are expanding choices while still protecting our iconic brands. More choices, same flavor, same brand power." FE

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Is Listeria Monocytogenes *Slipping Through Your Door?*

It's one thing to have a TTA-lic determined individual out of your plant, but blocking this invisible microbial enemy from sneaking in can be a real challenge.

Photo courtesy of Marlen Lott

BY KEVIN LOTT

Making mash-ups and UFO products not only depends upon bacteria ingredients, but also a facility that has appropriate and operational sanitation procedures in place coupled with a clean environment that doesn't provide the growth of pathogens. Photo courtesy of Marlen Lott

KEEPING LISTERIA MONOCYTOGENES (LM) at any harmful food bacteria out of a ready-to-eat (RTE) facility comes down to humans following best practices in sanitation, equipment and personal cleanliness.

USDA's Food Safety Inspection Service (FSIS) found in a survey of marketplace sandwiches produced at the Boar's Head prior, NJ plant, and seven not to find similar issues with other Boar's Head facilities. While FSIS inspections revealed several procedural deficiencies, it found no evidence of the mark of Listeria monocytogenes (LM) in production.

FSIS noted several instances of noncompliance with sanitation standard operating procedures and sanitation performance standards, such as the presence of mold and fat residue from the previous day's production on equipment; condensation in the RTE processing area; and structural issues such as cracks, holes and broken flooring that could hold moisture. Boar's Head voluntarily recalled more than 7 million pounds of product. Equipment efficiency and long-term hygiene and upkeep are paying a cost — and the big picture.

Better sandwich waste streams are beyond determination of food product waste streams. Photo courtesy of Hygienetech

Food safety consultants can certainly point out potential LM harborage issues. However, architectural and engineering firms not only have specialists that can spot these problems and recommend how to correct them, but can file on the drawings and beyond the capabilities of a plant's maintenance department or local contractors.

For example, CRB's office communities include sanitation and hygiene focused on facility and equipment design, construction and maintenance. These services include:

- Good manufacturing practices (GMP) compliance and review of existing documents, records and procedures
- Design and construction for new facilities to surpass regulatory standards, exceed client expectations and ensure operational excellence
- Document review and preparation support for food safety programs and related services

In addition to the design of hygienic facilities, these firms offer an array of sanitation and food safety consulting, including clean-in-place (CIP) optimization, facility evaluations, GH&S consulting and OSHA and regulatory compliance consulting.

"I help companies plan for and execute capital projects and programs — in short, efficiently, on time and on budget," says David Zisbrod, Global Director of Food Safety Consulting. "In a sense I advocate, on behalf of my client, for everything [including project management and design/engineering] reviews, with particular focus on sanitary design and maintainability. I also help clients develop and implement food safety plans, and I provide training services for our clients regarding important food safety topics, including sanitation, environmental monitoring and the Food Safety Modernization Act."

Gleeson provides complete design-build services dedicated exclusively to the food industry, says Brandi L. Rees, P.E., president. "Our work includes interior and exterior renovations, major renovations and the construction of new food buildings into sanitary, production-ready environments. Because we specialize in heavy industrial food manufacturing, our design approach always prioritizes food safety, sanitation, cleanability, operational efficiency and long-term maintainability."

Gleeson's engineering and construction teams understand adverse contamination risks — harborage points, airflow deficiencies, improper slopes, deterioration and structural vulnerabilities — and design solutions that correct these issues and prevent them from recurring.

DON'T WAIT FOR A PROBLEM TO OCCUR

It would seem that a facility without LM would have the insurmountable problem before they call for help, whereas others have an ongoing relationship with an engineering and architectural firm so they typically avoid serious last-minute problems that need a "quick cure."

"We work with food manufacturers to build dynamic, open business relationships with participants," says CRB's Pablo Coronel, senior fellow, food practice leader, and Kelly J. Saunders, Since the introduction of the Food Safety Modernization Act (FSMA), processors have become more proactive about food safety. Our role is to help companies be prepared when an inspector arrives.

"During our pre-assessment, we identify potential areas in their food safety plans and procedures," Coronel adds. "Sometimes we find that they're doing a great job, but sometimes we find that they're not doing as well as their performance. What this means for our company is to act as a true preventive and assistance rather than last-minute solutions."

Quick fixes or long-term solutions? "We see both, but most of our clients are proactive," Rees says. "When a food safety or sanitation issue goes beyond what their in-house maintenance or sanitation teams can manage, they bring us in to diagnose the issue and implement a solution."

"We also work with many clients on a continuing basis, addressing immediate concerns, executing planned infrastructure improvements and designing new construction projects with food safety built into the beginning," Rees adds. "Whether it's an urgent repair or a long-term upgrade, we help ensure the facility remains compliant, efficient and safe."

"It depends on the project," says Kenneth Thiewes Jr. from Gleeson's Rock, CEIT, LEED AP and Wilson. "Some who reach out when a problem has escalated, as in the case of one client where we were called in after positive microbial tests revealed a perfect environment for Listeria to grow. Others, like Gleeson, have ongoing relationships with clients and their facilities, which we've already on-site for other reasons and can flag potential concerns early, whether it's floor damage, air filtration gaps or harborage points. That proactive engagement can help prevent bigger maintenance problems we resolve."

