

# FOOD PROCESSING



THE MAGAZINE OF THE FOOD INDUSTRY

MARCH 2023

## The Future is Now

The Food Plant of the Future will have more automation, flexibility and a touch of artificial intelligence. • 18



New ways to reduce sugar • 25

Out-of-the-box thinking  
on snack foods • 29

Meat & poultry post-pandemic • 33

Material handling & conveying • 37

**ADVANCED,  
100% SYNTHETIC  
NSF H1 REGISTERED  
FOOD GRADE LUBRICANTS  
DESIGNED TO...**

**MAKE YOUR  
PLANT RUN  
BETTER.**



Engineered from the ground up to provide unsurpassed performance in food processing plants. These high performance, 100% synthetic lubricants provide extended lube intervals, multiple application capability, lubricant inventory consolidation and improved performance. All while maintaining strict H1 safety requirements. Available products include...

### SFGO ULTRA SERIES MULTI-PURPOSE FLUIDS

- Ultra high-performance, 100% synthetic, PAO-based fluid lubricants.
- Available in 13 ISO viscosity grades for a wide variety of applications.
- Extremely Versatile, Recommended for air compressors, hydraulic systems, bearings, gearboxes, chains and more.

### SYNXTREME FG SERIES GREASES

- 100% synthetic, calcium sulfonate complex type greases.
- Super multi-purpose - ideal for a variety of applications.
- They provide excellent anti-wear and extreme pressure protection.
- High temperature stability - effective to 450°F / 232°C.

### PGO-FGL SERIES GEAR LUBRICANTS

- Ultra high-performance, polyalkylene glycol (PAG)-based gear oils.
- The ultimate gear lubricants for demanding applications.



Scan QR Code for More Information  
About Lubriplate's Products and Services.



**Lubriplate**  
H1 LUBRICANTS

Newark, NJ 07105 / Toledo, OH 43605 / 800-733-4755  
To learn more visit us at: [www.lubriplate.com](http://www.lubriplate.com)



INCLUDED AT NO ADDITIONAL CHARGE

**Lubriplate's  
ESP**

**Complimentary Extra Services Package**

COLOR CODED LUBE CHARTS & MACHINERY TAGS  
PLANT SURVEYS / TECH SUPPORT / TRAINING  
LUBRICATION SOFTWARE / FOLLOW-UP OIL ANALYSIS

# ON TIME AND READY™ FOR WORK

Our uniforms are dependably clean and professionally managed.

Your business runs on a busy production line. That's why you need uniforms that are **ready** every time. Cintas is here for you with a uniform management program that delivers, keeping you **ready** for the shift ahead.



Third party certified  
hygienically clean  
(Hohenstein)



HACCP garment  
laundry and  
delivery process



Technology-based  
garment management



Best-in-class  
smocks, aprons  
and butcher coats



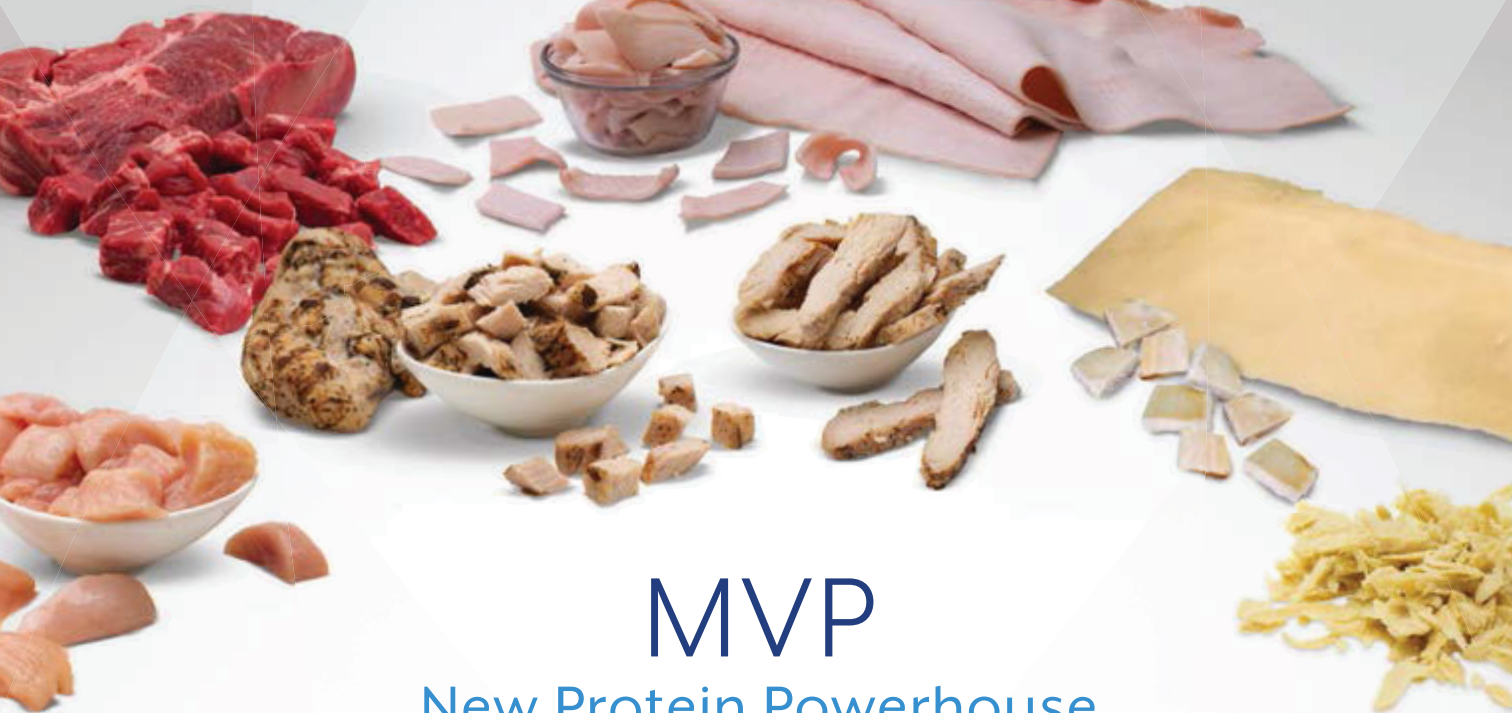
KNIT CUFF BUTCHER COAT



Learn more about our managed  
uniform program at [Cintas.com](https://www.cintas.com).

**CINTAS**<sup>®</sup>  
READY FOR THE WORKDAY<sup>®</sup>





# MVP

## New Protein Powerhouse

The M VersaPro™ (MVP) Dicer sanitary (IP69K) design and versatile cutting (VFD-equipped 5HP Crosscut) of proteins. Patented fluted crosscut. Deeper circular knife penetration. Outperforms the M6 by a resounding 33%. Explore the MVP to improve your line.



#1 Best selling provider of industrial cutting machinery throughout the world.

# URSCHTEL®

The Global Leader in Food Cutting Technology

Set up a free test-cut of your product.

[www.urschel.com](http://www.urschel.com)



# CONTENTS

## FEATURES

### COVER STORY

#### The Future (Plant) Is Now

The Food Plant of the Future will have more automation, flexibility and artificial intelligence.

18

### FORMULATION

#### Other Ways To Be Sweet

There are some stellar natural sweeteners, but sugar's functional attributes also must be replaced.

25

### PRODUCT DEVELOPMENT

#### New Thinking in the Snack Food Aisle

Families are framing how America snacks; here's what brands can do to help.

29

### INGREDIENTS

#### Fish Bones in the Name of Sustainability

31

### PLANT OPERATIONS

#### Meat & Poultry Plants Post-Pandemic

What comes after the Covid 'emergency' designation is removed?

33

### TECHNOLOGY

#### Conveying Efficiency

The safe, expeditious movement of products continues to advance.

37



## DEPARTMENTS

EDITOR'S PLATE	7	ROLLOUT	16
ON THE WEB	8	NEW INGREDIENTS	32
POWER LUNCH	9	NEW EQUIPMENT	40
NEWS	11	CLASSIFIEDS	42



***mi* TIME MEANS  
MORE ME TIME**

With the broadest mix of industrial products and technical expertise at your fingertips, the only downtime you'll need to worry about is **yours.**



[motion.com](http://motion.com)



# Hire the High-Tech Unemployed

With so many layoffs in the technology world, maybe food plant jobs are looking attractive.

I am a fan of two-birds/one-stone scenarios. I've used them before in this column. This month I have a new brainstorm. Here are three current problems in business:

1. The food & beverage industry is having a hard time finding any talent.
2. The food & beverage industry is increasingly automating and needs to take at least a few steps toward Industry 4.0, the Industrial Internet of Things.
3. Recent months have seen a flood of layoffs at high-tech companies.

You see where I'm going? It's been a tough couple of months for technology companies. Alphabet (Google) laid off 12,000 workers. Meta (Facebook) cut 11,000. Even IBM, which has been in business for 111 years, is cutting thousands of jobs. Maybe it's not exactly tech, but Amazon's 18,000 ex-employees know something about delivering products.

Microsoft sacked 10,000 – you could finally have someone who understands Office 365 and Teams!

The point is, there are suddenly thousands and thousands of workers on the street with credentials and experience you probably wouldn't see as ideal for your company ... but maybe you should.

And it's not just the recently laid off, tech-experienced you should be

poaching or pitching. All the above layoffs plus the arrival of artificial intelligence (AI) tools like ChatGPT, which may eliminate jobs in the future, may be causing college students and recent grads to rethink the pursuit of a high-tech career. Maybe they'd be interested in a blue work-shirt with a white collar.

"Fearing an AI Takeover, 1 in 6 Gen Z'ers May Switch to Blue Collar Careers," said the headline of a survey report from Intelligent.com, an online information service for education, particularly students. In February, the site surveyed 1,000 students between the ages of 16 and 26. Some of the bullet points:

- 82% of tech majors are concerned about layoffs; many are shifting career goals.
- One-third of Gen Z'ers plan to pursue a blue-collar career.
- One in six may switch from a white-collar career to a blue-collar career, citing fears of AI's effect on office jobs.
- Half believe AI will replace at least one in five white-collar jobs over the next five years.

All of which takes me to this month's cover story. The Factory of the Future is not going to be built or staffed by people with the same skills that have served the food & beverage industry so well for the past 100 years. We need technology, digital natives, people comfortable with "devices." Now's the time to hire some Gen Z'ers.

## Introducing Andy Hanacek

As I said in my February Editor's Plate, Pan Demetrakakes, our longtime senior editor, retired at the end of 2022. It was a challenge finding the right replacement, but we have, and you'll see his work all over this issue.

Andy Hanacek comes to us after 17 years as editor in chief of *The National Provisioner*, a magazine focused on the meat & poultry sector. Before that, he spent a few years on *Snack Food & Wholesale Bakery*. (Interestingly, he once was an associate editor on *Pro Football Weekly*).

He's won his share of awards and worked in communications for a food safety company and a major meat processor.

He hit the ground running, penning this month's cover story, "The Food Plant of the Future," plus (appropriately) a meat & poultry plant story plus a technology feature on conveying and material handling. You'll be seeing a lot from him every month going forward. If you know him from his former lives, drop him a note ([ahanacek@endeavorb2b.com](mailto:ahanacek@endeavorb2b.com)). ■

*Dave Fusaro*



Written by  
**Dave Fusaro**

EDITOR IN CHIEF

DFUSARO@ENDEAVORB2B.COM

# What's New Online

Don't miss what's happening on [FoodProcessing.com](https://www.foodprocessing.com).

**W**e're regularly adding new things to the website that you won't find in the pages of the magazine. Let us make things even easier on you: Use these QR Codes to gain access to these features on our website. ■

## WEBINARS



### Cybersecurity webinar

On April 4, we're hosting an all-star panel discussion of Food Processing partner Dragos' ICS/OT Cybersecurity Year in Review. We'll be talking with experts about the threat landscape for food and beverage manufacturers, incident response trends from the front lines and data-driven recommendations for keeping your operations running. Our panel will share insights from the cumulative knowledge of thousands of engagements with manufacturers and they'll make sense of the trends and identify proactive steps you can take to secure your manufacturing facilities while improving yield and efficiency.



### Pneumatic conveying

Join us for a May 3 webinar with experts from some of the industry's top pneumatic conveying suppliers. Each of our experts will talk about new developments, improvements and

industry trends. Moderator (and Chief Editor) Dave Fusaro will lead a discussion about the most important issues affecting pneumatic conveying.

