

food-Drink & innovations

ingredients - processing - packaging - supply chain - dairy - bakery - confectionery - ice creams - sweets - snacks

Volume - 7 / Issue - 3



**Rethinking
Electrical Reliability
in Food & Beverage
Manufacturing**

Savory Snack Products Market

Size Worth USD 403.52 Billion
By 2034 | CAGR: 5.7%



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From the Editor's Desk

Dear Readers,

We are delighted to present to you the March 2026 edition of our webzine.

Innovation across the food and beverage sector today extends far beyond product development, it touches every layer of the industry, from ingredient science and infrastructure to equipment, supply chains, and market strategy. In the March 2026 edition of Food Drink & Innovations, we bring together a curated set of articles that examine the forces influencing modern food businesses and the technologies enabling them to adapt, scale, and remain competitive in a rapidly transforming marketplace.

This edition explores key market developments, including the remarkable growth of the Savory Snack Products Market, projected to reach USD 403.52 billion by 2034, reflecting the increasing demand for convenient and flavourful snack options worldwide. We also examine the rising momentum of the Gluten-Free Bakery Market, which continues to expand as consumers increasingly seek healthier, allergen-free alternatives. Complementing these trends is our feature on the expanding role of dairy ingredients in modern food innovation, showcasing how dairy-based components are driving functionality, nutrition, and product development across global markets.

Operational efficiency and infrastructure also take centre stage in this edition. Articles such as Rethinking Electrical Reliability in Food & Beverage Manufacturing and Solving the Cracked Floor Dilemma: Advanced Drainage Solutions for Food Plants address critical aspects of plant operations that directly influence safety, productivity, and compliance. Additionally, Future-Ready Equipment for Scalable Food Service Models highlights how modern equipment solutions are helping businesses adapt to evolving food service demands.

Beyond processing and equipment, this edition also focuses on broader industry strategies, including Supply Chain Management and Greening the Supply Chain: Transforming Operations for a Sustainable Industrial Future, which explore how companies are reimagining logistics and operations to improve efficiency while reducing environmental impact.

Alongside these features, readers will also find the latest industry news, market updates, sustainability initiatives, and food safety developments, offering a comprehensive overview of the trends and innovations shaping today's food and beverage sector. Through this edition, we aim to keep our readers informed, inspired, and equipped with the knowledge needed to navigate the dynamic and ever-evolving world of food and drink innovation.

Your valuable feedbacks on this edition of webzine is requested.

Prakash Mishra

Thanks you
Prakash Mishra
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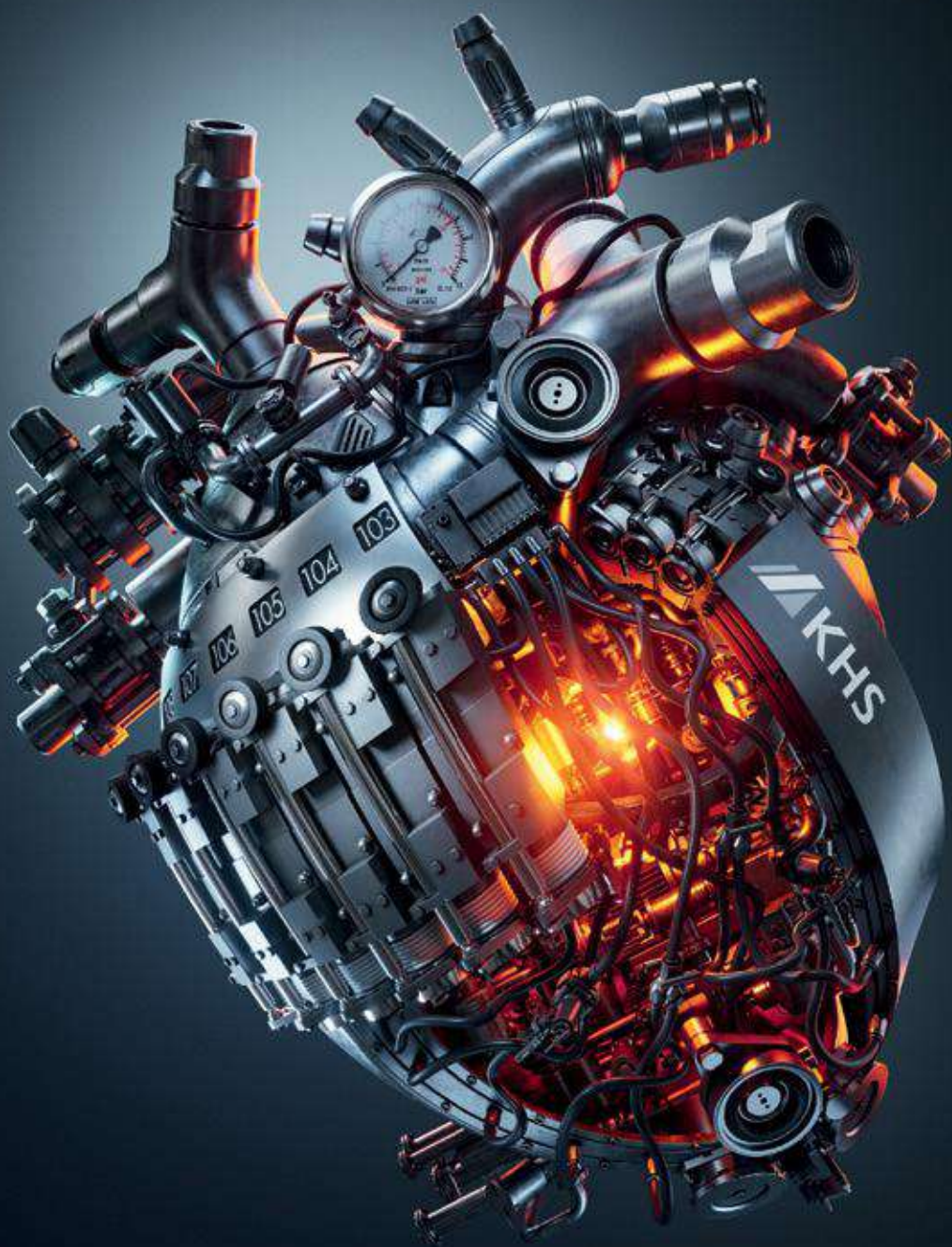
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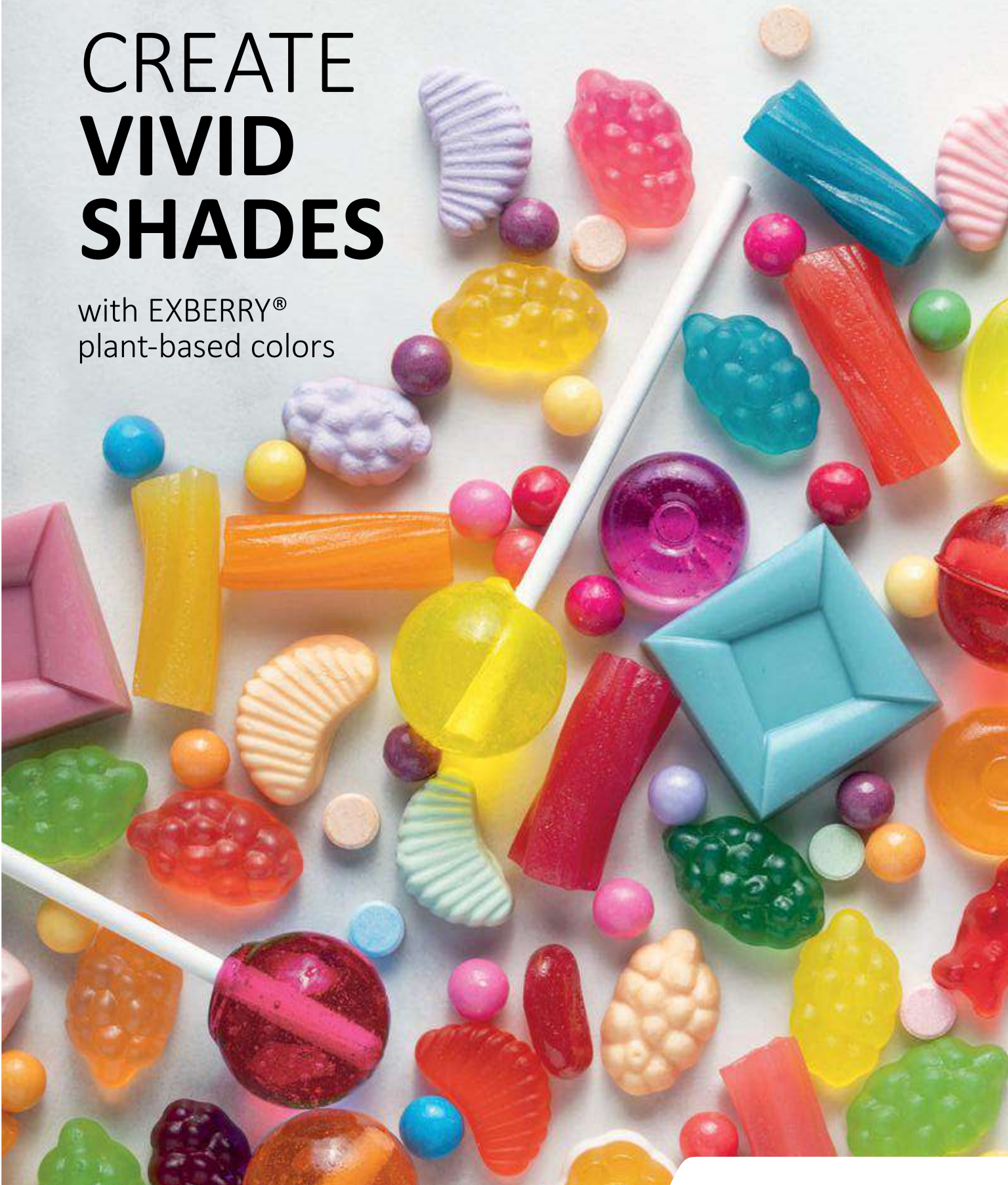
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ITC Limited's Sunfeast Launches Breakfast Smoothie to Power India's On-the-Go Mornings