Evaporators used for cooling should not be looking or blowing condensate in regions where product is exposed. When a problem is in refrigerated storage, if condensate is dripping, the cause needs to be determined and remedied. Photo courtesy of New York Blu-Tuff Photography

On the process side, it's often a food safety or sanitation consultation issue that prompts a call, says Warren Green, P.E., Hexion vice president and manager, process engineering. The kitchen might struggle to prevent the source, and after trying to find the problem, they realize they need additional engineering support. Sometimes, however, they're looking to implement an additional engineering measure to meet customer requirements or internal initiatives. Our role really flows between prevention, diagnosis and redesign, depending on how early we're involved in the project."

What's the biggest challenge for this region? "Prevalence is much better, in terms of cost, time and ultimately safety," says Mach Gladwin's Zisbrod. Plus, once an issue occurs it is almost universally a reputation risk and a PR nightmare. A proactive approach to food safety and sanitation is always the best approach. It's also the most cost-effective over the long term, and it's important to immediately address any issue at hand. It is also critical to follow up and establish a robust plan to prevent those problems from occurring again.

"My approach focuses on establishment-regular review cycles and proactive monitoring systems — catching potential issues before they become dangerous," says Thiewes. Zisbrod adds:

Common Equipment and Infrastructure Issues Leading to Bacteria Growth

- Condensation from improper airflow or pressurization
- Inadequate air movement that allows moisture to accumulate
- Failed or poorly maintained caulk joints, wall panels, curbs and floors
- Lack of sloped finished wall coverings/equipment, preventing proper cleaning
- Ductwork that is difficult to inspect and clean
- Out-of-hollow-members that trap contaminants
- Improper finishes installed in high-moisture or harsh environments
- Doors, compressed air or hydraulic leaks — often linked to aging equipment
- Poor walls or temporary repairs that do not meet sanitary design standards

We emphasize implementing a strong preventive maintenance program aligned with sanitary design requirements to reduce failures and extend equipment life.

— Donald L. Rees, P.E., Gleeson

PERSISTENT AND RESIDENT LM A BUILDING CLOSER — BUT NOT THE ONLY PROBLEM

While specific percentages vary, Listeria presents a significant problem for manufacturers — especially in RTE environments, Zisbrod says. "However, I've seen a full spectrum of issues: mold and spore concerns in dry ingredient facilities, Salmonella in low-moisture foods and even occasional pest-related problems in facilities not typically known for product type. The common thread in the most issues seen from a microbiological standpoint — inadequate drainage, compromised facility envelopment or equipment maintenance gaps."

A significant portion of building-related food contamination problems involves the risk of Listeria or other bacterial contamination — moisture infiltration, standing water, improper airflow, deteriorated surfaces and structural failures, Coronel says. "Addressing these issues early can be challenging, since it is often hidden in walls, ceilings or behind equipment."

Predicting the Growth of LM in Specific Food Matrices

The Corbion Listeria Control Model (LCM) helps processors to develop RTE meat products and refrigerated foods by predicting the growth of Listeria monocytogenes in specific food matrices. It has been developed using a data set of over 2,500 individual growth curves of statistically- designed experiments and separate open prior studies that have been published in peer-reviewed literature. The model is available as a free online tool and as a desktop application for Windows. Depends on the product's formulation, processing and preservation factors into account. Appropriate use of the model requires a minimum of challenge studies and can aid in their design.

Terms now that CLCM version 4 will be released in Fall 2019. Enhanced functions including the ability to predict the growth capacity, says Giovanni Ross, "Local repairs are sometimes possible using urethane coatings if the surrounding area is structurally sound. However, when we see widespread deterioration, it's a clear indication that the entire surface has reached the end of its useful life and must be removed and replaced to eliminate underlying harborage points."

New Zealand Institute for Plant & Food Research Limited, developed the model in collaboration with Corbion Caker. The model was originally built from the beginning. With a strong food safety foundation in place, CLCM helps address the root cause of LM, what happens if low levels of LM contamination reach the product? The CLCM model is based on the concept that the lag time of LM is a function of the product's formulation and processing conditions, such as temperature, pH, salt and preservatives. Corbion Caker has validated the model to ensure the accuracy of communication.

For more information on the CLCM and other models and calculators visit Corbion Caker.

FACILITY ISSUES BEYOND THE PLANT MAINTENANCE STAFF

Food manufacturing environments, he says, are extremely demanding on buildings, and many issues exceed what in-house teams can address. Common problems requiring construction crews include:

- Ponding water and improper floor slopes requiring re-sloping or full floor replacement
- Deteriorated walls, ceilings, floors or failed caulk lines allowing moisture infiltration
- Harborage points created by cracks, gaps or broken surfaces that cannot be cleaned
- Improper vapor seals, air movement or lack of pressurization causing condensation
- Failing or unsealed doors allowing moist air and contaminants to infiltrate
- Structural wear on roofs, walls and floors typical of aging food plants

These require specialized construction knowledge specific to sanitary design — not simple maintenance patchwork.

There's another factor facility owners may not be able to screen of these issues on their own — and that has to do with regulatory documentation or jurisdictional approvals, says Vincent's Green. For example, some of these includes flaws of the formulas or local or state health and environmental, harborage, sanitary and sanitation design. Those often tie into HACCP and HSA compliance, building codes or structural engineering sign-off.