## AWARDS



### Influential Women in Food

Food Processing launched Influential Women in Food in 2022 so we could recognize women in the food and beverage industry who are helping to effect change in the workforce. Between now and March 31, we'll be collecting nominations on our website.

## SUBSCRIBE



### Keep up with Food Processing

From daily news to features on innovations and best practices, Food Processing has you covered. Be sure to visit the subscription area on our website to sign up for our newsletter as well as to check out our Issue Archives. Need to renew a print subscription? You do that on the website too.



Written by  
**Erin Hallstrom**

DIRECTOR OF DIGITAL STRATEGY

## EDITORIAL TEAM

EDITOR IN CHIEF

**Dave Fusaro**

dfusaro@endeavorb2b.com

SENIOR EDITOR

**Andy Hanacek**

ahanacek@endeavorb2b.com

DIRECTOR OF DIGITAL STRATEGY

**Erin Hallstrom**

ehallstrom@endeavorb2b.com

CONTRIBUTING EDITORS

**Anne-marie Ramo, Claudia O'Donnell**

**Lisa Payne**

Reprints Marketing Manager,  
Mossberg & Co. Reprints  
lpayne@mossbergco.com  
(574) 289-9253

## EDITORIAL ADVISORY BOARD

Mohamed Z. Badaoui Najjar, Ph.D.  
James Davis | Leslie Herzog | Steven Hill, Ph.D.  
Leslie Krasny | Evangelia Pelonis  
Jagriti Sharma | Tony Verdini | Tony Verlezza  
Joel Warady | Elaine Wedral, Ph.D.

## PUBLISHING

VP/GROUP PUBLISHER

**Mike Brenner**

mbrenner@endeavorb2b.com

## DESIGN & PRODUCTION

ASSOCIATE ART DIRECTOR

**Ashley M. Doles**

adoles@endeavorb2b.com

SENIOR PRODUCTION MANAGER

**Anetta Gauthier**

agauthier@endeavorb2b.com

## EXECUTIVE STAFF

VP/GROUP PUBLISHER

**Keith Larson**

CIRCULATION REQUESTS

**Lori Books**



**Endeavor Business Media**  
1501 E. Woodfield Rd, Suite 400N,  
Schaumburg, IL 60173



# What the Consumer Goods Forum Achieved in 2022

Processors and retailers around the globe made progress on deforestation, plastic waste and forced labor.

**T**he Consumer Goods Forum (CGF), parent of the Global Food Safety Initiative, in January published its annual report, “Collaborating for Action - 2022 Review.” The report highlights the achievements both CPG manufacturers and retailers globally made last year, including progress on tackling deforestation, global plastic waste and working to end forced labor.

Created with advisory firm KPMG, the annual report reviewed the collective work across CGF’s eight Coalitions of Action: Food Waste, Forest Positive, Global Food Safety Initiative, Collaboration for Healthier Lives, Human Rights-Working to End Forced Labor, Plastic Waste, Product Data and the Sustainable Supply Chain Initiative. All were measured against 2021’s stated goals, and in all cases progress was reported.

The report underlines how ongoing global crises, such as supply chain disruption, conflict and the energy crisis, have strengthened the need for a collective response. The complexity and urgency of these challenges brings collaboration to the fore.

The CGF acts as a convener of senior leaders from the world’s most influential manufacturers and retailers to learn from each other

on a pre-competitive basis and to work together on major industry challenges.

Developments achieved in 2022 include:

- **The Plastic Waste Coalition** reported 97% of its 40 members have integrated the golden design rules on packaging into their decision-making processes. The group also advocated for extended producer responsibility through a published paper on Extended Producer Responsibility (EPR) programs for packaging. In 2023 the forum aims to play a significant role in shaping the new United Nations plastics treaty.
- **The Forest Positive Coalition** released its second annual report at New York Climate Week in September, which illustrates the coalition’s progress in removing deforestation, forest degradation and land conversion from key commodity supply chains. The report also includes updates on members’ collective reporting against their ambitious performance metrics, which include the percentage of supplies from regions at high-risk/priority for deforestation and the performance of upstream suppliers against the coalition’s Forest Positive Approach.

- **The Human Rights Coalition-Working to End Forced Labor** (HRC) accelerated efforts to make due diligence and responsible recruitment the norm in the consumer goods industry. Coalition members continued to implement and improve human rights due diligence systems in their own global operations; launched the HRC’s People Positive Palm Project in Kuala Lumpur to address forced labor risks in the Malaysian palm oil sector; and worked with industry partners to release guidance on how companies can repay worker-paid recruitment fees and uphold the CGF Priority Industry Principles.
- **Collaboration for Healthier Lives** continued its hyper-local strategy in 2022 reaching 255 million people. Highlights included winning the prestigious Sirius Sustainable Collaboration prize in France and putting a key focus on reaching the underserved and less affluent populations, in particular in the U.S. The coalition conducted a strategy refresh embedding sustainability in its core mission with healthier and more sustainable diets engaging over 600 CGF professionals in its learning series.
- **The Global Food Safety Initiative** (GFSI) forged ahead with its program of modernization and

reform – the Race to the Top framework (RTTT) – designed to improve trust and confidence in benchmarking of third-party food safety certification programs and oversight of their performance; building food safety capability in subject matter experts and building partnerships with food safety regulators to support regulation. 150,000 certificates were issued against GFSI-recognized programs. The GFSI conducted a yearlong consultation on its new capability-building framework that will be piloted in 2023 and hosted the first face-to-face food safety conference in Barcelona since before the pandemic.

→ **The Sustainable Supply Chain Initiative** (SSCI) saw four new

schemes apply to be benchmarked. The Responsible Fishing Vessel Standard successfully completed the benchmarking process and achieved SSCI Recognition, the first to do so under the SSCI's At-Sea Operations scope. The coalition also launched work to develop criteria for an environmental benchmark.

- **The Product Data Coalition** focused on encouraging widespread adoption of coalition initiatives. For example, the Verified by GS1 Registry is moving toward mass adoption with 237 million GTINs uploaded to the database.
- Members of the **Food Waste Coalition** continued to report using the harmonized template on the Food Waste Atlas platform, helping to

demonstrate a good reporting standard and promote greater transparency to the wider CGF member companies. The coalition continues to serve as a platform for its members to share learnings and best practices for taking effective actions to reduce food waste in their own operations, as well as with their suppliers and consumers. ■

The Consumer Goods Forum ([www.theconsumergoodsforum.com](http://www.theconsumergoodsforum.com)) brings consumer goods manufacturers and retailers together globally, with most representatives being the CEOs of the member organizations. The forum facilitates their collaboration, along with other key stakeholders, to secure consumer trust and drive positive change, including greater efficiency. It's perhaps best known for its the Global Food Safety Initiative, which has created food safety standards enforced by third-party certifiers throughout the world.

# Xtreme Versatility Metal Detectors for every process



## Xtreme Metal Detector Advantages

- Best-in-Class Sensitivity
- Easy Setup and Operation
- Multi-Language Interface
- Remote Factory Support



Liquid Line



Vertical Flow



Vertical Fill & Seal

Eriez.com | 814.835.6000

# ERIEZ



# NEWS

## IN THIS SECTION

- » Migrant child labor found
- » Kerry pleads guilty to adulteration
- » Dole suffers cyberattack

## CEOs 'Sell' Their Companies to Analysts

2023 strategies revealed at the annual Consumer Analyst meeting.

**E**very February, top executives of some of the largest, publicly held food & beverage companies “sell” their companies to the nearly 500 financial analysts who attend the Consumer Analyst Group of New York Conference. Following are highlights from the 12 food company presentations from Feb. 21-24.

### General Mills

General Mills' presentation focused on the strong financial results delivered by its “Accelerate” strategy. The company has prioritized resources to drive improved return, centered around decisions on how to create competitive advantages and also what businesses to embrace and what to divest, said Jeff Harmening, chairman and CEO. The company called out its North American Retail and Pet Food business units specifically as drivers of its growth, both now and in the future. General Mills also raised its full-year fiscal 2023 guidance, now forecasting organic net sales growth of approximately 10%.

### Conagra Brands

Conagra Brands is nearing the end of a nearly eight-year company transformation. President/CEO Sean Connolly detailed the overhauls made to its frozen food brands and pointed out positive signs of growth, including Millennials starting families, the rise in remote work and in-home meals and the improved perceived value of frozen foods among consumers. On the snacking side, Conagra sees accelerating growth opportunities in meat snacks, popcorn, seeds and sweet treats.

### Coca-Cola

James Quincey, chairman and CEO, believes the company has significant room for growth among consumers who do not currently consume Coca-Cola products around the globe and through categories it anticipates will grow significantly between now and 2026, including energy drinks and alcohol. To capitalize, Coca-Cola will continue to invest in its brands and claims to be raising the bar on both marketing and innovation, leaning

on digital experiences and access points for consumers. The company cautioned against inflation and macroeconomic uncertainty as factors that could slow growth, but it also believes it has strong momentum across its operating segments.

### Kraft Heinz

Miguel Patricio, chairman and CEO, updated attendees on the progress of the final stage of Kraft Heinz's strategic transformation plan, focused on bringing technology and cutting-edge innovation to its operations. U.S. retail is a “must-win,” but all three pillars (including global foodservice and emerging international markets) are needed to drive growth. Carlos Abrams-Rivera, Kraft Heinz EVP & president of North America, says the company sees “the opportunity for \$2 billion in incremental net sales from innovation in North America Retail from 2023 to 2027,” delivered by brand innovation. The execs expect high single-digit inflation to continue to pressure results this year.

*Continued on next page*

Continued from p11

### **Mondelez International**

Mondelez has shifted investment to a more focused portfolio of brands at higher levels than in the past, and presenters highlighted three areas driving long-term growth: initiatives in the company's chocolate, biscuits and baked snacks categories; advancing digital-enabled personalization and customer-focused initiatives; and continuing to pursue mergers and acquisitions in areas of scale and expertise.

### **McCormick & Co.**

Lawrence Kurzius, chairman and CEO, said today's consumers are interested in flavors that are fresh, convenient and a good value, and they're also interested in flavor exploration — all strong suits for the company. He said McCormick is promoting hot sauce as the condiment of the next generation, responding to Millennial and Gen Z consumers' craving for spicy, hot flavors in eating and drinking occasions.

### **Kellogg**

Even before the meeting, Kellogg Co. said it decided against spinning off its plant-based foods unit into a separate business — it will be folded into the future snack company. As it prepares to split into two companies, its snacks business experienced more growth than cereal and frozen. The company believes supply chain and capacity challenges that hampered frozen foods and cereal are in the past and momentum is building in those categories in 2023. Kellogg believes the cereal business will thrive on its own once fully recovered from supply

challenges due to a plant fire in 2021 and workers' strike in 2021-22.

### **PepsiCo**

Ramon Laguarta, chairman and CEO, discussed the results from a multiyear portfolio transformation project, focused on consumers making positive choices in its convenient foods and beverages segments. Investments into beverage brands have been centered around zero sugar attributes, and brands such as Gatorade, Mountain Dew and Pepsi have seen positive response, as have the Propel, Lifwatr and Bubly brands. On the convenient foods side, PepsiCo reports initiatives in the works around sodium reduction, fat content and new ingredient bases (such as multigrain, rice and peas, for example). PepsiCo sees grand opportunity to broaden its portfolio in North America by entering new categories and eating occasions, to become part of meals for consumers.

### **Constellation Brands**

Constellation Brands said its move toward higher-end beverage brands was directly in response to consumers' shift toward premium wine, spirits and beer. The company plans to invest \$5-5.5 billion in capital expenditures into the beer business by 2026 in order to support growth. Any acquisitions in the near future are expected to be on the smaller side, the company said.

### **J.M. Smucker**

Mark Smucker, chairman and CEO, explained the company's shift toward Uncrustables, cat food, dog snacks and coffee product lines, and away from the dog food category, which is being sold to Post Holdings. The company estimates Uncrustables will

grow to \$1 billion in sales by fiscal 2026, and that pet brands Meow Mix and Milk-Bone will carry that category to new heights. Today, the coffee category represents approximately half of Smucker's net sales, but the company expects Uncrustables to take over as the leading category in net sales for the company in the future — even with expected growth in cold-brew coffee products.