almonds, dates, and four super seeds. With no added sugar and delivering 6g of protein per serving, the smoothie is positioned as a balanced and wholesome start to the day.

Designed specifically for busy mornings—whether it's professionals heading to work, students rushing to college, or individuals juggling tight schedules—the Breakfast Smoothie offers a convenient, grab-and-go option without compromising on taste. By blending familiar, trusted ingredients into an enjoyable format, the brand aims to tap into the rising preference for functional beverages that align with evolving urban consumption habits.

The product is currently available across leading metro cities through quick-commerce platforms and nearby Reliance retail stores, strengthening its accessibility in high-demand urban markets. Best served chilled, the new Sunfeast Breakfast Smoothie reflects ITC's continued focus on innovation in the ready-to-consume nutrition segment, catering to consumers seeking quick, tasty, and reliable morning solutions.

In response to the growing demand for convenient and nutritious breakfast solutions, ITC Limited has expanded its portfolio under the Sunfeast umbrella

with the launch of its all-new Breakfast Smoothie. Crafted for today's fast-paced lifestyles, the ready-to-drink beverage combines the goodness of banana, oats,

Ice Cream Works Introduces 'Zero Sugar Added' – A New Era of Guilt-Free Indulgence



Ice Cream Works, a brand that has always celebrated creativity and craftsmanship, continues to evolve with changing times and consumer preferences. Recognizing the growing shift toward mindful eating and healthier lifestyles, the brand is expanding its portfolio to cater to a new generation of health-conscious consumers, while staying true to its promise of delivering rich flavour, creamy texture, and uncompromised indulgence in every scoop.

The House of Ice Cream Works has introduced its newest range, Ice Cream

Works Zero Sugar Added, a product that redefines guilt-free indulgence for today's health-conscious consumer. In an era where mindful eating is becoming a lifestyle, this launch brings together clean ingredients, natural sweetness, and the signature creamy decadence that ICW is known for.

"As a brand, we have always believed in evolving with the times while staying true to our commitment to quality and taste," says Rishi Chona, Founder, Ice Cream Works. "With Zero Sugar Added, our vision was to create a product that aligns with today's health-con-

scious lifestyle without compromising on indulgence. It represents a new chapter for Ice Cream Works- one where innovation, purity, and pleasure come together seamlessly.”

The idea for this range stemmed from a simple insight: consumers today are increasingly aware of what they eat but are unwilling to compromise on taste. When ICW surveyed the market, it found that most “sugar-free” ice creams lacked the authentic texture and richness of traditional ice cream. With Zero Sugar Added, the brand set out to create a product that tastes just as indulgent as its classic offerings, only cleaner, lighter, and better for you.

What truly sets Ice Cream Works Zero Sugar Added apart is its commitment to purity and taste. The range is crafted using 100% natural sugar substitutes such as Stevia and monk fruit are zero-calorie, plant-based sweeteners that do not raise blood sugar levels and have a zero glycemic index. Monk fruit contains natural antioxidant compounds and both are free from artificial sweeteners. Each flavour has been developed to deliver indulgence without guilt, with the same creamy mouthfeel ICW fans love. Signature innovations include unique creations like the Three Berries Ice Cream, alongside a mix of classic favourites and refreshing new flavours.

Designed for health-conscious millennials and Gen Z consumers, fitness enthusiasts, and those managing dietary restrictions like diabetes, this range appeals to anyone seeking healthier alternatives without giving up on taste. The collection is available across all formats dine-in, takeaway, and delivery – making it easy for everyone to experience guilt-free indulgence.

Price points start at ₹139–₹159 for 100 ml tubs, ₹139–₹149 for bars, and ₹129 for fruit popsicles. With natural sweeteners, low-calorie content, and an uncompromised creamy texture, Ice Cream Works Zero Sugar Added is here to disrupt the dessert market and prove that health and indulgence can truly go hand in hand, because Zero never tasted this good.

Anmol Industries Introduces Anmol Top Treat – A New Benchmark in Savory Snacking



Anmol Industries Limited, one of India's leading FMCG companies, has expanded its innovative snacking portfolio with the launch of Anmol Top Treat, a premium range of savory crackers designed to offer consumers a delightful blend of taste, crunch, and versatility. Crafted to satisfy modern-day snacking needs, Anmol Top Treat aims to redefine everyday indulgence with its distinctive Creamy Onion & Chive flavor.