With all the problems mentioned above, Zisbrod recommends digging deeply to identify root causes. For example, why is there ponding water in the same place day after day? It's coming from an equipment issue, or why is the drip pan overflowing? Is the drainage system undersized or blocked?

Take corrosion lines one bang-up or in-the-RTE facility. When cleanliness and operational, contractors must meet to be cleanland regularly for users before their could choose may be of systems into products. Photo courtesy of New York Blu-Tuff Photography

THE HAZARDOUS FLOOR DRAIN

"No one plant manager told me: 'I know I have Listeria in my drains — I just need to keep it there!'" Zisbrod says.

"I've encountered drains tied into bathroom systems — a disaster requiring complete drainage network," Zisbrod adds. In other facilities, a facility engineer's preventive maintenance plan of inadequate drainage systems limited problem other than fixing the underlying problem.

In older facilities, once a drain problem is identified, a complete assessment is needed to determine the corrective actions and the time, resources and construction involved, says CRB's Coronel. "This process requires a disciplined approach and a thorough root cause analysis to implement effective, long-term solutions," Coronel says. Zisbrod adds:

Your drains used to be back in good condition and inspected regularly. Photo courtesy of Marlen Lott

Drain issues can be very challenging to correct, says Rees. "Floor trenches could come from mixing equipment and conveyor systems." Photo courtesy of Marlen Lott

Many existing facilities have no as-built drawings that sanitation processes should be aligned with equipment design. Rees recommends a facility-wide mobile laser scan quality control (QC) check and maintenance programs, e.g., documenting inspections and training staff to recognize early signs of issues, ensuring that CIP equipment is operating at proper temperatures and pressures and that corrosion — a frequent cause of drain and structural problems.

Regular internal inspections paired with third-party audits are essential, but the system for documenting and addressing findings is equally critical, Zisbrod says.

Operators must be trained to identify critical issues and empowered to stop production when food safety is at risk, Technology can help. Historian for temperature monitoring and CIP logging can automate alerts to management when parameters drift.

Most importantly, food safety must be a standing agenda item in daily production and maintenance meetings, as well as top-level management meetings — not something discussed only when problems arise, Zisbrod says. This keeps it top of mind, enables addressing the issue proactively and ensures accountability at all levels.

CIP AND CIP

Sanitation of equipment is essential for food safety, and sanitation standard operating procedures (SSOPs) are critical for maintaining hygiene, Rees says. "We've seen facilities struggle with inadequate CIP systems that compromise sanitation. Besides the process equipment, all aspects of the facility including floors, drains, equipment exteriors, walls, light fixtures and ceilings must be cleaned and sanitized to the level required.

CIP takes the human element out of cleaning, but it may not always be practical. "The decision between CIP and COP requires a comprehensive review," Coronel says. In some cases, the replacement of equipment that cannot be cleaned otherwise may be deemed necessary. Both engineering and clean-in-place (CIP) suppliers, automatic valves, sight flow and more is a facility requires visual cleaning.

Clean-out-of-place (COP) equipment is conveniently located at a long floor drain. Photo courtesy of Wayne Labs

According to Gleeson's Rees, CIP systems are ideal when equipment is:

- Difficult to access
- Confined or elevated
- Hazardous for manual cleaning
- Complex in geometry, such as ovens or spiral freezers

In these cases, CIP improves cleaning consistency, reduces labor risks and enhances inspection capability. While the investment can be significant, the long-term gains in food safety, labor efficiency and downtime reduction typically justify the expense.

Automated CIP skids have lagging-up verification through nuclear-mirror compared to manual cleaning, says Mach Gladwin's Zisbrod. For human cleaning operations, equipment as many automated controls as possible: temperature monitoring, chemical pH verification, flow monitoring.

The key is real-time data capture, Zisbrod says. Modern historians and even chart recorders are superior to clipboard-based handwritten documentation, which is prone to misplacement third-parties catch issues early.

FOOD SAFETY KEY PRINCIPLES

Food safety requires a systems approach with multiple layers or protection. The stakes are too high — illness, death and irreparable brand damage — to rely on reactive measures. Ultimately, you can't protect what you don't know, your consumers and your brand, Zisbrod says. Always follow these three safety principles:

1. Design food safety in during engineering and design phases of a capital project.
2. Maintain vigilance. Regular reviews by independent third parties catch issues early.
3. Communication counts. Food safety findings must reach management immediately when a potential problem is spotted. Viewing food safety as a cost center rather than a risk-mitigation investment is a dangerous mistake that can lead to devastating consequences.

A Time to Raze or Not to Raze

I posed a question that no one wants to face: "How you ever recommended that a processor raze a facility and start over, or move to a new facility rather repairing the current one?

Yes, we have recommended that processors build new facilities or relocate when structural failure, aging infrastructure or repeated contamination issues make renovation impractical. Sometimes, even older buildings simply cannot be brought up to modern sanitary standards without significant reconstruction.

Complete eradications of bacteria cannot be achieved through fumigation alone. Fumigation may reduce surface contamination but cannot eliminate harborage points in hollow members, trapped water, voids, cracks or deteriorated materials. Long-term control requires removing harborage points, correcting moisture issues and addressing structural deficiencies. — Ronald Hess, Gleeson

While I have not recommended razing, my operational facility, I have advised clients against acquiring certain brownfield properties. Additionally, I have recommended abandoning previous ones. Documented outbreak history construction methods incompatible with modern safety standards.