### **Hostess Brands**

While discussing its recent product innovation successes during its CAGNY presentation, Hostess Brands unveiled a new snack cake product for 2023, named Hostess Kazbars. Kazbars are said to be "candy bar-inspired," and feature multiple layers and textures, with cake, crème, chocolate, caramel and crunchy candy layers enrobed in chocolate. Hostess believes consumers seek indulgent snacks but also balance those occasions with "better for you" options throughout the day.

### **Nestle**

The first thing of note is that Nestle SA's global sales exceeded \$100 billion for the first time in 2022 (based on our conversion of 94.4 billion Swiss francs), cementing its position as the world's largest food & beverage company. Corporate EVP & CFO Francois-Xavier Roger devoted the company's presentation to its petcare division, apparently the company's star, which has grown sales by double digits the past three years and now represents 19% of the company (about US\$19 billion). Annual growth of the entire pet food category is estimated at 6-8% through 2025, premiumization continues and it's a loyal category — "there is very little brand switching," he said.



## Migrant Child Labor Found in Food Plants

February brought a handful of stories exposing the use of migrant children in food plants.

Actually, the story began last November when the U.S. Dept. of Labor found child labor being used by Packers Sanitation Services Inc. (PSSI) as the contract service cleaned a number of meat plants. Ultimately, DOL discovered 102 children 13 to 17 years old working in 13 meat-processing facilities in eight states.

The list specified 27 underage workers at JBS USA's Grand Island, Neb., plant, 26 at a Cargill plant in Dodge City, Kan., and 22 at a JBS facility in Worthington, Minn. Single-digit numbers were at plants of Buckhead Meat, George's Inc., Gibbon Packing, Greater Omaha Packing, Maple Leaf Farms, Turkey Valley Farms and Tyson. At least three of the minors reportedly suffered injuries while on the job with PSSI.

Then, on Feb. 26, the *New York Times* published an exhaustive investigation that found hundreds of underage migrant children working in plants in all industries across the country, with food at the forefront. It started with a vignette of a 15-year-old Guatemalan immigrant who was working nights in a Hearthside Food Solutions plant in Grand Rapids, Mich.

The article noted these children "bake dinner rolls sold at Walmart and Target, process milk used in Ben & Jerry's ice cream and help debone chicken sold at Whole Foods."

Hearthside CEO Darlene Nicosia said the company ensures all its employees are legal, but she also listed four steps Hearthsides was immediately undertaking and four more that the company requested from its staffing agencies.

The *Times* also reached out to other food companies identified in the investigation. "General Mills ... said it recognized the 'seriousness

of this situation' and was reviewing *The Times'* findings. PepsiCo, which owns Frito-Lay and Quaker Oats, declined to comment.



## High Performance Doors: For Food, Beverage, Cold Storage

- Models for cooler and freezer applications.
- Fast opening speeds for effective environmental control and fast ROI.
- Designed for minimal required maintenance.



## Kerry Pleads Guilty to Adulteration

Kerry Inc. pleaded guilty Feb. 3 to a charge that it manufactured breakfast cereal under unsanitary conditions at a facility in Gridley, Ill., that was linked to a 2018 salmonellosis outbreak involving Kellogg's Honey Smacks.

Pursuant to a plea agreement with the U.S. Dept. of Justice, Kerry pleaded guilty to one misdemeanor count of distributing adulterated cereal. If the guilty plea is accepted by the court, the \$19.228 million fine and forfeiture will constitute the largest-ever criminal penalty following a criminal conviction in a food safety case, according to DOJ.

In June 2018, the FDA and the Centers for Disease Control and Prevention linked an ongoing outbreak of salmonellosis to Kellogg's Honey Smacks cereal produced at Kerry's Gridley facility. Kellogg recalled all Honey Smacks manufactured at the plant since June 2017. The CDC eventually identified more than 130 cases of salmonellosis linked to the outbreak, with illness onset dates beginning in March 2018. The CDC did not identify any deaths related to the outbreak.

Ravi Kumar Chermala was director of quality assurance for Kerry Inc. at the time, overseeing sanitation programs at several Kerry manufacturing plants, including the one in Gridley. In October 2022, Chermala admitted in court he directed subordinates not to report certain information to Kellogg about unsanitary conditions at the Gridley plant. In addition, he directed subordinates there to alter the plant's program for monitoring the presence of pathogens, limiting the facility's ability to accurately detect unsanitary conditions.

Chermala was fired by Kerry in September 2018. Last October, he pleaded guilty to three misdemeanor counts of causing the introduction of adulterated food into interstate commerce. He was scheduled to be sentenced in February.

## Dole Operations Hit by Cyberattack

Dole Plc on Feb. 22 briefly acknowledged a "cybersecurity incident that has been identified as ransomware" and added "the impact to Dole operations has been limited."

But various media were reporting the incident occurred much earlier in the month, apparently lasted several days and impacted Dole operations in more than a limited way. The Miami CBS affiliate reported shortages of Dole prepackaged salads in local groceries, and cited a Feb. 10 memo to retailers that said: "Dole Food Company is in the midst of a cyber attack and have subsequently shut down our systems throughout North America," Emanuel Lazopoulos, senior vice president at Dole's Fresh Vegetables division, said in the memo.

Dole has four processing plants in the U.S. and employs more than 3,000 people. It's uncertain how long production was shut down.

In its public statement, the company said, "Upon learning of this incident, Dole moved quickly to contain the threat and engaged leading third-party cybersecurity experts, who have been working in partnership with Dole's internal teams to remediate the issue and secure systems. The company has notified law enforcement about the incident and are cooperating with their investigation."

## FDA Permits Heart-Health Claim for Cocoa Flavanols

The FDA in February announced a "letter of enforcement discretion," which essentially permits a qualified health claim connecting the consumption of cocoa flavanols in high-flavanol cocoa powder with a reduced risk of cardiovascular disease.

The FDA responded to a health claim petition submitted on behalf of Barry Callebaut AG of Switzerland. The cocoa company presented analysis of more than 240 scientific articles and several scientific studies that made the connection between cocoa flavanols and heart health.

Flavanols are antioxidants found in a number of plants.

"After reviewing the petition and other evidence related to the proposed health claim, the FDA determined that there is very limited credible scientific evidence for a qualified health claim for cocoa flavanols in high flavanol cocoa powder and a reduced risk of cardiovascular disease," the agency wrote in the letter.

"Very limited" evidence, but enough for the "qualified" claim. Food products using the claim must contain at least 4% of naturally conserved cocoa flavanols.

"This qualified health claim only applies specifically to cocoa flavanols in high-flavanol cocoa powder and foods that contain high-flavanol cocoa powder," the letter continued. "The claim does not apply to regular cocoa powder, foods containing regular cocoa powder, or other food products made from cacao beans, such as chocolate."

## Acquisitions

**J.M. Smucker Co.** in February agreed to sell its dog food business – including Rachael Ray Nutrish, Kibbles 'n Bits, Nature's Recipe and Gravy Train pet food brands, plus 9Lives cat food and its private label pet food business – to **Post Holdings Inc.** The deal includes manufacturing and distribution facilities in Bloomsburg and Meadville, Pa., and Lawrence, Kan. The deal is valued at approximately \$1.2 billion, consisting of \$700 million in cash and approximately 5.39 million shares of common stock of Post. Smucker is keeping most cat foods and pet treats.

**Dole Plc** said it will sell its Fresh Vegetables Division to an affiliate of **Fresh Express Inc.** for \$293 million in cash. Fresh Express is a wholly owned subsidiary of **Chiquita Holdings Ltd.** The Dole division sources whole produce from farms across the U.S., and its four processing plants produce whole vegetables, including iceberg, romaine, leaf lettuces, cauliflower, broccoli, celery, asparagus, artichokes, green onions, sprouts, radishes and cabbage, as well as salads and meal kits. The division reported revenue of \$1.28 billion at the end of 2021, and it employs more than 3,000 people.

**Tyson Foods Inc.** agreed to acquire **Williams Sausage Co. Inc.** of Union City, Tenn., which employs approximately 500 employees and provides fresh and fully cooked sausage, bacon and sandwiches to retail and foodservice customers. Terms of the acquisition were not disclosed.

And one non-divestiture: **Kellogg Co.** announced in February it will not spin off its plant-based protein business, primarily Morningstar Farms, when Kellogg splits itself sometime this year. Chairman and CEO Steve

Cahillane implied the division would have a difficult time on its own with “an imminent shakeout coming” in the meat analogue business.

Morningstar will go with the snack business; the other company to be spun off will be focused on breakfast cereals.



# FOOD PROCESSING MAINTENANCE SOLUTIONS



For over 60 years LPS® has earned a reputation for both quality and performance in critical industrial applications. LPS® DETEX® combines that expertise with food safety programs to produce a full line of maintenance solutions specifically formulated for food processing facilities.

LPS® DETEX® lubricants, penetrants, electronic cleaners, and greases save time and money by extending equipment life, reducing repair time, and lowering frequency of preventative maintenance.

Plastic components used to package LPS® DETEX® products are both metal & X-ray detectable, helping to reduce the risk of foreign object contamination within your facility.



**METAL  
DETECTABLE**

SEE IT IN ACTION!





**X-RAY  
DETECTABLE**



# ROLLOUT

## Beef and Bacon Dogs

**Slater's 50/50**, a brand of gourmet burger restaurants founded in Southern California, is entering the retail sector with **Slater's 50/50 Beef & Bacon Hotdogs**. As the name suggests, the dogs are half beef and half bacon. They are making their debut in select Kroger stores in Atlanta, Nashville, Louisville and Columbus, Ohio; Basha's in Arizona; and Smith's Food & Drug stores in South-west states. Manufactured by **Bar-S Foods Co.** for Slater's 50/50, packs contain four quarter-pound dogs and retail for \$5.99 to \$6.99.



“Slater's 50/50 restaurants are known for our over-the-top menu options and mouth-watering flavor combinations,” says Ernie Romo, chief operating officer for Slater's 50/50. “It was a natural move for us to develop an exciting new hotdog product extension of our gourmet restaurant experience, and we believe consumers will love being able to have them in the refrigerator at home.”

## Juices With Benefits

Farmer-owned co-operative **Ocean Spray Cranberries Inc.** is growing its shelf-stable juice-with-benefits lineup with three varieties. **Immunity Cranberry Blueberry Acai** is formulated to help support immune health with 130% of the recommended daily value of vitamin C, 15% DV of vitamin E and 15% DV of zinc, along with 80 calories per 10-oz. serving. **Immunity Orange Mango** also supports immune health. A serving contain 100% DV of vitamin C, 10% DV of vitamin E and 10% DV of zinc, along with 60 calories. **Revitalize Cranberry Pineapple** contains electrolytes — namely magnesium — to help hydrate. A 10-oz. serving contains 80 calories.

All varieties are made with real fruit juice, have zero added sugars and contain no artificial colors or sweeteners. The juices come in 60-oz. multi-serve bottles and six packs of 10-oz. single-serve bottles. The new varieties are supported by a TV campaign coining the term “cranfidence.”



## Sustainable Cheese Crackers

**Cheddies** was founded by Texas-based brothers Francisco and Tomas Pergola, who were looking for a healthy but delicious alternative to the highly processed cheese-based snacks they grew up eating. While still in college, they started to create a sustainably sourced cheese cracker with the savory flavor and crunch they loved, while also being kind

to the planet. They partnered with **Alexandre Family Farms** — one of the only regenerative dairy farms in the U.S. — to create the proprietary recipe that gives Cheddies its uniquely cheesy taste.

Cheddies are made with only seven ingredients and contain 130 calories and 6g of protein per serving. The crackers come in Classic Sea Salt, Spicy Cheddar and White Cheddar flavors with a 4.2-oz. box having a suggested retail price of \$5.99. They are also available in 100-calorie snack packs.

“We’re on a mission to put real, fresh cheese back in cheese snacks,” says CEO Francisco Pergola. “We believe Cheddies is the perfect cracker for the next generation of snackers looking for tasty, sustainable, healthy snacks that also put flavor first.”

## A Smooth Move for Cottage Cheese

According to an attitudes and usage survey conducted by **Kemps**, a business of **Dairy Farmers of America**, more than 40% of consumers said they would be motivated to eat cottage cheese if it tasted better and had a better texture. That's what the brand set out to do with its new **Kemps**



**Smooth Cottage Cheese for Kids.** The new offering gives parents a nutritious and delicious option for their children, as the product packs almost twice as much protein per ounce as most yogurts.