Designed for today's dynamic lifestyles, Anmol Top Treat crackers are crispy, light, and perfectly seasoned, making them an ideal companion for mid-day hunger pangs, tea-time snacking, or light evening indulgence. The Creamy Onion & Chive variant delivers a unique fusion of creamy richness, subtle saltiness, and refreshing herbal notes, creating a flavorful snacking experience that appeals to both adults and young consumers.

What sets Anmol Top Treat apart is its versatility. These savory crackers can be enjoyed straight from the pack or enhanced with toppings such as fresh vegetables, herbs, and spices, allowing consumers to personalize their snack moments. Whether served at home, during casual gatherings, or paired with dips and spreads, Anmol Top Treat offers endless snacking possibilities.

Commenting on the launch, Aman Choudhary, Executive Director – Marketing & Innovation, Anmol Industries Limited, said: “At Anmol, innovation is driven by evolving consumer preferences and modern snacking habits. With Anmol Top Treat, we aimed to create a product that delivers superior taste, exciting flavors, and everyday versatility. The Creamy Onion & Chive variant reflects our commitment to bringing globally inspired flavors tailored to Indian palates. We believe this launch will strengthen our presence in the savory biscuit segment and offer consumers a refreshing new snacking choice.”

With this launch, Anmol Industries Limited continues to reinforce its leadership in the bakery and snacking category, expanding its portfolio with products that combine innovation, taste excellence, and value. Anmol Top Treat will be available across major retail outlets, modern trade stores, and e-commerce platforms nationwide.

PepsiCo expands food portfolio with new Alvalle hot soups

PepsiCo is entering into a new food category with the launch of a ready-to-heat range of vegetable soups under its Alvalle brand. The range builds on Alvalle's pioneering success in the packed gazpacho soup category, and aligns with consumer trends toward convenience, health, and plant-based eating and those seeking ready-to-eat, nutritious meals.

Produced in the heart of Murcia, the soups are made with 100% Spanish-sourced natural ingredients – vegetables, olive oil and salt – no additives or gluten, and will be listed in the chilled aisle. Customers will be able to enjoy two brand new recipes – Vegetable Cream, made with zucchini, carrot, potato, and onion – and Pumpkin Cream, filled with pumpkin, carrot, onion and sweet potato. The hot soups will launch initially in Spain with plans to expand into Portugal and other markets in Western Europe. Currently sales of gazpacho largely



happen during warmer months, however with consumers looking for convenient, healthy meals during colder periods, the expansion harnesses a growth opportunity for the brand. The two new hot soups will also complement the seasonal nature of Alvalle's business as it will utilize available production capacity in the winter. "PepsiCo is seizing a strategic opportunity for Alvalle to become an all-year fixture by responding to how consumers eat across seasons, with simple, convenient meals made with natural ingredients that fit lunch and dinner occasions. It is a natural evolution for our Alvalle brand and opens the door to growth to

even more geographies by appealing to a wider range of consumers" said Lluís Crespo, Alvalle General Manager within PepsiCo's Food Ventures Business Unit.

The category expansion aligns with PepsiCo's focus as a food company rooted in agriculture and is the latest move into broadening its food portfolio across the globe, following recent acquisitions such as Siete Foods and Sabra dips. Alvalle's hot soups embody PepsiCo's positive agriculture and supply chain commitments, offering consumers a delicious, sustainable choice for every season.

The soups are sold in 600ml bottles and made from 100% recycled plastic (rPET)¹ which supports PepsiCo's efforts to use more sustainable packaging solutions. Earlier this year, Alvalle and the PepsiCo Foundation launched the VivaOliva program in Jaén, Spain, a region from which the brand sources olive oil used in its gazpacho, aiming to help 150 olive farmers adopt more regenerative agriculture practices and improve their business. *(1 excluding the cap and label)*

Ghodawat Consumer Limited (GCL), announced the launch of TBH Coconut Water



Ghodawat Consumer Limited (GCL), the FMCG arm of Sanjay Ghodawat Group, has launched TBH Coconut Water, marking the brand's entry into India's fast-growing natural hydration segment. The product expands the brand's TBH (To Be Honest) portfolio

beyond its healthy snacks made from real fruits and vegetables, extending its clean-label philosophy into beverages.

Sourced from fresh coconuts in Tamil Nadu, the drink contains no added sugar, concentrates, or artificial flavours, preserving the natural taste and electrolyte benefits of coconut water. It is available in a 200 ml PET bottle priced at ₹60, aligning with the company's aim to offer ingredient-led products at accessible price points.

The launch reflects rising consumer demand for functional and health-focused beverages in India. Industry estimates suggest the Indian functional beverage market, valued at USD 6.9 billion in 2025, could reach USD 18.8 billion by 2034, growing at a CAGR of 10.74%. Within this segment, packaged coconut water is expanding rapidly across general trade,

modern retail, and e-commerce channels. According to Salloni Ghodawat, CEO of GCL, hydration emerged as a natural extension of the TBH brand's focus on healthier everyday choices. She noted that the coconut water launch represents a logical evolution for the brand, maintaining its emphasis on simple, functional products made from real ingredients. The product will initially be distributed through general trade channels across India, supported by strong point-of-sale visibility and ingredient-focused communication. Produced through minimal processing and rapid packaging to maintain freshness, TBH Coconut Water aims to meet growing consumer demand for authentic, clean-label hydration options.

The coconut water market itself is shifting from largely unorganised consumption to branded and packaged formats, offering better quality assurance and transparency. For TBH, this entry creates a complementary growth opportunity, leveraging its existing consumer base and expanding into the rapidly evolving functional beverage category.

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Cornitos Unveils Energy-Led Packaging for Its Nuts & Seeds Range



Cornitos, one of India's leading premium snacking brands, has introduced a refreshed packaging design for its Nuts & Seeds range, built around a bold, energy-driven and consumer-centric approach. The redesign reflects the brand's commitment to supporting modern lifestyles with convenient, wholesome, and high-quality snacking solutions.

The new packaging features a cleaner, more contemporary visual identity that highlights vitality and everyday energy.

Designed with improved functionality and enhanced shelf appeal, the packs are easier to carry, store, and consume on the go — making them ideal for office breaks, travel, fitness routines, and daily mindful snacking moments.

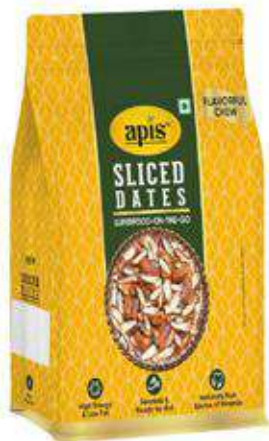
Cashews, Almonds, Party Mix, Pistachios, Super Seeds, and Pumpkin Seeds anchor the refreshed portfolio — offering nutrient-rich options crafted for consumers seeking smarter snack choices without compromising on flavour or convenience. Each pack

reflects energy, freshness, and modern relevance. While the look has evolved, the promise remains unchanged — the same premium quality, satisfying crunch, and trusted taste that consumers associate with Cornitos.

Commenting on the refresh, Manoj Singh, Head of Marketing, Cornitos, said: "Today's consumers are increasingly conscious about what they snack on. With our new energy-led packaging, we wanted to create a design that reflects vibrancy, modern lifestyles, and convenience — while continuing to deliver the same quality and taste that our consumers trust. This refresh strengthens our connection with evolving snacking habits."