Sometimes a "new within a few" approach — creating a sanitary envelope within an existing structure — can work. However, I've seen cases where ongoing DIY installations created harborage opportunities throughout a facility. Spot repairs become a game of whack-a-mole. In such cases, I recommend comprehensive remediation — but PP recommend, for example — to eliminate systemic issues rather than chase symptoms. — Daniel Zisbrod, Mach Global Advisors LLC

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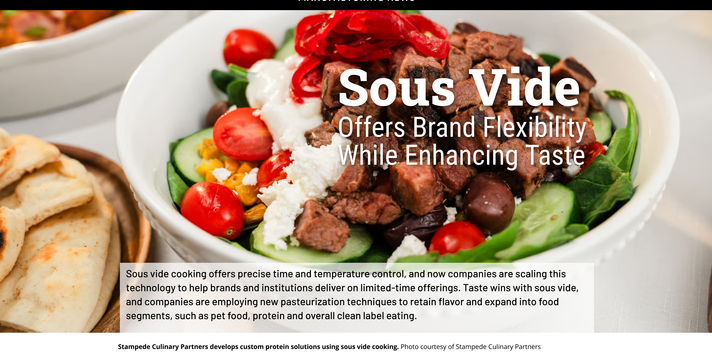

Sous Vide Offers Brand Flexibility While Enhancing Taste

Sous vide cooking offers precise time and temperature control, and now companies are scaling this technology to help brands and institutions deliver on limited-time offerings. Taste wins with sous vide, and companies are employing new pasteurization techniques to retain flavor and expand into food segments, such as pet food, protein and overall clean label eating.

Stampede Culinary Partners develops custom protein solutions using sous vide cooking. Photo courtesy of Stampede Culinary Partners

BY GRANT GERKE

FOOD INDUSTRY PROFESSIONALS AIM TO FIND INNOVATIVE TASTE PROFILES. Sous vide products are delivering on this promise across many segments of the food industry, including prepared foods, small and large brands, retail outlets and more.

"Restaurants have been doing it for ages, but we've been doing it for maybe the past two years. I think it's the next thing everybody will be doing," says a prepared food leader in The State of Sous Vide report, released in 2024.

According to the report, sous vide is a $15 billion market and survey participants believe the segment will keep growing due to ongoing staffing shortages, production innovation, ultra-processed foods (UPF) and clean label trends. Sous vide means "under vacuum" and this allows for precise cooking temperatures and times. Repeatability and consistency while delivering exceptional taste profiles and avoiding high-heat pasteurization (HPP) processing allow food to retain more nutrients.

This alignment is beneficial for brands, food manufacturers, retail and prepared foods players in their drive to support clean labeling and nutrition claims to customers. In addition, food companies such as Stampede Culinary Partners is scaling production and working with a range of customers to become a leader in the segment.

THE SEARCH FOR PRODUCT INNOVATION

Many brands hope to shift away from UPF market perceptions and move towards clean label. "We see that when it comes to clean labels, nothing is off limits," says Stephanie Mattucci, director of food science at MINTEL, in May 2025. "In addition to ingredients, clean label concerns have expanded to processing, packaging, ethical and environmental concerns. Those eco- and ethical-related claims have shown growth over the past decade."

While UPF products are designed to be irresistible, consumers continue to prioritize clean eating and wellness. Consumers understand the importance of fewer ingredients and exceptional taste.

Stampede Culinary Partners has moved aggressively into the sous vide segment to meet customers' demand for exceptional taste. Based in Bridgeview, Illinois, the food producer delivers custom protein solutions and operates numerous processing plants across North America.

Stampede Culinary Partners uses a low-temperature processing method that preserved nutrients and taste. Photo courtesy of Stampede Culinary Partners

In 2025, Stampede Culinary Partners unveiled a low-temperature processing (LTP) pasteurization process that delivers improved taste while retaining more nutrients across a range of products.

"Customers continuously asked about high-pressure pasteurization, and now we have developed a low-temperature processing (LTP) technology," said Brock Furlong, CEO and President of Stampede Culinary Partners at the 2025 FA&M Conference. "The process includes opening up (the cooked product) in the clean room and then applying another kill step so the product can go to market and meet all safety requirements."

Taste is crucial, but so is food safety. Stampede's research evaluated HPP and its limited efficacy against psychrophiles (cold-loving microbes), potential impacts on color and texture, and risks to packaging integrity.

Stampede's LTP technology draws on the U.S. Department of Agriculture's Food Safety and Inspection Service (FSIS) 5-log reduction in pathogens. A key element of LTP is humidity-controlled precision, allowing the product to be exposed to 100% humidity in an enclosed cabinet and gradually heated to 132°F for a minimum of 80 minutes, meeting the FSIS Appendix A cooking guidelines for pathogen reduction.

According to Stampede, 30 products have been validated through the LTP process, and all of these validations have exceeded shelf-life benchmarks for HPP-processed products.