It is made with 4% whole milk cottage cheese that gets blended into a smooth and creamy texture with real fruit. The initial launch is in three flavors, each tied to a specific licensed **Hasbro** brand: Peppa Pig Strawberry Banana, PJ Masks Power Heroes Strawberry and Transformers Mixed Berry. Sold in four packs of 4-oz. cups, each cup contains 130 calories, 4g of fat, 11g of sugars and 10g of protein along with three probiotic cultures: Bifidobacterium, Lactobacillus acidophilus and Lactobacillus paracasei. The suggested retail price is \$3.98.

## Thirty Minutes at 425

**Kraft Heinz Co.** created **Homebake 425/30** to give families more time together and spend less time cooking. The new frozen brand includes five entrees, five side dishes and five vegetables, all made in a 425-degree oven in 30 minutes. Each package contains about four servings.

Entrées are Chicken Parmesan, Garlic Butter Chicken Scampi, Italian Style Meatballs in Marinara Sauce, Pulled Pork with BBQ Sauce and Southwest Chipotle Chicken. Sides are Creamy Tomato Tuscan Style Pasta, Homestyle Mac & Cheese, Loaded Scalloped Potatoes, Parmesan Crusted Potato Medley and Southwest Style Cheesy Rice. The vegetables

are Cheesy Broccoli, Chipotle Glazed Carrots, Green Bean Casserole, Italian Style Cauliflower and Southwest Style Corn.

Consumers can mix up the offerings for variety. They're available in select retail freezers. The brand is also selling direct to consumers from its website. Entrees cost \$15, while sides and vegetables are \$9.50.



## Cobranding Galore

**Conagra Brands Inc.** kicked off 2023 with a tasty collection of sweet treats, breakfast mixes and flavored seeds. The **Snack Pack** brand is seeing the most action, with four new flavors of puddings and gels, three of which include an external licensing partner. Varieties are Snack Pack **Cinnabon**, Snack Pack **Fruity Pebbles**, Snack Pack Ice Cream Sandwich Pudding and Snack Pack **Starburst**.



Conagra's partnership with the beloved cinnamon roll brand extends to three other new products: **Duncan Hines** Epic Cinnabon Muffin Kit, **Mrs. Butterworth's** Epic Cinnabon Pancake Kit and Mrs. Butterworth's Cinnabon Syrup. In

anticipation of warmer weather, when baseball training camps start up, there's new **David-Frank's** **RedHot** Jumbo Sunflower Seeds.

"Our teams are constantly innovating so that our food delivers fun and flavor," says Lucy Brady, president of grocery and snacks. "With the addition of dynamic licensing partners that team with our iconic brands, our collection of new products is one that we're excited to share with consumers."



Written by  
**Andy Hanacek**

SENIOR EDITOR

# THE FUTURE (PLANT) IS NOW

The Food Plant of the Future will have more automation, sensors, flexibility, a touch of artificial intelligence – and be able to feed more people with fewer resources.

**A**

s the world's population continues to grow, the demand for food follows. Food & beverage processors have little choice than to innovate to meet that future demand. Yet, the path can wind and branch in many directions. Depending on the food segment, specific expectations vary as to what the food plant of the future might feature.

Overall, however, a few topics float to the surface no matter the segment of food & beverage processing. Automation stands tall for its ability to reduce the number of workers needed while increasing production capacity and minimizing waste, and some food segments have traveled quite far along this path.

Still, the food plant of the future will need to be even more flexible to allow for more changeovers, no matter what products it produces, says Jeff Jendryk, senior

director of business development at Kiewit Industrial Group ([www.kiewit.com/markets/industrial](http://www.kiewit.com/markets/industrial)).

“Automation spend will continue to rise to better meet numerous challenges,” he says. “Atop that list are labor shortages, the No. 1 thing keeping plant managers up at night, worrying if they’ll have enough workers to keep the plant running.”

Improvements in robotics, vision systems and sensors linked to refined artificial intelligence (AI) and machine learning algorithms will allow for more complex tasks to be automated, explains Angel



Landeros, capital project manager for Hixson Architecture, Engineering & Process ([www.hixson-inc.com](http://www.hixson-inc.com)).

“Creating highly automated and customizable process and packing systems could create an opportunity for hyperlocal, highly adaptable supply chains that can meet local consumer needs from one day to another,” he adds.

### AI, vision systems help meat catch up

For decades, many segments of the food & beverage industry typically have outrun the meat and poultry processing industry in the race to automate processes, but technology finally has evolved to better handle the variability of the animals harvested.

Casey Gallimore, director of regulatory policy for the North American Meat Institute ([www.meatinstitute.org](http://www.meatinstitute.org)), says the plant of the future in poultry and pork may already be here. Furthermore, she sees machine learning and AI driving automation in beef plants as it has done for poultry and pork over the years. “We haven't seen the same adoption rate in beef plants, but I think that's something we'll see change,” she says.

A similar assessment of what to expect in the beef industry is given by Mark Gwin, product integration manager for Certified Angus Beef ([www.certifiedangusbeef.com](http://www.certifiedangusbeef.com)). “I think we can absolutely expect to see automated harvesting and processing become an industry-wide phenomenon by the year 2030,” he says. “AI on the lines will be able to adapt to different carcasses, and in turn will allow for increased efficiency and consistency.”



As technology improves how it deals with variation, Gallimore expects techniques used in poultry and pork to transfer to beef plants in the next decade. Those same concepts can be applied to other areas in many food processing applications.

“Vision systems have come a long way within the past 10 years,” she adds. “We see vision systems used for foreign material detection and other tasks, including collecting quality information on the process.”

Advanced sensors and data collection devices allow machines to optimize all types of processes, from sorting and grading to cooking and packaging.

“We’re going to see more data-driven, interconnected systems that are intuitive and responding in real-time,” Gallimore adds. “Maybe we see a machine’s cut is drifting off by a quarter of an inch — we can be more responsive to adjust that in real time now rather than waiting until somebody finds out during a quality audit two hours later.”

Even with all this innovation leading to fewer workers on the plant floor, Landeros offers a reminder that food processors cannot just shut the doors and let the machines run without some sort of human intervention.

“There will need to be a skilled and trained workforce to maintain, upgrade and troubleshoot automated systems and their programs,” he says. As a result, those

workers will have safer, better quality jobs. Gallimore believes there will be a wave of skills needed in processing plants unlike any type of skillset needed before.

“The type of workforce we have will need to change, and we’ve already started to see that shift toward more maintenance personnel or more IT personnel to analyze all the data,” she says. “There will be a great opportunity to take our existing workforce, use their talents and help them develop the additional skills needed to fill those future jobs.”

For the meat and poultry plant of the future, however, Gallimore says there won’t be many empty rooms, and worker safety efforts must evolve because of that.

“In chocolate or cereal ingredients, for example, you have people operating the machines processing those products,” she says, “In meat and poultry, you’re dealing with a live animal, so there are so many nuances and differences. I would be shocked if meat and poultry ever reached the level of automation of some other food segments.”

Thus, NAMI’s Protein PACT — a collective vision and set of goals for the future of the meat industry — includes a worker safety goal by which members will reduce workplace injuries by 50% (from the 2019 baseline), building off reductions the industry made the prior 20 years.

### **Supercharging sustainability**

The need for more sustainable operations reaches across all food segments. Sustainability shall be prioritized in the food plant of the future through a variety of initiatives and technological innovations.

Landeros believes energy efficiency and alternate energy sources



Food processors have begun to implement automated guided vehicles to move product around plants and warehouses. Use of similar technologies will help the food plant of the future be safer and more efficient.



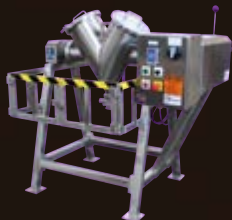
# HISTORY IN THE MAKING

Over 175 years...but who's counting?

Mixing our experience and quality craftsmanship  
to make your process productive and cost-effective.

Learn how ROSS equipment serves in the food industry.

[mixers.com/food](http://mixers.com/food)



**Charles Ross & Son Company**  
Pioneers in mixing and blending since 1842

[mixers.com](http://mixers.com) | 1-800-243-ROSS

will play a bigger role in future plant site design, pushed in that direction by regulations curbing fossil fuel use and the fragility of large power grids. Food & beverage plants that need 24/7 temperature control will feel the pressure if they do not proactively adjust.

“Energy and water scarcity will continue to grow, and the cost and management of both will become a larger factor when assessing the viability of a new site or process,” he explains. “Energy and water resiliency also might limit capital investment, scope and location for food manufacturing facilities.”

Jendryk believes skyrocketing energy costs will drive food plants to consider alternatives for facility power, but also for fleets serving the plant.

“Energy costs are literally going through the roof, and solar panels are being used to create a more sustainable facility,” he says. “If plants have charging stations for electric semi-trucks, where the cab can be charged up for its next route while the trailer

The food plant of the future will live off data collected in a variety of ways and analyzed to the nth degree by a new wave of data technicians picking apart the slightest trends to help operations stay on target.



## EXTRACT WHAT MATTERS.

Creating value in food ingredients through membrane filtration, evaporation, drying, and more.





is being loaded or unloaded, that will require site and facility modifications for the plant of the future.”

Recycling and the evolution of recyclable plastics have been a focus for many processors for years, and several have signed on to various pacts and partnerships to set and achieve specific goals. Landeros believes the pressure will only increase, with single-use plastic bans and global legislation expanding to force manufacturers to find alternatives to plastic packaging. In turn, potential renovations to plants and packaging lines may follow.

“New sustainable packing materials and designs will require retrofitting existing lines or whole new packing lines to meet new regulations,” he says. “However, from disruption can come innovation.”

Such advances might include new packing and process designs, circular supply chains that bring containers back to the site for reuse and/or complete changes in consumer preference and behavior.

“All of these changes would create a growth opportunity for companies agile enough to adapt quickly,” Landeros says.

The challenge with converting to 100% recyclable packaging, Gallimore contends, is that the infrastructure to ensure the material actually gets recycled isn’t foolproof. To that end, the Massachusetts Institute of Technology (MIT) announced in February that it was working with five mega CPG companies to redevelop the recycled material sorting process so the small plastic containers (think, those that hold cosmetics or travel-size personal care items, for example) do not slip through the cracks and end up in the waste stream.

Gallimore explains the approach of the meat industry as trying to do more with less. She believes the meat and poultry industry’s focus on reduction

and reuse of water has been a great focal point that has produced measurable success, and she expects innovation to continue in that arena.



**SOFT ROBOTICS**

**Solving labor challenges — one pick at a time.**

**Fast, reliable and proven food automation solutions.**

[www.softroboticsinc.com](http://www.softroboticsinc.com)



## Food Industry Pneumatic Material Conveying Systems



### Venturi Powered Solutions

Quickdraft food conveying systems are used in a variety of applications for meat, poultry, seafood, and offal processing as well as snack food production. Our designs are focused on food safety with break-apart components for easy inspection and elimination of horizontal surfaces and harborage points.

- No moving components in the conveying duct
- Consistent, dependable conveying performance
- Little or no maintenance
- Ease of cleaning
- Increased food safety
- Designed for 24/7 operation
- Long service life
- Reduce labor required for moving your products
- Sound reduction equipment available



**1-855-VENTURI**  
(Toll Free in U.S. and Canada)  
[sales@quickdraft.com](mailto:sales@quickdraft.com)

Less water use and better wastewater treatment are becoming big issues for all food & beverage categories, of course, and certainly will be concerns of the plant of the future.

“We will try and recapture resources and recycle resources where we can, and I think there will be some really creative adaptations in the next five to 10 years on how to reuse water and make that technology more accessible to individual plants,” she predicts. “I think the industry is working toward plants being self-sufficient, relying less on outside resources.”

With the growing population needing more food, Gallimore says, the industry needs to ensure product is

**In a decade or two, the food plant of the future likely will feature invention, technology and maybe even some surprises that excite even more — and ultimately feeds a bigger world of people.**

available to all consumers at affordable prices — and that it was produced and processed responsibly so that consumers want to purchase and support them.

It’s a statement to which almost any food processor can relate and aspire to provide. How can the food plant of the future produce more food at the same level of quality and safety with fewer resources and a smaller physical and environmental footprint?

Like many in and around the industry, Gwin marvels at how far the beef industry has advanced technologically, but his sentiments really ring true for much of the food & beverage industry.