With this upgrade, Cornitos reinforces its commitment to innovation and consumer-first thinking — ensuring that better-for-you snacking seamlessly fits into everyday life. Price Range: Starting from Rs. 145. Available at: www.shop.cornitos.in and leading retail and modern trade outlets across India.

Apis India Simplifies Healthy Snacking with Ready-to-Eat Sliced Dates



Apis India, a leading FMCG brand incorporated in 1983, has announced the launch of Sliced Dates, a thoughtfully prepared, ready-to-eat, guilt-free superfood that blends natural sweetness and convenience. Eating dates can sometimes feel like more effort than it should be — check-

ing for seeds, cleaning them, or cutting them before use. Recognising this everyday inconvenience, Apis India has introduced Sliced Dates to make healthy snacking simpler and more accessible. Ready to eat and conveniently packed, the product preserves the natural taste and nutrition of dates while offering everyday affordability.

With the launch of Sliced Dates, Apis India Ltd strengthens its clean nutrition portfolio under health & wellness while expanding its value-added offerings for modern consumers. This move furthers the brand's effort to make healthy snacking both effortless and accessible. Crafted for everyone across age groups and lifestyles, Sliced Dates caters both to premium, variety-seeking, health-conscious consumers and to value-driven families looking for reliable and convenient packaged dates. The deseeded and sliced dates reduce

preparation time, making it an easy addition to breakfast bowls, with milk, sweets preparation, snack breaks, or quick energy boosts during the day, while maintaining the natural taste and goodness of the superfood.

Commenting on the launch, Mr Amit Anand, Managing Director, Apis India Limited, said, "Consumers today are looking for snacks that deliver on taste, nutrition, and convenience simultaneously. Sliced Dates is one of the choices to the growing demand for clean, convenient, guilt-free snacking."

He further added, "Dates are packed with nutrients, and are a great alternative for snacking. However, the deseeding and cleaning process makes consumers wary. The Sliced Dates addresses these concerns, without compromising on the quality."

The newly launched product will be available PAN India across local stores and leading e-commerce platforms such as Amazon, JioMart, Blinkit, BigBasket & DMart.

Anmol Industries Launches YOLO Choco Donut Cakes – A Fun twist to Indulgent Snacking



Anmol Industries, one of India's leading FMCG food brands, has announced the launch of its latest indulgent innovation — Anmol YOLO Choco Donut Cakes, a delightful fusion of rich chocolate cake and the playful shape of a donut. Crafted to appeal to consumers across age groups, the new offering promises a soft, moist, and fluffy texture, delivering a perfect anytime-snacking experience.

Designed for today's young and dynamic consumers, Anmol YOLO Choco Donut Cakes combine premium quality ingredients such as refined wheat flour, sugar, eggs, cocoa solids, palm oil, liquid glucose, and carefully selected raising agents to ensure consistent taste, freshness, and quality. The donut-shaped cakes offer a unique visual appeal, making them ideal for on-the-go snacking, school tiffins, work breaks, and casual indulgence.

Speaking on the launch, Aman Choudhary, Executive Director – Marketing & Innovation, Anmol Industries, said, "At Anmol, innovation is driven by evolving consumer preferences and changing lifestyles. With YOLO Choco Donut Cakes, we aim to bring together fun, flavor, and indulgence in a format that resonates strongly with Gen Z and millennial consumers. This product reflects our commitment to delivering exciting snacking options without compromising on quality, taste, and affordability."

The launch of YOLO Choco Donut Cakes further strengthens Anmol Industries' robust product portfolio, reinforcing its leadership in the Indian bakery and confectionery segment. With a focus on innovation, quality, and consumer-centric product development, Anmol continues to expand its footprint across modern trade, general trade, and e-commerce platforms nationwide.



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Britannia Jim Jam Unveils an Exciting Marvel-Inspired range



From shields and hammers to claws and quick comebacks, Marvel Super Heroes are always in the middle of action. Bringing this high-energy world into your hands, Britannia Jim Jam announces the launch of its Marvel-themed special edition packs with designs inspired by epic storytelling and larger-than-life characters.

Launching across Britannia Jim Jam and Britannia Jim Jam Pops, the new range features fan-favourites Captain America, Thor, Iron Man, Deadpool and Wolverine. Each pack will appeal to Marvel fans using signature bold graphics and striking visual cues – from Captain America's shield and Thor's hammer to Iron Man's suit, Deadpool's twin katanas and Wolverine's claws, each iconic element adds a fun twist to your snacking experience.

At the heart of the campaign launch is a simple, cheeky take: Super Heroes almost always have their hands full – ready to save the world. Easily enjoyed with one hand, Britannia Jim Jam are the ideal snack for any adventure.

This idea comes alive in a new ad featuring five Marvel cosplayers holding a fictional Super Hero press conference; they are then faced with an unexpected question from Jimmy and Jammy, which sparks a humorous realization – Super Heroes (even cosplayers!) rarely have a free hand to enjoy a snack! The moment sets up Britannia Jim Jam's key proposition, showcasing that it can be enjoyed effortlessly with one hand.

Siddharth Gupta, Vice President – Marketing, Britannia Industries, said, "Our focus has always been on staying

closely connected to culture and finding relevant ways to show up where consumer interest exists, especially among younger Gen-Z audiences who shape what is current and relevant today. Pop culture collaborations are one of the ways we bring this to life, with a focus on delivering connected experiences across multiple touchpoints. Our collaboration with Marvel stands out as a unique opportunity for us to translate this thinking into a cohesive brand experience for our consumers that remains rooted in the product."

Taking this a notch higher is the No-twist challenge, where consumers can scan the special edition pack to unlock an interactive game where they step into the shoes of their favourite Super Heroes. Players take on enemies using one hand while enjoying Jim Jam with the other, mirroring the central idea of the campaign.

Each scan and play earns Jim Jam Coins, giving participants a chance to win special Marvel merchandise, along with the chance to win a trip to Hong Kong Disneyland* So grab your pack and unlock the ultimate Super Hero battle with Britannia Jim Jam.

Steps to play the No-Twist Challenge

- Scan a Britannia Jim Jam or Jim Jam Pops
- Get battle ready
- Stand a chance to win Marvel-themed merchandise or a trip to Hong Kong Disneyland*

Parle Agro Launches SMOODH Kesar Badam, Bringing a Classic Indian Flavour to Its Dairy Beverage Line-Up

Parle Agro, the largest Indian beverage company known for driving innovation in the Indian beverage market, launches Smoodh Kesar Badam the newest addition to its flagship dairy beverage brand, Smoodh. The new offering brings the classic Kesar Badam taste to Smoodh's flavoured milk portfolio, adding another choice for consumers



seeking a rich and indulgent dairy beverage experience.

A flavour combination loved across India, Kesar Badam is known for its familiarity and richness. Smoodh Kesar Badam brings together the goodness of almonds and the warmth of saffron, blended with smooth, creamy milk to deliver a premium indulgent experience

in Smoodh's signature style. It captures the classic Kesar Badam flavour making it perfect for any occasion – whether it's a festive celebration, a family gathering, an evening indulgence, or simply a refreshing treat during the day. Priced at INR 10 for 80 ml and INR 20 for 150 ml, it is designed to be convenient and accessible for everyday consumption.