One example of Stampede's LTP in action was Chipotle's limited-time smoked-sliced brisket offering. "Chipotle wanted HPP, but we said we're concerned with HPP and here's why. We went with LTP," Furlong said.

The rollout of the limited-time offering touched on shelf life, product innovation, taste and food safety. "We both (simultaneous testing) hit 208 days of zero microbial growth," Furlong says. "We ran out a product, so we're not quite sure where it would have gone, and the flavor held throughout that 208 days."

IMPEDIMENTS TO GROWTH

Foodservice, retail outlets and brands have limited knowledge about sous vide processing and its ability to scale production. Stampede Culinary Partners looked for industry research on sous vide but found none, so they decided to survey their customers in 2023. The responses show that customers lacked knowledge of sous vide processing opportunities, with 65% of customers having no familiarity with the process.

Other impediments included perceived costs, taste, applications and the ability to scale. "One of the big limitations was that nobody could scale in a professional way. It was small players and regional in nature," Furlong says.

Stampede pulled the trigger on growing operations in the U.S. by opening plants in New Mexico and across North America. The company seized on customer research showing that customers invested in sous vide offerings and planned to increase volumes. The increase in volume is due to many factors, but Stampede points to labor shortcomings in prepared foods, retail and institutional workplaces.

However, brands are seeking innovative ways to enter protein markets.

Kevin's Natural Foods offers a variety of products made with sous vide chicken. Photo courtesy of Kevin's Natural Foods

In September, Kevin's Natural Foods released a limited-time offering of sous-vide processed Buffalo Style Chicken in refrigerated and frozen formats, while Starbucks has enjoyed sales success with its sous-vide egg whites. Cuisine Solutions added a direct-to-consumer line of "premium sous vide" proteins called Sear and Serve. Home cooks simply finish with a quick sear on the stove or grill to enjoy a steakhouse-quality experience, according to the company.

In addition, pet food brands are capitalizing on health and wellness. FOOD ENGINEERING spoke with Lynn Dornblaser of Mintel in 2024 about pet food trends and the need for greater nutrition. "That's why we see so much about the need for elevated nutritional values for pets: bone, joint, skin, nails and digestion. These values are important to consumers because they want their pets to live forever and have the very best possible life."

Sous vide's precise cooking temperature and time help retain elevated nutritional value in pet food. "We can control cooking so it's low and slow, and the vitamins, minerals and micronutrients get through to the finished form," Furlong said at the conference. "The gently cooked, pet food segment is growing like crazy here in the U.S., less so internationally."

Primal Pet Foods relies on sous vide processing for its Gently Cooked line of fresh pet food. Photo courtesy of Primal Pet Foods

Open Farm has a line of pet food called "Gently Cooked" using sous vide processing, while Primal Pet Foods and A Pup Above are using the technology, too. A Pup Above's emphasizes nutrients with its turkey brand of pet food for dogs, mentioning "gently cooked sous-vide locks in nutrients, boosts flavor and eliminates harmful pathogens."

Furlong also sees turkey, chicken, pork, eggs, seafood, vegetables and plant-based proteins as emerging categories for growth with sous vide.

However, Furlong cautions food service and retail operators. "If you want to drive traffic to your retail location, you must have a beef strategy," Furlong said. "Chicken doesn't drive traffic. Turkey doesn't drive traffic, and pork doesn't drive traffic. They just don't, nor do vegetables." **FE**

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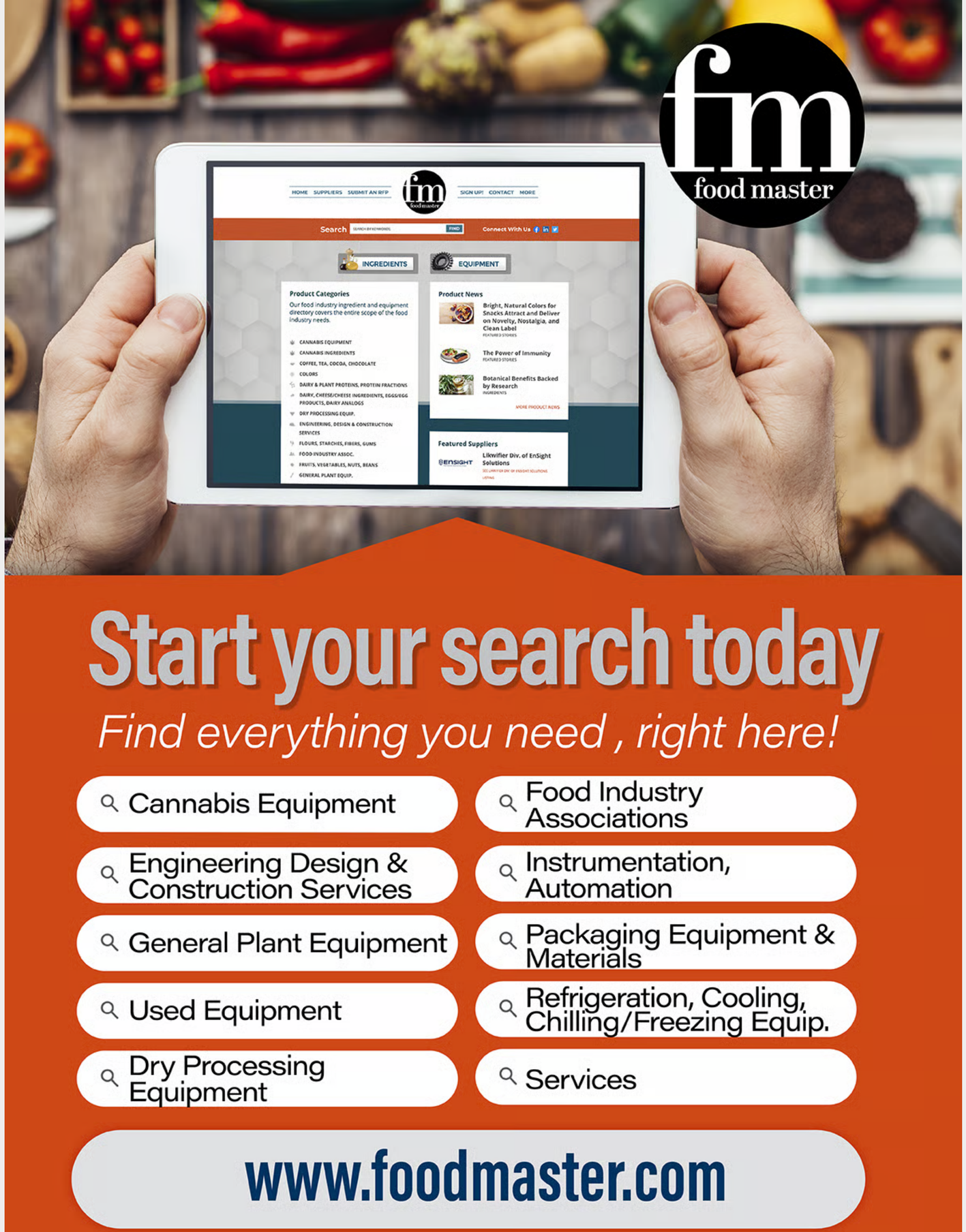
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METTLER TOLEDO PRODUCT INSPECTION GROUP