“If you would have told me about these new technologies when I first started my career, I’m not sure I would have believed you,” he says. “So, it’s really exciting to see how far the industry has come and how we’ve challenged ourselves to be innovative.”

In a decade or two, the food plant of the future likely will feature invention, technology and maybe even some surprises that excite even more — and ultimately feeds a bigger world of people. ■

# OTHER WAYS TO BE SWEET

Stevia, monk fruit and allulose are stellar natural sweeteners, but sugar's functional attributes also must be replaced.

Written by

Anne-marie Ramo and Dave Fusaro

CONTRIBUTING EDITOR, EDITOR IN CHIEF



**T**here is no shortage of sugar substitutes on the market. As consumers increase their demand for low- or no-sugar products, ingredient suppliers are answering with products to assist the product formulator.

Natural sweeteners that look good on the label are the order of the day, as long as they meet or exceed taste expectations. Gone are the days when a consumer will tolerate a bitter aftertaste with their sweet treats just to shave a few calories.

Stevia remains the star among natural and plant-based sweeteners. But emerging ingredients such as allulose and monk fruit also address consumer demands for healthy sugar alternatives.

The clean-label movement is also influencing the reduced-sugar trend. ADM research suggests that sugar reduction was 61% more important to consumers shopping for clean-label. High-intensity plant-based sweeteners, such as stevia and

monk fruit, help meet this need because they are becoming recognizable on a label.

As much as consumers love the concept of sugar substitutes, they don't always love the reality. Complaints about non-nutritive sweeteners include unnatural taste, poor aftertaste and unsuitably high levels of sweetness. Even worse if it's a truly synthetic sweetener with a chemical-sounding name.



A frozen dessert bar prototype at a recent trade show featured Ingredient's Astraea allulose.



“Beverage makers have been utilizing artificial sweeteners such as aspartame and sucralose but are increasingly, at the demand of

consumers, relying on sweeteners with more of a natural halo, such as monk fruit, stevia and erythritol,” says Lucia Stan, business manager

for U.S./Canadian sugar reduction & specialty sweeteners at Ingredion Inc. ([www.ingredion.com](http://www.ingredion.com)).

“In bakery and confectionery, the more common ingredients used to reduce sugar are polyols and allulose,” she continues. “Allulose, one of the newer tools in the sugar reduction space, has been increasingly utilized in dairy, sometimes along with high natural potency sweeteners.”

### Not just sweetening

The taste issue is only the tip of the iceberg for formulators wanting to reduce or eliminate sugar in formulations. The extensive functions of sugars – freezing point depression, crystallization, browning, viscosity/consistency, solubility and starch gelatinization – are but gone with non-nutritive sweeteners.

In more complex food systems, such as ice cream or baked goods, sugar substitutes require multiple ingredients to compensate for the loss of functionality caused by the removal of sucrose. Careful selection of a combination of components, such as allulose and the right amount of soluble corn fiber, for example, can provide a cost-effective solution for extending the shelf life, improving the texture and maintaining optimum flavor.

Sugar also affects shelf life and plays a crucial role in water management and microbial control. So, when formulators of frozen dairy products replace sugar with high-intensity sweeteners, they must add or adjust ingredients like stabilizers and emulsifiers to provide more effective moisture control.

Ice cream can be particularly difficult to make because it has so much

# Automation. Safety. Compliance. Productivity. Guaranteed Solutions.

**Bulk Material Handling • Industrial Vacuum Cleaning**



Feeder Refill Systems

Bulk Bag Load/Unloading

Bag Dump Stations

Direct-Charge Blender Loading

Industrial Vacuum Cleaners

**Let us solve your bulk material handling and industrial vacuum cleaning needs & challenges.**

Visit [vac-u-max.com](http://vac-u-max.com) for RFQ or call (800) VAC-U-MAX.



Activator™ Bulk Bag Unloading System

Maximizing Safety, Compliance, and Production with VAC-U-MAX “Airtight Performance Guarantees”™



CD Series Air-Powered Combustible Dust Vacs

SINGLE SOURCE  
CUSTOM ENGINEERING  
APPLICATION EXPERTISE

**VAC-U-MAX**  
DELIVERING MORE

GLOBAL SERVICE & SUPPORT  
100% GUARANTEED  
SINCE 1954



PNEUMATIC CONVEYING SYSTEMS • FLEXIBLE SCREW & AERO-MECHANICAL BULK BAG LOAD / UNLOAD SYSTEMS • BAG DUMP STATIONS • MULTI-INGREDIENT BATCH WEIGHING & SCALING • UL-CONTROLS • MOBILE VACUUM CONVEYING SYSTEMS PULSONICS BIN ACTIVATORS • BAG COMPACTORS • DIRECT CHARGE BLENDER LOADING VACUUM CONVEYING WITH CHECK SIEVE • FEEDER / FOOD EXTRUDER REFILL SYSTEMS INDUSTRIAL VACUUM CLEANERS: WET/DRY PORTABLE • AIR-OPERATED • HEPA-FILTERED COMBUSTIBLE DUST • CONTINUOUS-DUTY • CENTRAL VACUUM CLEANING SYSTEMS

VAC-U-MAX • 69 WILLIAM STREET • BELLEVILLE, NJ USA  
[www.vac-u-max.com](http://www.vac-u-max.com) • [info@vac-u-max.com](mailto:info@vac-u-max.com) • (800) VAC-U-MAX





## FORMULATION

sugar, which affects the freezing point and many sensory attributes. Erythritol can help replicate some of the functionality of sugar, especially freezing point depression. To replace sugar's sweetness, erythritol is frequently combined with stevia and additional bulking agents such as inulin to improve mouthfeel.

### Plant-based foods problematic

Replacing or reducing sugar in an increasing number of plant-based foods and beverages presents product developers with even more formulation challenges. Bitterness and chalkiness are typical formulation and flavor issues in plant-based products and have traditionally been addressed with sugar.

Natural plant-based sweeteners like stevia and monk fruit provide developers with a choice of sweeteners that fit what consumers are looking for on-label and the functional advantages needed to overcome these formulation challenges. By combining mild sweetness with fiber, natural bulk sweeteners can play to plant-based products' strengths while helping mask imperfections.

Stevia continues to capitalize on its fame as a natural alternative to synthetic sweeteners. Research by Tate & Lyle shows that 42% of consumers are aware of stevia and 29% are likely or very likely to buy products that contain stevia, with intentions to purchase stevia similar to intentions to buy sugar.

The heat-stable and non-caloric steviol glycosides in the stevia plant are 150-300 times sweeter than sugar. The use of stevia continues to grow as the stevia portfolio expands beyond the original glycoside rebaudioside A, which has a bitter

or licorice-like off-flavor. Rare rebaudiosides reb M and reb D taste the most like sugar but are found in much smaller quantities in the stevia plant.

However, fermentation is producing these molecules more cost effectively.

SweeGen (sweegen.com) has an extensive natural sweetener portfolio,

# REFORMULATE NOW

WITH

*Silky Sweet*<sup>™</sup>

- WORLD'S FIRST -  
**FLAVOR ENHANCING SWEETENER**  
ALL NATURAL & SUGAR-FREE

## TASTES BETTER THAN PURE CANE SUGAR!

AVAILABLE IN  
**3 CONCENTRATIONS**

- ✓ SILKYSWEET INTENSE 1:1
- ✓ SILKYSWEET 8X
- ✓ BULK-FREE 125-200X

REQUEST LAB  
**SAMPLES**



[www.silkysweet.com](http://www.silkysweet.com)

including Bestevia Reb I for a variety of applications, including dairy, beverages, bars and other confectionary formulas. The Bestevia line also includes rebaudiosides B, D, E and M.

### Allulose on a roll

Allulose, a monosaccharide isomer of fructose, has been on a meteoric rise the past three years. It's known as a "rare sugar" because it's found in small amounts in maple syrup, brown and caramel sauces, and fruits like raisins and figs. The sweetener got a boost in 2019 when the FDA declared allulose could be excluded from total sugar on nutrition panels because it contains virtually no calories.

Mixing allulose, stevia, erythritol, monk fruit and other natural sweeteners in specific combinations is an effective way to overcome these sweeteners' functional and flavor issues. For example, stevia sweeteners typically impart longer-lasting sweetness to foods than sucrose, and adding allulose can help formulators achieve improved sweetness without off flavors.

SilkySweet is one of those combinations. New on the market, it's based on non-bio-engineered allulose plus monk fruit and a proprietary sweetener "that matches the profile of stevia," says Chuck Nix, founder and CEO of Silky Smooth

New on the market, SilkySweet is based on allulose, monk fruit, a proprietary stevia-like sweetener plus flavor enhancers.

MicroCreamery ([www.silksweet.com](http://www.silksweet.com)). It actually has nine ingredients, including bitterness maskers, flavor modulators, flavor enhancers "and a pinch of sea salt," enabling Nix to call it "the world's first flavor-enhancing sweetener."

To showcase the product, his company created Keto Cola. Nix also is taking aim at the confectionery market. "All sugar-free chocolate is substandard quality, but that problem can be solved with SilkySweet," he says. "We are now in the labs of three of the world's top chocolate manufacturers."

The sweet combination of stevia and monk fruit works a little magic as one sweetener helps mask the other's unpleasant attributes. Monk fruit carries a slightly off note reminiscent of melon rind, and stevia has a slight note of licorice. However, in combination, these off notes cancel each other out, providing pleasant sweetness with no undesirable aftertastes.

### Making sucrose better

Some manufacturers are finding new ways to work with sucrose rather than removing it. Instead of substituting new ingredients for sugar, BlueTree Technologies ([bluetree-tech.com](http://bluetree-tech.com)), an Israeli startup, selectively removes some of the sugar from products, especially high-sugar natural juices. Filtration and absorption techniques remove

disaccharides and leave in monosaccharides, reducing reportable sugars by up to 50% but maintaining the sweetness and mouthfeel.

DouxMatok ([www.douxmatok.com](http://www.douxmatok.com)) makes Incredo Sugar with a patented process that improves the efficiency of sugar's ability to deliver to the sweet taste receptors. This allows for a sugar reduction of 30-50%. It enhances the perception of sweetness, allowing considerable sugar reduction without compromising taste, mouthfeel or texture.

Silica is the product carrier, delivering sugar to the taste buds more efficiently. Sugar molecules form clusters onto this large-surface mineral that release next to the receptors, resulting in a more pronounced perception of sweetness.

Polyols such as sorbitol, maltitol, mannitol, erythritol, xylitol and isomalt are some of the more popular polyols used in place of sugar. In addition, some can be used as bulking agents, replacing some of the heft and mouthfeel of regular sugar. However, polyols have a lower melting point than sugar, so any recipes that involve heat may require some adjustments.

Sadly, none of these fantastic sugar substitutes comes without a cost. Most are more expensive than sugar. However, with sweetness levels 100+ times that of sugar, less product can be used, therefore offsetting at least some of the additional expense.

When formulating and processing products with sugar alternatives, it is essential to consider how the sweeteners will interact with other ingredients and the impact on the product's taste, texture and stability. ■



# TRENDS IN THE SNACK FOOD AISLE

Written by  
Mark Singleton

RUDOLPH FOODS



Families are reframing how America snacks; here's what brands can do to help.

**C**onsumer snacking. It seems as if there's a new trend identified every day. And there is.

Consumers are changing faster than we, as food manufacturers, have ever seen before. Their families are changing, their buying habits are changing, how they digest media is changing. And when you think about it, Millennials, who are now parents of children with very strong opinions, are changing too, as a result of the influence children have on the family's snacks and the associated snacking occasions.

Nielsen consumer research supports this premise. In fact, smaller meals and snacks today account for 73% of all eating occasions. "Recharging" is the most common reason consumers chose to eat a snack outside of mealtimes. This offers opportunities to snack food brands to bring more intentional snacks to the market.

But, manufacturers also need to think harder about innovation as line expansions and

extensions are conceived. Today's families also are innovators, looking for opportunities to change up their lives with food.

Another impact on snacking is evolving as drastic increases in household income have grown over the past two decades. In fact, at Rudolph Foods, we've never seen consumers' incomes so high. Today, one-third of our consumers have an average income of \$100,000 plus. This fuels their knowledge of food, the brands they select and their opinions regarding what they put in their family's pantry and on the dinner table.