Commenting on the launch of Smoodh Kesar Badam, Nadia Chauhan, Joint Managing Director and CMO, Parle Agro, said, "Since its launch, Smoodh has redefined the dairy beverage category by making indulgent dairy-based beverages more accessible. The Smoodh flavoured milk range has quickly become a favourite among young consumers and families alike. Kesar Badam is a flavour that carries strong cultural relevance and wide appeal, which made it a natural addition to our portfolio. With Smoodh Kesar Badam, we are bringing this familiar taste in a contemporary, on-the-go format while further strengthening our leadership in the category. This launch reflects our continued focus on building products that align with evolving consumer preferences, while staying rooted in flavours India genuinely connects with."

Smoodh Kesar Badam will be available in multiple pack formats across urban and rural markets, spanning general trade, modern trade and emerging digital and quick commerce platforms. The introduction of Smoodh Kesar Badam is a strategic move by Parle Agro to capitalize on the strong consumer affinity for traditional Indian flavours in the rapidly growing flavoured milk segment. Kesar Badam, with its rich heritage and wide appeal across age groups, represents a significant opportunity to deepen consumer engagement and expand the brand's footprint.

The launch will be supported by an integrated marketing campaign spanning OOH, digital platforms, social media, influencer partnerships, and in-store visibility. The campaign is designed to build strong awareness and drive trial at scale, positioning Smoodh Kesar Badam as the go-to choice for consumers seeking a premium, indulgent dairy beverage that combines tradition with contemporary taste. With Smoodh, Parle Agro continues to expand its dairy beverage presence across flavoured milk and lassi, with flavoured milk variants including Chocolate, Chocolate Hazelnut, Toffee Caramel and the newly launched Kesar Badam.

New Nestlé Vital nutritional drink targets the rising demand for healthy-aging solutions



Nestlé introduces Nestlé Vital, its very first product line of delicious, science-backed nutritional drinks designed for people who want to age well and maintain their health. As consumers reach midlife and beyond, they begin to prioritize elements such as energy levels, strength, quality sleep and physical and mental recovery.¹ The demand for products that support physical health and cognitive function from midlife and onwards is on the rise with nearly half of the global population projected to be over the age of 40 by 2040.² With this launch, Nestlé is expanding its presence in the healthy longevity space, a key strategic growth platform for Nestlé.

"Consumers are increasingly seeking solutions that help them not only live longer but also enjoy healthier lives while maintaining their strength and vitality," said Serena Aboutboul, Head of Nestlé's Nutrition Business. "In fact, the healthy longevity segment is experiencing particularly robust growth. With Nestlé Vital, we are responding to this fast-growing trend by combining decades of nutrition expertise with insights from multiple clinical studies to create great-tasting drinks that support people's daily energy, sleep, and overall vitality needs. Our goal is to make healthy longevity a possibility for everyone."

Developed by experts across Nestlé's global R&D network, Nestlé Vital is designed to help address the specific nutritional needs associated with aging by complementing the daily diet in a simple way. The drinks contain high-quality proteins, fibers as well as a full spectrum of vitamins, minerals and patented bioactive blends. The first

range comprises eight shake powders in four different varieties – strawberry, vanilla, chocolate and unflavored, for two specific moments of the day, morning and evening. The Morning Routine is designed to support focus, provide energy, and maintain strength while the Evening Routine promotes better sleep quality, muscle restoration and healthy skin. The drinks are convenient, low in fat and contain no added sugars.

Dr. Isabelle Bureau-Franz, Head of R&D for Nutrition says: "Our research looks across all aspects of aging, including how nutrition impacts metabolic health, digestion, mobility, brain health, sleep, and the menopause transition. Emerging evidence also shows that nutrition can impact the pace of biological aging.³ With Nestlé Vital, we have translated this science, and, together with our proprietary protein technology and clinically-proven bioactives, we developed simple, great-tasting, nutrient-rich products aimed at people from midlife onward who want to start aging smarter."

Nestlé Vital will be launched first in Latin America this year, followed by a later expansion to Europe and Asia. Nestlé is developing an entire program called 'Smart Aging' which aims to make aging well a choice accessible to all through expert advice and simple routines. Nestlé Vital is the first innovation of the program.

¹ Nestlé research run in North America, Europe and Asia, among 9 000 consumers 40+ years old.

² According to World Bank data.

³ Guasch Ferre, *Nature Medicine* 2025. Fadnes, *Nature Food* 2023, *Plos Medicine* 2022, Li et al, *BMJ* 2020

Vikram Mills Expands Portfolio with New 100-Ton 'Rice to Rice' Plant at Delhi Headquarters



Vikram Mills, a legacy name renowned for manufacturing premium quality wheat flours, has announced a major strategic expansion to its operations. This year, the company successfully implemented a new 100-tons-per-day "rice to rice" processing plant directly at its headquarters at Lawrence Road Industrial Area. This latest development marks a significant milestone in the company's evolution from a specialised flour miller into a comprehensive agro-products powerhouse.

Speaking on the development, Mr. Shubham Garg, Director, Vikram Roller Flour Mills Limited said, "The addition of the 100-ton rice-to-rice plant at our Delhi headquarters is an important step for us. It allows us to extend our established wheat processing capabilit-

ies into rice while strengthening supply and logistics across NCR. Our focus remains on building capacity in line with long-term demand."

Building on regional success, the launch of the headquarters unit follows closely on the heels of another major operational victory. Just last year, Vikram Mills successfully commissioned a 100-tons-per-day "paddy to rice" plant located in Kilo, Rohtak.

The Rohtak facility expanded the company's rice processing operations, particularly in procurement planning, grading and large-scale handling. The experience from that unit supported the setup of the new headquarters plant and helped streamline sourcing, processing and distribution activities. The seamless implementation of the Rohtak plant reinforced the company's ability to scale beyond wheat. Now, the new headquarters plant builds on that base and expands processing capacity to meet domestic supply requirements in the Delhi NCR region.

Combining "Flour Muscle" with Basmati Rice Production, this is a strategic move to integrate wheat and basmati rice operations at the headquarters. By

placing the new rice-to-rice plant at its headquarters, Vikram Mills is effectively combining its traditional "flour muscle", its large-scale wheat processing capacity, with its growing rice operations.

This integration offers several distinct advantages for the market:

One-Stop Solution: It enables a single manufacturing unit to cater to dual demands, streamlining logistics and procurement. **Enhanced B2B Services:** Business partners, FMCG retailers and institutional buyers can now source both premium flour and high-quality rice from the same trusted supplier. **Supply Chain Efficiency:** Consolidating these operations ensures a highly controlled, uninterrupted and efficient supply of essential staples across the capital region.

Looking ahead, as consumer and institutional demand changes, many buyers prefer to source multiple staples from reliable partners. Vikram Mills plans to strengthen its distribution network to serve both food service and retail markets. With the Rohtak and Delhi plants operational, the company will focus on maintaining steady supply and consistent output across its wheat and rice operations.