X3 Series X-Ray Inspection Systems

METTLER TOLEDO Product Inspection Group introduces the X3 Series of bulk flow x-ray inspection systems, designed to deliver physical contamination detection, precision waste reduction and simplified operation. Consisting of the X13 and X53 models, the X3 Series for bulk inspection is developed with common parts of the X2 family. It offers hygienic design, streamlined usability and the performance required by agriculture, confectionery and dried food producers worldwide. The X3 Series has been developed for unpackaged, loose-flow bulk products on conveyors. Both systems in the series can detect contaminants as small as 0.3 - 0.4 mm, depending on application and contaminant material.

AMCOR

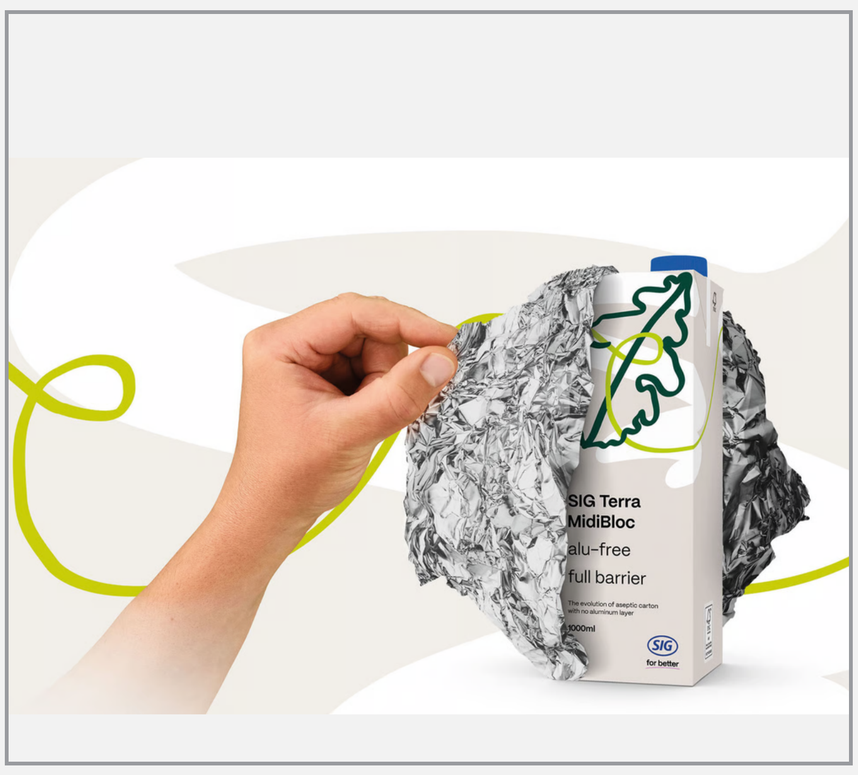
Retort Bottle for Nutritional Shots

Amcor has partnered with Insymmetry to develop a 2-oz. retort bottle. Designed to meet the needs of brands seeking high-performance packaging for low-acid, shelf-stable products like coffee and dairy-based beverages, this packaging solution is the first to leverage Amcor Rigid Packaging's (ARP) proprietary StormPanel technology. Designed to withstand high-pressure retort sterilization processes while maintaining product integrity and market-ready aesthetics, the bottle provides manufacturers with a reliable and scalable alternative to aseptic processing.