Consumers tell us they love our pork rinds for many reasons. In general, pork rinds help you feel fuller faster – helping to satiate hunger, thanks to the amount of protein per serving. Also, we hear all the time from consumers in the South as well as the Southwest that they prefer to eat our rinds simply because they taste great.

But when Southern Recipe Small Batch brand of pork rinds launched five years ago, consumers were introduced to a new way to enjoy pork rinds, with more innovative and robust flavors, lower sodium and more.

This snack innovation is an example of how developing products that better meet consumer needs can open doors for a whole new set of younger, diverse consumers. And with education, these consumers will learn to become brand loyal to those products in the near future – as they have with our



Pork rinds are enjoying a renaissance as low-fat, low-carbohydrate but high-collagen snacks.

pork rinds today. In short, this case study is an example of how giving consumers what they want and need will pay dividends in brand love.

The snack food category has the most educated consumer it's ever had. Because of this, education around food, snacking and what consumers are consuming has allowed the pork rind category to hit its prime as we check a lot of the boxes for consumers. We know this to be true by following the data.

When we do follow the data, we see that multipacks continue to grow, and family nights have returned. This should prompt brands to develop products that serve up opportunities for families to return to the kitchen – and to the family room. It's how America wants to live today.

Further, pork rinds are salty, crunchy snacks that provide reduced carbs alongside the protein families want and need to stay fueled. Throw into the mix a solid serving of collagen and reduced sodium wrapped into a versatile, savory snack and you've hit a home run.

When brands use their market intelligence to serve a family or consumer group with flavor, product innovation, product extensions and even new places where the product can be enjoyed ... that's where manufacturers are finding fuel. As an example, we've brought more consumers into the category by rethinking how we serve up new ways to consume and use pork rinds.

By offering different types of cracklins, new and inventive

seasonings, new places where consumers can eat pork rinds, including restaurants and baseball stadiums, and even by providing new ways to think of pork rinds as an ingredient in recipes, we deliver value while driving awareness.

Innovation in product development and how we think about meeting the needs of consumers is the only fuel that will drive the success of brands and categories in the future. ■



Written by  
**Mark Singleton**

RUDOLPH FOODS

Mark Singleton is vice president of sales & marketing for Rudolph Foods & Southern Recipe Small Batch Pork Rinds ([www.rudolphfoods.com](http://www.rudolphfoods.com)).

# PURITY IS OUR PRIORITY

All of Bunting's HF Series Drawer Magnets are equipped with our most powerful NUHI™ Neo Ultra High Intensity Cartridge Magnets for maximum magnetic metal removal.

## Features:

- Available in utility, food, and sanitary construction grades to suit your safety regulations, with multiple cleaning options and stainless steel housings.
- Customize Sized Drawer and Transitions.
- Come standard with FDA-compliant metal detectable gaskets and grommets.
- Available in Manual, Manual Self-Cleaning, and Pneumatic Self-Cleaning

HFS Manual  
Self-Cleaning



For more information visit [BuntingMagnetics.com](http://BuntingMagnetics.com)



800.835.2526 or 316-264-2020  
[Newton@BuntingMagnetics.com](mailto:Newton@BuntingMagnetics.com)  
[BUNTINGMAGNETICS.COM](http://BUNTINGMAGNETICS.COM)



# READY TO EAT FISH BONES IN THE NAME OF SUSTAINABILITY?



Written by  
**Dave Fusaro**

EDITOR IN CHIEF

Finnish food tech company SuperGround developed a process to get 60% more food from fish.

Anyone who has prepared a meal from the whole fish knows there's a lot of waste: cutting off the head, scraping off the scales, removing the bones and organs. Imagine that on an industrial scale. A Finnish food tech company believes it has a way to get up to 60% more food out of a fish by using the hard tissues in a sustainable and presumably tasty way.

SuperGround ([www.superground.com](http://www.superground.com)) in February revealed its food production solution that uses significantly more of the whole fish while also reducing raw material



Heads, scales and bones will not go to waste in SuperGround's process.

waste and possibly making the whole fishing industry more efficient and sustainable. "For the first time ever, everything except the guts can be used in producing tasty consumer-familiar fish foods," a company statement said.

Actually, SuperGround piloted the technique last year on chicken, using the bones and their nutritional benefits in an unnoticeable way when producing poultry-based foods.

Traditionally, after the fillets have been separated, the rest of the hard tissues either become waste or are used as animal feed, fertilizer or a biofuel raw material. Depending on the fish species, 20-60% of its net weight might not be used as food, the company claims.

"Humans have a long history of eating fish bones," says Santtu Vekki, founder and chief innovator of SuperGround. "Fish bones have been used as food previously, but now we make using them and other hard tissues as food more efficient, sustainable and versatile. We want to encourage and enable companies to utilize the full potential of fish and all of its precious and nutritious raw materials, which previously could not have been used as food."

With the exception of the guts, the whole fish can be inserted into SuperGround's food production machine. The process softens and grinds the bones and other hard tissues, with no mass lost in the process. There's also a heat treatment process that preserves vitamins and nutrients.

The outcome is fish mass that can be used in various ways. Around 15-30% of the mass can be added, for example, to fish balls without affecting their taste. Up to 15% can be added or needled into products such as fish sticks. The mass can also be used as broth or sauce. The mass enhances the taste and smooth mouthfeel of fish products, SuperGround claims.

Like the skin on fruits and vegetables, these hard tissues have significant nutritional value "since they include a higher volume of different vitamins, calcium and good fats compared to fish fillets," says Vekki.

"In addition to plant-based alternatives, we need ready-to-use solutions that improve the sustainability of existing and popular food choices," he continues. "Not using the full potential of fish in food production is a huge opportunity wasted." ■

# INGREDIENTS

## Cracking high egg prices

The SA series of powdered emulsifiers for industrial baking helps reduce the egg content of cake recipes for significant cost reductions. With wholesale egg prices in the U.S. at their second highest level ever, and with eggs accounting for as much as 30% of cake recipes, industrial bakers have been hit particularly hard. Traditional cake gels or hydrates typically based on monoglycerides can perform poorly on stability, meaning more egg is needed. This series is based on polyglycerol esters (PGEs) of fatty acids, and offers many functional properties, allowing egg content to be cut by an average of 20%. This translates to a typical cost reduction of around 5%.

**Palsgaard USA; Parsippany-Troy Hills, N.J.**  
973-998-7951; [www.palsgaard.com](http://www.palsgaard.com)



## Consider cassava for gluten-free

Cassava is a root vegetable that is naturally gluten-free. Milled by a sophisticated, proprietary process, it delivers a bakery-quality flour applicable to a full range of gluten-free baked goods. It is a drop-in substitute for wheat-based flours that eliminates the need for complex formulations. A new line of alternative cassava flours offers a number of different baking performance and

at a range of price points and produces exceptional results in products ranging from tortillas, pizza crusts, crackers, and breadsticks to cakes, cookies, and brownies.

**American Key Foods Products; Closter, N.J.**  
877-263-7539; [www.akfponline.com](http://www.akfponline.com)



## Stabilizer, fortifier for baking

A new line of baking solutions features two cutting-edge ingredient solutions to help address some of the most urgent baking challenges manufacturers face. Levair Stabilize is a stabilizer to help bakers reduce waste by improving batter stability. Levair Fortify helps improve volume and texture in high-protein baking applications.

**Innophos; Cranberry, N.J.**  
609-495-2495; [www.innophos.com](http://www.innophos.com)

## Soy line is now Non-GMO

The Ultra-Soy line, an unflavored textured protein made from soy flour, is now available in Non-GMO Project Verified product options. This high-quality plant-based protein is a cost-effective, sustainable textured soy protein made from U.S. soybeans. Product line includes textured soy flour and flavored textured vegetable protein produced in a variety of sizes, textures, and flavors.

**Kansas Protein Foods; Hutchinson, Kan.**  
800-835-5006; [www.kansasproteinfoods.com](http://www.kansasproteinfoods.com)

## Complete whey protein isolate

Hilmar 9020 is a 90% whey protein isolate, making it a complete protein that provides all nine essential amino acids the human body needs. Plus, it offers exceptional clarity and clean taste so that it won't detract from the appearance or flavor of waters, gels, shots, desserts or confections. It delivers exceptional heat stability and acid solubility that make it ideal for low pH applications.

**Hilmar Ingredients; Hilmar, Calif.**  
209-667-6076; [www.hilmaringredients.com](http://www.hilmaringredients.com)



## Plug and play protein solution

New protein bar concept allows brands to raise the protein content of every segment of the bars – including the mass, filling and coating – without increasing size or compromising on taste or texture. The new recipe is based on whey and milk protein ingredients from the company's Lacprodan range. They help ensure that bar parts such as rich chocolate mass retain flavor and softness throughout shelf life. It offers 30% protein per bar, allowing for high-protein claims.

**Arla Foods Ingredients; Basking Ridge, N.J.**  
908-604 8551; [www.arlafoodsingredients.com](http://www.arlafoodsingredients.com)



# MEAT & POULTRY PLANTS POST-PANDEMIC

With the Covid ‘emergency’ designation removed, will the meat & poultry industry remain vigilant or pull back the preventive measures instituted during the pandemic?

Written by  
**Andy Hanacek**

SENIOR EDITOR

**C**ovid-19 will no longer be classified as a national emergency as of May 11, says President Joe Biden and the administration, just more than three years since the beginning of the virus’ all-out assault on food processing plants.

In March 2020, the virus caught food processors — and meat and poultry plants especially — completely off-guard and unprepared. As the virus spread rapidly, then-President Donald Trump declared the pandemic a national emergency in mid-March, a status that has been extended several times since.

By March 31, 2021, according to data collected by the Food & Environment Reporting Network,

Protective barriers were installed between employees at many plants during the pandemic; pictured are Tyson Foods team members at the company’s Berry Street plant in Springdale, Ark., April 24, 2020.

PHOTO: TYSON FOODS

nearly 58,000 meat and poultry processing workers had contracted Covid-19, compared to approximately 20,000 at other food processing plants and on farms. During that same period, 285 meat and poultry employees died from the virus, compared to 92 workers in other food processing facilities and on farms.

Nothing compares to the human death toll the virus took on the plants, but it also forced significant



Empty supermarket meat shelves and supply chain issues during the Covid-19 pandemic pushed some consumers to smaller meat markets, and they've generally continued to shop there even after the pandemic eased.



physical and strategic changes to the way plants operated. Many of the challenges were pre-existing, says Nelson Gaydos, outreach specialist for the American Assn. of Meat Processors (AAMP).

“Other than the worker health concerns, I don’t believe the pandemic brought many new problems to the industry,” he says. “It simply strained the industry to the point that those problems were exacerbated.”

Faced with few options, meat plants had to answer the call, and Mark Gwin, product integration manager for Certified Angus Beef,

believes a sea change occurred. “Covid absolutely accelerated the push for plant automation and innovation,” he says. “I think that’s something that will become the new normal.”

By the winter of 2020, the industry had installed enough preventive measures that a much-feared “second wave” never truly materialized. However, that doesn’t mean every modification will stand the test of time as Covid-19 becomes manageable enough for the government to remove its emergency status.

### A matter of trust

The differences in size of the companies will impact which strategies remain in place and which ones are peeled back to bring operations back to pre-pandemic practices. For example, when it comes to checking the temperatures of employees at the entrance, Gaydos expects variance.

“I expect the bigger plants won’t leave it to trust or chance, and will make it more of a routine GMP, like changing boots and hand-washing practices,” he says. “But the smaller

**ULINE**  
SHIPPING SUPPLY SPECIALISTS

**KEEP YOUR BUSINESS ROLLING**

CONVEYORS, BOXES AND MORE

**ORDER BY 6 PM FOR SAME DAY SHIPPING**

COMPLETE CATALOG **1-800-295-5510** [uline.com](http://uline.com)



## PLANT OPERATIONS

plants will likely trust their employees a bit more that they won't need a temperature check to verify that they don't feel well and should stay home."

The concept of improved trust between plant employee and their employer will vary based on the size of the company, Gaydos affirms. Certainly, those relationships differ greatly at a small-town meat locker versus a large meatpacking plant with thousands of workers. But the concept of staying home when you're not feeling healthy seems to have rooted itself in many facilities, at least in the messaging.

"There's a much stronger emphasis on employees staying home when they feel sick, and I think there's more trust between them and the owners — especially in the smaller companies — knowing that they're not going to be penalized," he says. "Obviously, it gets more complicated the more employees you have, but I still think that sense of knowing that you can take sick time and not put your job in jeopardy is a positive."