Phab Launches Cheat Bars, Making Protein Snacks Finally Feel Worth Craving

Phab, the nutritionist-led snacking brand, has launched Phab Cheat Bars, a new range of soft, dessert-inspired protein bars designed to combine indulgent taste with nutritional value. Developed by nutritionist and founder Gayatri Chona, the bars are available in flavours such as Blueberry Cheesecake, Chocolate Hazelnut, and Chocolate Peanut Butter. Each bar delivers 15g of organic vegan pea protein, contains no added sugar, and has under 160 calories, offering a balanced option for everyday snacking.

The new product range aims to chal-

lenge the common perception that healthy food must compromise on taste. While many protein bars focus primarily on nutritional numbers and desserts prioritise indulgence, Phab Cheat Bars aim to bridge this gap by offering a snack that is both flavourful and functional. The bars are designed to satisfy everyday cravings while supporting a balanced and active lifestyle.

Targeted at modern consumers including fitness enthusiasts, macro-counters, and casual snackers, the product reflects Phab's goal of making protein consumption more enjoyable and ac-



cessible. Phab Cheat Bars are currently available on the brand's official website and on leading quick commerce platforms such as Blinkit and Amazon.



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**Savory Snack Products Market Size
Worth USD 403.52 Billion By 2034 |
CAGR: 5.7%**

Roquette launches breakthrough clean-tasting pea protein isolate

Roquette, a global leader in plant-based ingredients, is expanding its NUTRALYS® portfolio with the launch of NUTRALYS® Pea 850F, a new pea protein isolate designed to unlock superior sensory performance in plant-based formulations. Developed to address common formulation challenges, this next-generation ingredient enables food and beverage manufacturers to create plant-based alternatives with cleaner, more neutral taste profiles.

Taking pea protein formulation to the next level

The launch responds to accelerating consumer demand for high-protein products, with three in five consumers worldwide actively increasing their protein intake*. At the same time, brands and formulators face growing pressure to deliver plant-based alternatives that match conventional products on taste – a challenge that has historically required extensive use of flavoring systems as masking agents.

Pea protein has emerged as formulators' preferred choice for plant-based innovation**, thanks to its strong nutritional profile, regional sourcing availability and competitive pricing. However, its characteristic taste has remained a persistent formulation barrier, requiring manufacturers to invest in complex masking strategies which can compromise clean label positioning.

NUTRALYS® Pea 850F provides the complete nutritional benefits of pea protein while significantly reducing vegetal or pea notes. Expert sensory panel analysis confirms the ingredient's more neutral and smooth taste profile, enabling formulators to develop higher-protein products without sacrificing flavor quality.

Importantly, this improved sensory performance is achieved by directly addressing pea protein's taste issues, without the need for additional ingredients or processing aids. As a result, products formulated with NUTRALYS®



Pea 850F can be labeled simply as 'pea protein' or 'pea protein isolate', simplifying reformulation requirements in a consumer-friendly way.

Formulation flexibility

NUTRALYS® Pea 850F delivers functional performance comparable to Roquette's established NUTRALYS® S85F benchmark, while offering enhanced sensory characteristics. The new ingredient provides high emulsion capacity for stable formulations, moderate gelling and viscosity and excellent solubility, making it particularly well-suited for ready-to-mix and ready-to-drink applications. Its versatility extends across dairy alternatives, beverages, and specialized nutrition categories.

This combination of technical functionality and sensory performance enables formulators to tap into emerging market opportunities, including high-protein products designed for GLP-1 users. This rapidly-expanding segment has driven 29% growth in food and beverage launches featuring protein and weight management claims in 2024 / 2025, compared to the previous year*.

Overcoming historical taste barriers "Pea protein provides excellent nutrition and functionality in plant-based and high protein foods and beverages, but sensory performance has re-

mained a critical barrier to wider adoption. Consumers understandably want the protein hit without the overpowering vegetal taste," comments Benjamin Voiry, Global Protein Product Marketing at Roquette. "With NUTRALYS® Pea 850F, we have tackled the problem at ingredient level, rather than just masking it. This is an important milestone for manufacturers, giving them the freedom to create products that consumers genuinely enjoy, with cleaner formulations and simplified labels."

"From a formulation standpoint, reducing off-notes at source makes an immediate difference," adds Adeline Morcet, Application Scientist at Roquette. "It allows producers to focus on texture, nutrition and overall product experience, rather than compensating for flavor challenges. That efficiency can significantly shorten development timelines – creating plant-based products that stand out for the right reasons."

NUTRALYS® Pea 850F, which is not listed as a major allergen, forms part of the wider NUTRALYS® portfolio, which now includes proteins from pea, wheat, and fava bean – supporting a wide variety of use in plant-based, hybrid, and high-protein foods and beverages. The NUTRALYS® protein range combines functional and nutritional performance, together with high quality standards.

*Innova Trends Survey, 2026

**Innova, 2024.

Savory Snack Products Market Size Worth USD 403.52 Billion By 2034 | CAGR: 5.7%



growth of the savory snack products market is the shift in consumer eating patterns. Urbanization and busy lifestyles have significantly increased the demand for quick snack options that can be consumed anytime during the day. Additionally, the growing influence of global food cultures has encouraged manufacturers to introduce new flavor combinations and innovative snack varieties that appeal to diverse consumer tastes.

Manufacturers are also investing heavily in product innovation, introducing unique ingredients, new processing techniques, and premium snack offerings. These innovations allow companies to cater to changing consumer preferences while maintaining strong market competitiveness.

Key Market Growth Drivers

Rising Demand for Convenient and On-the-Go Food

One of the primary drivers fueling the savory snack products market growth is the increasing demand for convenient food options. With hectic lifestyles and longer working hours, consumers are turning to ready-to-eat snacks that require minimal preparation. Savory snacks offer quick energy and satisfy hunger between meals, making them popular among working professionals, students, and travelers. The increasing popularity of single-serve packaging and portable snack packs further supports this trend.

Expansion of Organized Retail and E-Commerce

The expansion of modern retail infrastructure—including supermarkets, hypermarkets, and online grocery platforms—has significantly improved the accessibility of savory snack products. Retail chains offer a wide variety of brands and product choices, allowing consumers to easily compare products and explore new snack varieties. Online retail is also playing a growing role in the distribution of snack products. Digital platforms allow manufacturers to reach broader consumer bases while enabling customers to conveniently purchase snacks from home.

Growing Demand for Innovative Flavors and Healthy Alternatives

Consumer preferences are shifting to-

The Savory Snack Products Market is witnessing significant expansion as consumers increasingly seek convenient, flavorful, and ready-to-eat food options. Savory snacks—including potato chips, popcorn, extruded snacks, nuts, and tortillas—have become a staple in modern diets due to their portability, taste variety, and accessibility through multiple retail channels. With evolving lifestyles, busy work schedules, and the rise of on-the-go eating habits, the demand for packaged snack foods continues to rise across both developed and emerging markets.

According to insights from the Savory Snack Products Market report, the global market was valued at USD 231.66 billion in 2024 and is projected to reach USD 403.52 billion by 2034, registering

a compound annual growth rate (CAGR) of 5.7% during the forecast period. The increasing expansion of retail networks, rising demand for healthy snack alternatives, and growing consumer preference for diverse flavors are among the key factors supporting this market growth.

Market Overview

Savory snack products refer to food items that feature salty, spicy, or umami flavors and are typically consumed between meals as convenient refreshments. These products are widely available in supermarkets, convenience stores, and online retail platforms, making them easily accessible to consumers worldwide.