Hartmann

FiberWise Fiber-Based Trays

Designed to address growing environmental concerns, the new tray offers a sustainable alternative to conventional rigid plastic trays. FiberWise uses sustainable materials and upcycling to create packaging from renewable resources. FiberWise reduces plastic use by at least 70% as compared to traditional rigid PET or PP plastic trays.



SIG

Terra Alu-free + Full Barrier Multiserve Aseptic Cartons

The packaging structure for multi-serve cartons with no aluminum layer cuts the carbon footprint of SIG's standard aseptic cartons by up to 61% when combined with forest-based polymers. Made of more than 80% paper, the material simplifies the packaging structure to only two main raw materials, that can all be linked to renewable sources. The packaging material offers the same full barrier protection as standard aseptic cartons and a shelf life of up to 12 months. It can run up to 24,000 packs per hour on SIG filling lines for small-size cartons and up to 15,000 packs per hour on filling lines for multi-serve cartons with only minor, low-cost adaptations.

VOLKMANN USA

VFD 100 Vibratory Feeder Dosing System

Integrating weighing, feeding and dosing in a single, compact unit, the VFD 100 gently and continuously feeds powders, pellets, granules and other free-flowing bulk materials into mixers, extruders and other equipment in volumetric feeding. It may be quickly adjusted to automatically weigh and dose the materials in precise amounts via loss-in-weight (LIW) feeding. Batch-to-batch variations due to human error are eliminated and a consistent, uniform product is achieved every time. **FE**

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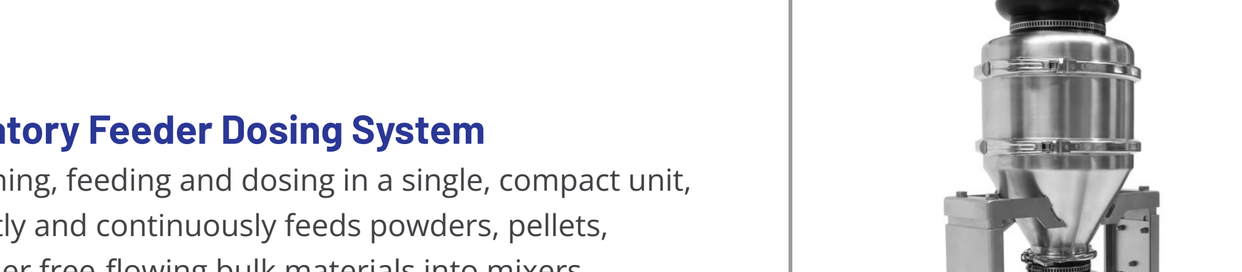

FDA Expands Agentic AI Capabilities

Image credit: gorodenkoff / Getty Images

The agency says agentic AI deployment will enable its staff to further advance the use of AI and assist with complex tasks.

THE U.S. FOOD AND DRUG ADMINISTRATION says it is deploying agentic AI capabilities for all agency employees to enable the creation of more complex AI workflows and assist with multi-step tasks.

Agentic AI refers to advanced artificial intelligence systems designed to achieve specific goals by planning, reasoning and executing multi-step actions. These systems incorporate built-in guidelines — including human oversight — to ensure reliable outcomes. The tool is entirely optional for FDA staff and is used voluntarily.

“We are diligently expanding our use of AI to put the best possible tools in the hands of our reviewers, scientists and investigators,” says FDA Commissioner Marty Makary. “There has never been a better moment in agency history to modernize with tools that can radically improve our ability to accelerate more cures and meaningful treatments.”

In May, the agency deployed an LLM-based tool, Elsa, voluntarily used by more than 70% of staff, according to internal agency data. Since that initial deployment, FDA program teams have driven frequent modifications to better integrate Elsa into workflows.

Agentic AI deployment will enable FDA staff to further advance the use of AI to assist with more complex tasks, such as meeting management, pre-market reviews, review validation, post-market surveillance, inspections and compliance and administrative functions.

As part of the agentic AI deployment, the agency is launching a two-month Agentic AI Challenge for staff to build Agentic AI solutions and demonstrate them at the FDA Scientific Computing Day in January 2026.

“FDA's talented reviewers have been creative and proactive in deploying AI capabilities — agentic AI will give them a powerful tool to streamline their work and help them ensure the safety and efficacy of regulated products,” says Chief AI Officer Jeremy Walsh.

Built within a high-security GovCloud environment, the models do not train on input data nor any data submitted by regulated industry, safeguarding the sensitive research and data handled by FDA staff. The deployment is another major step in the agency’s multifaceted plan to embed AI more deeply into workflows and achieve unprecedented operational efficiency. **FE**