With regard to vaccinations, change has already come and gone. Tyson Foods mandated vaccinations for its employees in August 2021 and rescinded the mandate Oct. 31, 2022, after reportedly having approximately 96% of employees meet the requirement.

Other meat companies worked to convince their employees to get the shots through everything from simple internal messaging to financial incentives and even raffle-style competitions giving away prize money. JBS USA offered employees "Your Shot at Free Meat for a Year" across its network of facilities.

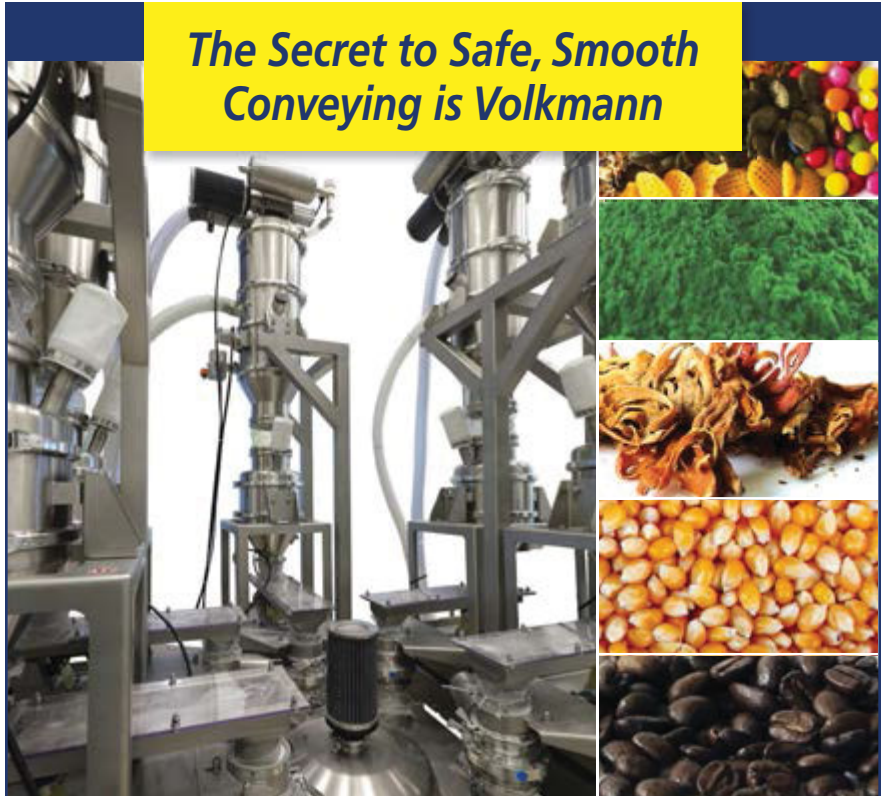
Many of those incentives have disappeared, and with the removal

of the national emergency, it remains to be seen how that will impact vaccinations for the public, let alone meat industry workers.

### Automatic for the people

Speaking of the general public, one marketplace trend Gaydos believes will stick around is the shift

## The Secret to Safe, Smooth Conveying is Volkmann



A lot of our customers can't talk about their secret to safe, smooth, gentle conveying **but everyone knows the secret is Volkmann**. Our patented pneumatic vacuum conveyors automatically transfer powders and other bulk materials from one point to another in fully enclosed, dust-tight, explosion-proof systems.

- Automated, hygienic and quiet
- Easy to use, easy to clean
- No tools disassembly
- Stainless steel as standard
- Fast lead times, easy to install



See action videos, get free test at [Volkmannusa.com](https://www.volkmannusa.com)



Automation in meat and poultry processing had been on the fast track prior to the pandemic, but when Covid-19 hit, the speed of innovation increased to cover for the extreme labor shortage.

in customers toward the mid-sized to small processors. They were able to stay open and fill orders when some larger plants had shut down and supermarkets struggled with keeping meat stocked on the shelves.

“For the most part, the mid-sized companies I’ve talked to have maintained the customers who came around in mid-2020,” he explains. “They like the products better, prefer the shopping environment and feel like they’re helping small business, so they’re willing to make the extra trip to get something special at their local meat shop.”

Labor shortages will continue to hamper most processors’ abilities to respond to consumer demand, however. Sourcing quality, reliable labor for meat and poultry plants was difficult before the pandemic, but that has become even more difficult. Plants already incorporating

more automation pre-pandemic to phase out unfilled or heavy-turnover positions got a head start, but the pandemic stomped on the gas pedal for more automation.

“The area that will continue to grow is packaging, which has historically been a pretty big bottleneck,” Gaydos says. “If you can automate, where you can have four positions cut down to one, you can use those workers in other areas of the plant.”

Beyond automating packoff, Gaydos says eliminating obvious bottlenecks for product through

upgrades to equipment or facilities (such as a freezer, for example) became crucial and will continue to drive investment forward.

“Automation is a viable solution to processors who have the space and funds to bump up their capabilities,” he says. Investing in facility improvements can help protect against any labor-related challenges, whether availability or safety.

As meat processors renovate, expand and incorporate more innovative technology, they should keep the harsh lessons they learned through the pandemic top of mind. There almost surely will be another crisis at some point in the future; whether the meat industry can withstand whatever onslaught it brings will be determined by the next steps it takes as the country emerges from the national emergency that was Covid-19. ■

Shortly after the pandemic began, employee breakrooms gained barriers at each table to attempt to keep employees healthy, as pictured here at the Tyson Foods’ Chick-N-Quick plant in Rogers, Ark., April 24, 2020.

PHOTO: TYSON FOODS





# CONVEYING EFFICIENCY

Written by  
**Andy Hanacek**

SENIOR EDITOR

The safe, expeditious movement of products through plants continues to advance.

**S**peed and efficiency: two things nearly every food or beverage processing plant strives to achieve through innovation and in production capability.

Conveyor and product handling systems are the backbone of every food processing operation and, as such, can support frontline growth in a plant's production capacity. Although the need to move product has never changed, the ways by which it has been done, the safety measures taken for both the workers and the product, and the durability of the systems have improved over time.

## The state of hygienic design

To many processors and equipment manufacturers, it may go without saying how critical it is today to design conveyor and product handling systems with hygiene top of mind. Brian Jenny, director of production engineering for Sargento Foods ([www.sargentofoods.com](http://www.sargentofoods.com)), explains that the road to success now has fewer hurdles than it may have had the past, especially when processors are proactive and work with suppliers with a good grasp of proper sanitary design.

"At Sargento, we strive to lead in this space because of our commitment to food safety," he says. "In addition to industry-wide sanitary design standards and guidelines — such as published USDA and 3-A standards — we have captured internal best practices in hygienic design in our equipment design standards, [which] we share with suppliers during project requests for proposal (RFPs), specification development and factory acceptance test (FAT) activities."

The North American Meat Institute (NAMI) Guidelines for Sanitary Design are a great starting point to address equipment and conveyor design, believes John Johnson, a Liberty University adjunct professor with more than 30 years working for global food processors and equipment manufacturers.

"[However,] there will always be opportunities for improvement, as there are limitations on conveyor designs based on mechanical and engineering principles," he says. "Challenges will always exist on how to incorporate cleanability into design."

Hygienic design has evolved over the years to feature open, easy-to-clean designs with sloping surfaces and few crevices or hidden pinch points where bacteria might hide and thrive. Conveyors

have been engineered to be easier for sanitation workers to disassemble, deep-clean and reassemble in a shorter amount of time than their predecessor designs.

### The influence of automation

As automation has taken hold of food & beverage plants, conveying systems have had to adjust. Automated systems can work 24 hours, seven days a week — and at higher speeds than a manual line — which increases production volumes and reduces downtime, but can also shorten the lifespan of the equipment handling the product.

“Conveyor parts wear out; this is an undisputed fact,” says Johnson. “The problem I have seen is attempting to extend parts beyond their physical life.”

Squeezing every last minute of operation out of a clearly worn part



Some hopper-feeder systems can meter products accurately into a process, doubling as in-process storage in case downstream machinery backs up.

PHOTO: TRITON INNOVATION

accelerates the wear of other parts, leading to further problems and additional costs, Johnson explains. Second, it creates a safety issue for food and personnel, as excessive wear can lead to product contamination and potential mechanical issues.

“A well-managed preventative maintenance program will extend the overall life of equipment and ensure a more accurate budget when calculating the cost to produce,” he adds. Part of that program might include innovative technology that incorporates real-time monitoring of conveyor and product handling systems, which allows plant operators to detect potential problems early and make adjustments as needed.

Sargento has benefitted from innovative changes to products, processes and robust hygienic design of bearing assemblies, leading to fewer failures and increased time before replacements are needed — invaluable contributions that Jenny says were made by the company’s experts on the engineering team.

“Their knowledge, as well as the innovative designs that facilitate the displacement and removal of conveying components, has really helped the efficiency of sanitation and maintenance at Sargento,” he says.

### Robots, cobots and AGVs

Once product is packaged and needs to move off the line and into cartons, onto pallets and into storage, it historically would rely upon people to physically make those moves. However, robotic technology has become quite prevalent across all segments of the food industry, with robotic arms, pick-and-place equipment and cobots now able to handle an enormous variety of



Cable-and-disc conveyors move product gently through a plant.

PHOTO: CABLEVEY CONVEYORS

shapes and sizes of product and boxes — and to do so with a gentle touch when needed.

Sargento recently invested in cobots that perform material handling tasks around conveying equipment to minimize exposure to moving equipment, Jenny relays.

Combined with highly improved vision systems, robotic equipment can sort and stack product in predetermined ways and can take repetitious or hazardous work out of the hands of the human beings in the facilities.

From a workforce efficiency standpoint, robots do break down, requiring maintenance and repair, but they typically can run continuously and improve a facility’s productivity.

Automated guided vehicles (AGVs) have caught on as a solution



Vibratory conveyors move dry, granular, free-flowing and even some non-free flowing products.

PHOTO: KEY TECHNOLOGY

in food & beverage plants as more companies see the safety benefits of removing manually driven forklifts, pallet jacks and the like. AGVs also can be used when a processor desires to reduce the chance of product contamination, such as transporting slice logs to and from smokehouses and drying rooms, for example. Less human contact minimizes the food safety risk.

With floorspace at a premium in many older plants and processors looking for more ways to squeeze production into those facilities, plant engineers seek ways to capitalize on flexibility and versatility. The modularity of some conveyor systems help in that arena.

Conveyors that can be moved to feed different machinery make a tremendous difference in the plant's operational efficiency, as it reduces downtime required for product changeovers. In addition, technology has advanced to allow for conveying systems that can redirect product automatically using sensors and varying the speed or direction of the belts. Products in different shapes or sizes can be sent to different levels or on different paths depending on the equipment needed to further process or package them.

## Worker safety is paramount

Although automation and robotics have taken numerous workers away from hazardous situations, not every product handling task can be automated. Therefore, worker



safety is not something food & beverage processors can sleep on.

“Two areas of concern should be the operation and cleaning/maintenance of conveyors; energy isolation (i.e., lockout/tagout) must be incorporated into any design,” Johnson says. Training on the operation, repair and cleaning of the equipment must be ongoing for all employees.

“It only takes a split second for an accident to occur, and it is the responsibility for all personnel to take safety seriously,” he adds. Jenny explains that Sargento holds all employees to a high standard when it comes to worker safety.

“We capture our requirements in our machine design standards that are used for vendor and equipment selection, [and] we are continuously updating those standards with knowledge management business processes to capture lessons

learned for human safety design requirements,” he says.

“We also provide classroom and on-the-job training delivered by expert manufacturing peers. Additionally, we use a software package to facilitate safety risk assessments and mitigation action plans, collaboratively, among our safety professionals, manufacturing and engineering teams.”

Even though moving product around a processing plant might appear elementary at first glance, advances in automation, hygienic design, versatility and durability have led to increased efficiency, improved product quality and enhanced food and worker safety.

As food processors look for more ways to improve the profitability of their plants, expect them to start with product handling and conveying systems as the backbone of any innovation. ■

# EQUIPMENT



## Cleaner vacuum conveying

New NFPA compliant, 1.8 ft cu. ft. (50L) capacity low-rate vacuum conveying system offers a cleaner operating environment for handling both raw materials and finished products. Easily integrated into a wide range of production processes, it has available feeders, bulk bag unloaders, bag dump stations and drum dumpers. It also can be integrated into extruder lines, small injection, blow molding and film producing processes, as well as handling minor additives for mixing and PVC blending towers.