One of the key reasons behind the rapid

ward diverse flavor profiles and healthier snack alternatives. Manufacturers are responding to this demand by introducing products with new taste combinations such as spicy, smoked, barbeque, and teriyaki flavors.

Additionally, there is a rising demand for healthier snack options that include high-protein ingredients, plant-based components, and reduced sodium formulations. Snack brands are increasingly focusing on natural ingredients, baked snacks, and functional foods to attract health-conscious consumers.

Despite its strong growth prospects, the savory snack products market faces certain challenges. One of the key concerns is the growing awareness of health risks associated with excessive consumption of processed snack foods. Many savory snacks contain high levels of salt, fats, preservatives, and artificial additives, which may contribute to health issues such as obesity and cardiovascular diseases. Rising consumer awareness about healthy eating habits may limit the consumption of traditional snack products.

Health organizations have also highlighted the growing prevalence of obesity in several countries, raising concerns about high-calorie snack consumption. These factors are prompting manufacturers to reformulate products with healthier ingredients and improved nutritional profiles.

Regional Analysis

From a regional perspective, North America dominates the savory snack products market, driven by strong consumer demand for packaged snacks, advanced food processing technologies, and a well-established retail network. Consumers in the region value convenience, taste variety, and premium snack experiences, contributing to high market penetration.

Europe represents another important market due to increasing demand for innovative snack flavors and premium snack products. The region's growing focus on organic and natural ingredients is also influencing product development strategies among snack manufacturers.



The expansion of modern retail infrastructure—including supermarkets, hypermarkets, and online grocery platforms—has significantly improved the accessibility of savory snack products. Retail chains offer a wide variety of brands and product choices, allowing consumers to easily compare products and explore new snack varieties. Online retail is also playing a growing role in the distribution of snack products. Digital platforms allow manufacturers to reach broader consumer bases while enabling customers to conveniently purchase snacks from home.

The Asia-Pacific region is expected to witness the fastest growth during the forecast period. Rapid urbanization, increasing disposable incomes, and changing dietary habits are driving the demand for packaged snack foods in countries such as China, India, and Southeast Asian nations. Additionally, aggressive marketing campaigns and expanding retail networks are enabling snack manufacturers to reach a wider consumer base across emerging markets.

Market Segmentation

The savory snack products market is segmented based on product type, flavor, distribution channel, and region.

By product type, the market includes potato chips, extruded snacks, popcorn, nuts & seeds, puffed snacks, tortillas, and other snack varieties. Among these, potato chips and extruded snacks hold

a significant share due to their widespread popularity and availability in multiple flavors.

By flavor, the market is categorized into barbeque, spicy, salty, plain/unflavored, and other flavor profiles. The introduction of experimental flavors and region-specific tastes has played a crucial role in expanding consumer interest in savory snacks. Based on distribution channels, the market includes retail stores and foodservice outlets. Retail stores—including supermarkets, hypermarkets, and convenience stores—currently account for the largest revenue share due to the extensive variety of snack products available across different brands.

Conclusion

The Savory Snack Products Market is expected to experience sustained growth as consumer lifestyles continue to evolve toward convenience-driven eating habits. Increasing demand for innovative flavors, expanding retail infrastructure, and the growing popularity of on-the-go snacks are key factors fueling market expansion.

At the same time, manufacturers are responding to changing consumer expectations by introducing healthier formulations, clean-label ingredients, and functional snack products. As innovation and product diversification continue to shape the food industry, savory snack products are likely to remain a dominant segment in the global packaged food market in the coming years.

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Gluten-Free Bakery Market: Expanding Opportunities in the Era of Health-Conscious Eating

Gluten-Free Bakery Market To Reach USD 5.77 billion by 2033

Rising Global Demand for Gluten-Free Bakery Products

The global food industry is witnessing a strong shift toward healthier and more specialized dietary products, and gluten-free bakery items have emerged as one of the fastest-growing segments within this transformation. Once considered a niche category designed primarily for individuals with specific medical conditions, gluten-free foods are now widely embraced by consumers seeking healthier lifestyles and clean-label products. According to Growth Market Report estimates, the global gluten-free bakery market reached approximately USD 2.87 billion in 2024. With increasing awareness of gluten-related health conditions and changing dietary habits, the market is projected to grow at a compound annual growth rate (CAGR) of 8.3% between 2025 and 2033, potentially reaching a value of USD 5.77 billion by 2033. This growth reflects a broader shift in consumer preferences toward wellness-oriented foods and innovative bakery alternatives.

Understanding Gluten and Its Impact on Health

Gluten is a protein found in grains such as wheat, barley, and rye, and it plays a crucial role in traditional baking by providing elasticity and structure to products like bread, cakes, and pastries. However, for individuals suffering from celiac disease or gluten intolerance, consuming gluten can lead to severe health complications, including digestive disorders, inflammation, and nutrient absorption issues. Historically, gluten-free products were developed primarily to cater to these medical needs. In recent years, however, gluten-free diets have gained popularity beyond medical necessity, as consumers increasingly associate such products with better digestion, improved health, and cleaner eating habits. This shift in perception has significantly expanded the consumer



base for gluten-free bakery products across the globe.

Changing Consumer Behaviour in India

In India, the demand for gluten-free foods is gradually gaining momentum, particularly among urban consumers. The rising awareness about nutrition and ingredient transparency has encouraged people to become more mindful about what they eat. Urban consumers are increasingly reading food labels and making conscious decisions based on health considerations. Lifestyle-related issues such as bloating, digestive discomfort, and autoimmune concerns have also prompted individuals to experiment with gluten-free diets. Additionally, younger consumers, especially Millennials and Gen Z, often associate gluten-free foods with premium quality, clean eating, and fitness-oriented lifestyles. Social media and exposure to global wellness trends have further accelerated this shift, introducing Indian consumers to international dietary movements and encouraging them to explore alternative food options.

Growth of the Gluten-Free Bakery Segment in India

Although still in its early stages, the gluten-free bakery market in India shows considerable growth potential. Unlike Western markets where gluten-free bread dominates the category, Indian consumers tend to prefer snack-oriented bakery items that align with local

consumption habits. Products such as cookies, biscuits, brownies, muffins, and cakes are gaining popularity due to their convenience and longer shelf life. Gluten-free bread is available in the market, but demand remains comparatively lower than snack-style bakery items. Ready-to-mix gluten-free baking flours are also becoming increasingly popular, enabling consumers to prepare gluten-free baked goods at home.

Alternative Ingredients Driving Product Innovation

Developing gluten-free bakery products presents several technical challenges, particularly when it comes to replacing wheat flour. Wheat provides the elasticity and texture essential for traditional baked goods, and replicating these characteristics using alternative ingredients requires careful formulation. To overcome this challenge, manufacturers rely on a variety of gluten-free flours and starches. In India, commonly used ingredients include rice flour, ragi (finger millet) flour, jowar (sorghum) flour, bajra (pearl millet) flour, almond flour, tapioca starch, and chickpea flour. These ingredients not only help replicate the texture of wheat-based products but also enhance the nutritional profile of bakery items. India holds a unique advantage in this space due to its long-standing tradition of millet consumption. With the government promoting millets as "Shree Anna," these naturally gluten-free grains are increasingly being incorporated into modern bakery recipes, creating opportunities for innovative and nutritious product development.