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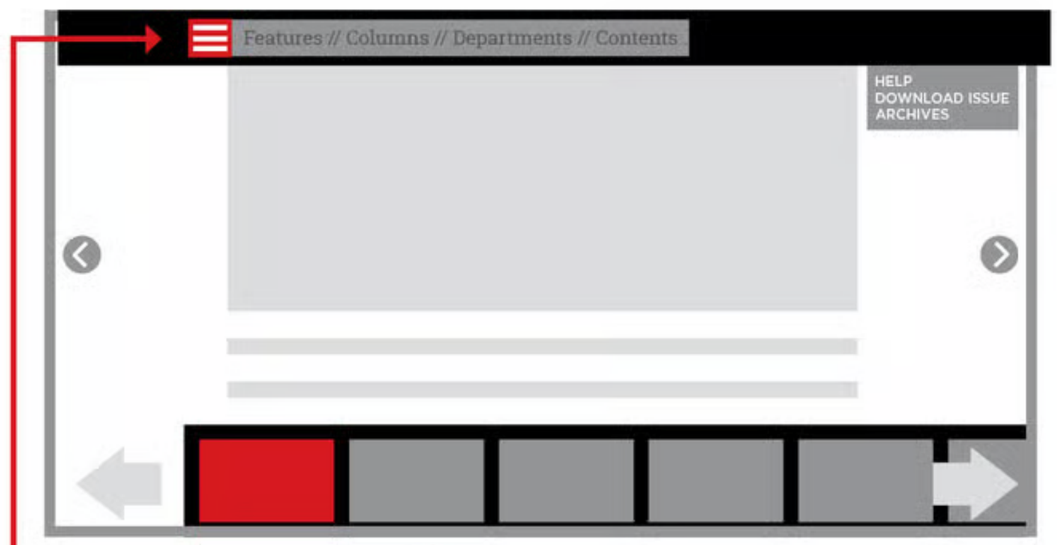

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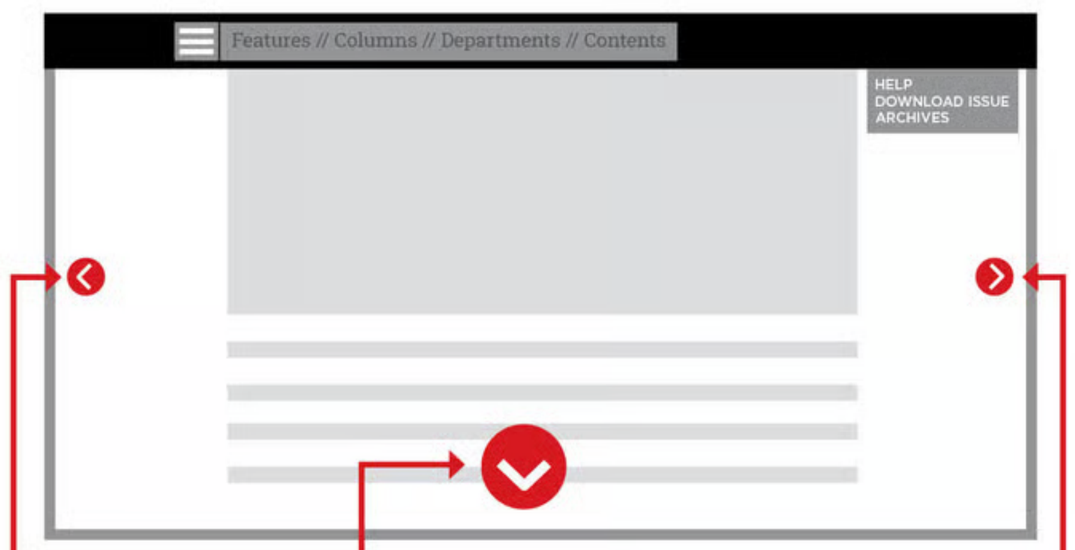

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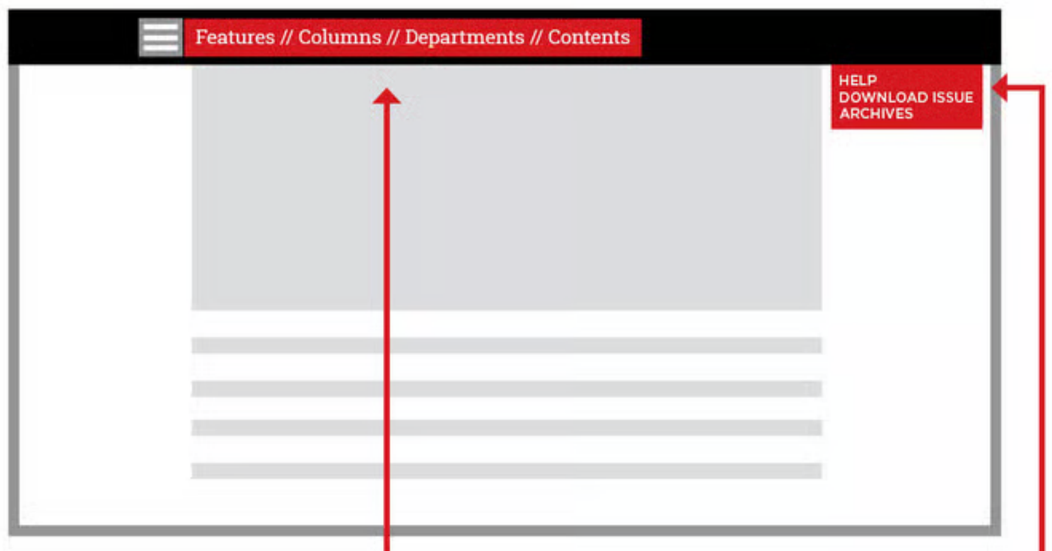

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