**Schenck Process; Kansas City, Mo.**

816-891-9300; [www.schenckprocess.com](http://www.schenckprocess.com)

## Optical sorter for potatoes

Suitable for whole potatoes prior to processing, the Herbert Oculus optical sorter improves performance to find and remove potatoes with defects, ensuring product quality



while reducing labor requirements. The enhanced sorter features cameras that offer 2X the resolution of the previous generation cameras to identify smaller, harder-to-detect defects; an advanced 64-bit operating system to achieve a better analysis of each tuber; longer-lasting air cylinders with better seals to minimize energy usage; and lighter reject fingers that move faster to improve rejects.

**Key Technology; Walla Walla, Wash.**

866-889-1487; [www.key.net](http://www.key.net)



## Quick-adjust vacuum conveyor

The VS pneumatic vacuum conveying system allows for quick adjustments to air velocity, in seconds and without tools, to accommodate a range of bulk materials. Pressure can be changed at the vacuum pump or pickup point, based on properties such as particle size and shape, bulk density, stickiness and desired throughput rate. Suitable for food,

chemical, pharmaceutical and nutritional products at contract packaging and processing companies that change products frequently, the automated instrumentation ensures required operating parameters are adjusted to the correct settings every time.

**Volkman USA; Bristol, Pa.**

609-265-0101; [volkmanusa.com](http://volkmanusa.com)

## Throwing a curve

The Rexnord Curve System with 1540 Series MatTop Chain is for conveyor lines requiring a zero tangent 180- and/or 90-degree curve. The system offers the tightest inner radius (420mm) and smallest transfer (15mm) for greatly improved space utilization and package handling. It enables head-to-tail transfer of even small and light cases without the need for micro pitch conveyors, transfer modules or plates. A consistent small nose radius across the width of the conveyor and smallest transfer available in the industry result in a safe small gap between the Curve System and the adjacent conveyor. This eliminates the need for roller transfer bars while providing more flexibility in container types when changing lines.

**Regal Rexnord Corp.; Beloit, Wis.**

[regalrexnord.com](http://regalrexnord.com)

## Three roll mills

Three Roll Mills, used for high viscosity dispersions in many industries, feature true heavy-duty construction, precision workmanship and ANSI 2017-compliant controls package. The Model 52M 2.5 x 5 in. is a bench-top laboratory mill equipped for a wide range of applications. It includes hardened stainless steel type 440C precision ground rolls that

# EQUIPMENT



are cored for water cooling and heating, ½hp TEFC inverter-duty motor and a NEMA 12 control panel wired to a safety trip switch that will stop the rolls in less than one revolution.

**Ross Mixers; Hauppauge, N.Y.**  
800-243-7677; [www.mixers.com](http://www.mixers.com)

## Soft-belt food separator

Introducing a new in-line batch-volume soft-belt food separation processor in a production version that has been expanded to serve more applications. The Model 100S features a wide infeed tray at the top and a discharge chute that allow it to easily orient to, and integrate with, nearly any existing production line. The system can instantly bring high-quality food separation capabilities online for processing capacities of 1,100lb/hour, depending on product and filter size. Its compact design with a footprint under 780 square inches, and casters at the base for easy mobility, make it a true utility machine that can roll into action for such applications as sausage rework because its soft-belt

process maximizes extraction purity and meat integrity. With its added features, it's also suitable for fish, poultry and other smaller-bone proteins, as well as other softer product applications.

**B&D Resources; Castlerock, Colo.**  
303-218-3707; [www.bdrsitem.com](http://www.bdrsitem.com)



## Centrifugal sifter for dry material

The GS Centrifugal Sifter is a next-gen centrifugal sifter that ensures consistent particle size and bulk density. It automatically separates and conditions agglomerated powders, granules and other dry materials into fine powders ready for transfer to the filling and packaging lines. Installed upstream of weigh filling, stick packaging, form-fill-seal, pouch packaging,

bagging and other machinery, the sifter ensures the product stream meets the required specifications with a constant bulk density and a consistent, narrow particle size distribution. Any oversized particles are automatically separated and returned upstream for further reprocessing or collected at discharge.

**Gericke USA; Somerset, N.J.**  
855-888-0088; [www.gerickegroup.com](http://www.gerickegroup.com)

**GLEESON** constructors & engineers LLC  
Designers of Value - Builders of Trust



**CONTACT GLEESON FOR ALL  
YOUR FOOD PROCESSING  
DESIGN-BUILD NEEDS!**

(712) 258-9300 | [WWW.GLEESONLLC.COM](http://WWW.GLEESONLLC.COM)



**FOOD PROCESSING- READY-TO-EAT FACILITIES- COLD STORAGE-  
DISTRIBUTION CENTERS- ASRS FACILITIES**





# CLASSIFIEDS

Contact: Peggy Harrington-Marz at [pharringtonmarz@putman.net](mailto:pharringtonmarz@putman.net) to advertise.



**STAINLESS STEEL MIST ELIMINATORS**  
For Food Processing Lines  
[www.mistcollectors.com](http://www.mistcollectors.com)  
Tel: 1-800-645-4174

**IKA® MIXING SOLUTIONS**  
*Dispersing, homogenizing, emulsifying, wet milling, powder/liquid blending. Engineered turnkey system realization. After sales support.*



Scan  [www.ikaprocess.com](http://www.ikaprocess.com)



**3RD GENERATION WISCONSIN CHEESEMAKERS**

**SAY CHEESE**



**YOUR SOURCING PARTNER**

**FOR ALL THINGS CHEESE**

(920)-921-0005  
[www.allstarcheese.com](http://www.allstarcheese.com)



**FEAST ON THE FOOD FOR THOUGHT PODCAST**

Get the stories behind the headlines. Tune in to *Food Processing's Food For Thought* podcast



## Advertiser Index

COMPANY	PAGE
BUNTING MAGNETICS	30
CINTAS CORPORATION	3
ERIEZ MAGNETICS	10
GLEESON CONSTRUCTORS	41
HAPMAN	15
HORMANN HIGH PERFORMANCE DOORS	13
ITW PRO BRANDS	15
KOCH SEPARATION SOLUTIONS	22
LUBRIPLATE LUBRICANTS	2
MOTION	6
QUICKDRAFT	24
ROSS CONTROLS	21
SILKY SMOOTH MICROCREAMERY	27
SOFT ROBOTICS	23
ULINE	34
URSCHEL LABS	4
VAC-U-MAX	26
VAN DER GRAAF	44
VOLKMAN	35

**Moisture Degrading Your Conveyed Materials?**

**We Have The Solution!**

*Talk Directly with Design Engineers!*

**Blower Aftercoolers Dehumidifiers**

**XCHANGER** INDUSTRIAL HEAT EXCHANGERS

**(952) 933-2559 info@xchanger.com**

## U.S. SALES TEAM

GROUP PUBLISHER

**Michael Brenner**

(630) 467-1301 x487,

[mbrenner@endeavorb2b.com](mailto:mbrenner@endeavorb2b.com)

REGIONAL MANAGER

**Rich Zelvin**

(630) 467-1300 x120,

[rzelvin@endeavorb2b.com](mailto:rzelvin@endeavorb2b.com)

Northeast U.S., Southeast U.S., Eastern Canada  
AL, AR, CA, CT, DC, DE, FL, GA, IL, IN, KY, LA, MA, MD, ME, MS, NC, NH, NJ, NY, OH, PA, RI, SC, TN, VA, VT, WV

REGIONAL SALES MANAGER

**Faith Zucker**

(216) 316-8203,

[fzucker@endeavorb2b.com](mailto:fzucker@endeavorb2b.com)

Upper Midwest, Central U.S.,

Western U.S.,

Western Canada and International

AZ, CO, IA, ID, KS, MI, MN, MO, MT,

ND, NE, NM, NV, OK, OR, SD, TX, UT,

WI, WY, Print/Digital

U.S. ADDRESS

1501 E. Woodfield Rd, Suite 400-N,

Schaumburg, IL 60173

Fax: (630) 467-1179

## OVERSEAS SALES TEAM

TAIWAN

**Sydney Lai**

886-4-2329-7318,

Fax: 886-4-2310-7167,

[sydneylai@ringier.com.hk](mailto:sydneylai@ringier.com.hk)

Ringier Trade Publishing Ltd.

9F-2, No.200

Zhongming Rd., North District,

Taichung

City 404, Taiwan

CHINA

**Craig Shibinsky**

86-21-6289-5533 x368,

Fax: 86-21-6247-4855,

[craig@ringier.com.hk](mailto:craig@ringier.com.hk)

Ringier Trade Publishing Ltd.

1001 Tower 3, Donghai Plaza

1486 Nanjing Rd. West, Shanghai

200040 China

Food Processing® (USPS 203-820, ISSN 1092-0978), is a registered trademark. Food Processing is published monthly, except a combined Jun/Jul and Nov/Dec, by Endeavor Business Media, LLC 2022, PO Box 3257, Northbrook, IL 60065-3257. Periodical postage paid at Fort Atkinson, WI and additional mailing offices. Subscription rates per year: U.S. \$100.00; Canada and other international: \$290.00 (payable in USA funds). Single copies are \$15.00. All rights reserved. Reproduction in whole or in part without permission is prohibited. We make portions of our subscriber list available to carefully screened companies that offer products and services that may be important to your work. If you do not want to receive those offers and/or information via direct mail, please let us know by contacting us at List Services Food Processing PO Box 3257, Northbrook, IL 60065-3257. Printed in the USA.

POSTMASTER: send address changes to Food Processing, PO Box 3257, Northbrook, IL 60065-3257.

**SUBSCRIPTIONS:** Qualified reader subscriptions are accepted from key people with managerial responsibilities for processing activities in the food industries at no charge. To change or cancel a subscription, email [foodprocessing@omeda.com](mailto:foodprocessing@omeda.com). Subscription rate for non-qualified U.S. subscribers is \$100/yr. Single copy rate is \$15.00. International rate is \$290/year. Air mail only. Copyright ©2014 by Endeavor Business Media. All rights reserved. The contents of this publication not be reproduced in whole or in part without consent of the copyright owner.

Reprints are available on a custom basis from Mossberg & Co. Reprints: 800-428-3340; [reprints@mossbergco.com](mailto:reprints@mossbergco.com).



# Stay on Top with Educational Webinars

What are the trends going into the new year? How has the pandemic affected consumer behavior? What regulatory deadlines do I need to be aware of?

Food Processing webinars offer you an interactive experience to learn about many facets of the food & beverage industry from experts. Join Food Processing editors and industry experts as they dive into topics that hit home for food & beverage manufacturers.

Here are our upcoming webinars:

**April 4:** Cybersecurity

**April 6:** Pest control

**May 3:** Pneumatic conveying roundtable

... and many more

Read more about them and register for any or all at: [www.foodprocessing.com/webinars](http://www.foodprocessing.com/webinars)

## Help us with two upcoming Product Development projects

Our 51st annual R&D Survey is underway. Help us identify the product development priorities for this year by completing that survey.

If you didn't get an email invitation, click on this QR code to take it. The results will be in our June/July issue.



Are you proud of your Product Development team? Enter them in our annual R&D Teams of the Year poll. We're looking for nominees in three size categories: small (less than \$100 million in sales), medium (\$100-750 million) and large (more than \$750 million in sales). Winners will be profiled starting in our June/July issue. Nominate your team by dropping a note to [dfusaro@endeavorb2b.com](mailto:dfusaro@endeavorb2b.com).

FOOD PROCESSING



# SSV Series Drum Motor

## The Most Hygienic Conveyor Belt Drive



SSV Drum Motors drive modular conveyor belts without using sprockets, eliminate gaps and crevices, and reduce washdown time and water usage by 50%.

Designed for 80,000 hours of continuous operation before maintenance, SSV Drum Motors increase throughput and reduce operational costs.

- ▶ IP69K Sealing System
- ▶ Washdown Up to 3,000 psi



Scan to watch video



- ELIMINATE** Drive Sprockets
- ELIMINATE** Product Build-Up
- ELIMINATE** Bacterial Harborage

**New** patented SSV-XP Drum Motor features an exchangeable profiled sleeve on the drum to drive various modular conveyor belts using the same drum motor.



[www.vandergraaf.com/FP](http://www.vandergraaf.com/FP) • (888) 326-1476