Consumer Segments Driving Demand

Consumer demand for gluten-free bakery products in India can be broadly categorized into several segments. Urban health-conscious consumers represent the largest group, with metropolitan cities such as Mumbai, Delhi, Bengaluru, and Hyderabad driving

much of the demand. These consumers actively seek healthier alternatives and are willing to pay a premium for specialized food products. Another important segment consists of individuals with celiac disease or gluten sensitivity who depend on certified gluten-free foods for their daily diet. Premium and affluent consumers also contribute to the market, often perceiving gluten-free products as aspirational and associated with global lifestyles. Additionally, parents are increasingly choosing clean-label snacks for their children, preferring products that avoid allergens and artificial ingredients.

Expanding Distribution Channels

The distribution landscape for gluten-free bakery products in India is evolving rapidly. Premium supermarkets and gourmet food stores remain important retail outlets for these products, especially in urban markets. However, e-commerce platforms have emerged as a powerful growth driver for the segment. Online marketplaces and direct-to-consumer brand websites have made gluten-free products more accessible to consumers beyond major metropolitan cities. Health food specialty stores, cloud kitchens, and home bakers are also contributing to the expansion of the gluten-free bakery ecosystem. The growth of digital retail channels has been particularly significant in raising awareness and enabling consumers in Tier 2 cities to explore specialty food products.

Pricing Trends and Market Positioning

One of the defining characteristics of gluten-free bakery products is their premium pricing. These products typically cost between 30% and 150% more than conventional bakery items. Several factors contribute to this price difference, including the higher cost of alternative ingredients, smaller production volumes, and specialized manufacturing processes. Additionally, gluten-free products often require strict quality control measures and certifications to prevent cross-contamination with gluten-containing ingredients. Despite these challenges, the price gap between conventional and gluten-free bakery products is gradually narrowing as production scales increase and local sourcing of ingredients improves.

Key Challenges in the Market

While the market shows promising growth prospects, several challenges still need to be addressed. High production costs remain one of the most significant barriers to wider adoption. Alternative flours such as almond or millet-based ingredients are often more expensive than wheat flour, making large-scale production difficult. Texture and taste also remain areas of concern for some consumers, as gluten-free products can sometimes appear dry or crumbly compared to traditional baked goods. Another challenge involves maintaining dedicated gluten-free production environments to avoid cross-contamination, which requires substantial investment. Additionally, consumer awareness about gluten-free foods remains largely concentrated in urban areas, limiting market penetration in rural regions.

Innovation Trends Shaping the Future

Despite these challenges, innovation is rapidly transforming the gluten-free bakery segment. The industry is moving beyond the traditional "free-from" concept toward products that offer additional functional benefits. Manufacturers are experimenting with probiotic-enriched gluten-free breads, high-fiber millet-based cookies, keto-friendly gluten-free cakes, and ready-to-bake flour mixes. Frozen gluten-free products such as parathas and pizza bases are also gaining attention as convenient meal solutions. Advances in food processing technologies and improved flour blending techniques are enabling manufacturers to develop gluten-free products with better texture, taste, and nutritional value than earlier generations.

Government Support and the Millet Advantage

Government initiatives promoting millets have also provided a significant boost to the gluten-free food sector in India. Millets are naturally gluten-free and highly nutritious, making them ideal ingredients for bakery innovations. National programs encouraging millet cultivation, processing, and global promotion are strengthening the supply chain for gluten-free food manufacturers. This strategic advantage places India in a strong position compared to Western markets that rely heavily on imported gluten-free grains.

Competitive Landscape

The global gluten-free bakery market features a mix of multinational corporations and specialized food companies. Major players such as General Mills, Hain Celestial Group, Dr. Schär, Boulder Brands, Kinnikinnick Foods, Enjoy Life Foods, Warburtons, Freedom Foods Group, Genius Foods, Udi's Gluten Free Foods, Bob's Red Mill Natural Foods, Kraft Heinz, and Conagra Brands are actively investing in product innovation and expanding their gluten-free product portfolios. These companies are focusing on improving product quality, enhancing nutritional profiles, and expanding distribution networks to capture the growing demand for gluten-free foods.

Future Outlook

The future of the gluten-free bakery market appears highly promising. In India, the sector is expected to expand rapidly across Tier 1 and Tier 2 cities as consumer awareness continues to increase. Large FMCG companies are likely to enter the category with new product lines, while supermarkets may introduce private-label gluten-free products to cater to growing demand. Direct-to-consumer brands offering subscription-based food services are also expected to gain popularity. Additionally, advancements in digital health technologies may lead to AI-driven personalized nutrition solutions that recommend gluten-free diets based on individual health needs.

Conclusion

The gluten-free bakery market represents a significant opportunity within the evolving food industry. Driven by health awareness, lifestyle changes, and ingredient innovation, the sector is steadily moving from a niche category to a mainstream food trend. With India's strong agricultural base in millets and increasing consumer interest in healthier diets, the country is well-positioned to become an important contributor to the global gluten-free food ecosystem. As manufacturers continue to improve product quality and affordability, gluten-free bakery products are likely to become a regular part of modern dietary choices.

Source: <https://growthmarketreports.com/report/gluten-free-bakery-market>

Introducing Yume™: A new standard for sweetness

Manus and Tate & Lyle launch a new, category-defining sweetener brand. Because nature holds great taste™



Tate & Lyle PLC (Tate & Lyle), a global leader in ingredient solutions for healthier food and beverages, and Manus, the leading bioalternatives scale-up platform, today announced the launch of Yume™, a new brand under The Sweetener Alliance. Yume, from the Japanese word for “dream,” is set to redefine sweetness by harnessing the power of science and nature. The strategic partnership, announced a year ago, aims to expand access to innovative sugar-reduction solutions. The first ingredient under the new brand is Yume™ M Stevia Sweetener, a premium all-Americas stevia-derived sweetener with great sugar-like taste.

Developed and scaled by Manus, Yume™ M Stevia is produced at Manus’ BioFacility in Augusta, Georgia, the only large-scale stevia bioconversion site in the U.S. Yume™ M leverages Manus’ comprehensive all-Americas supply chain, ensuring end-to-end traceability, strengthening supply security for customers, and supporting future stevia innovation.

Said Nick Hampton, CEO, Tate & Lyle:

“The Sweetener Alliance, our strategic partnership with Manus launched a year ago, is a clear example of Tate & Lyle’s science driven, solutions-focused approach at work. Our partnership accelerates the growth of ingredients that meet society’s evolving nutrition needs and industry’s growing need for security of supply. Yume™ M Stevia – our all-Americas stevia Reb M – gives our customers expanded access to innovative, cost-competitive sugar-reduction solutions.”

“Yume™ brings together nature’s promise and Manus’ biomanufacturing capability to deliver a new standard in sweetness,” said Ajikumar “Aji” Parayil, Founder and CEO of Manus. “With Yume™ sweeteners, we are translating next-generation industrial biotechnology and bioalternatives into commercially scalable sweetener solutions. Partnering with Tate & Lyle helps us accelerate global adoption by combining Manus’ bioalternative products, scale-up platform, and supply-chain traceability with Tate & Lyle’s formulation expertise and market access. Together, we are bringing cost-competitive, scalable products to consumer brands looking

to reduce sugar without compromising taste.”

Designed for taste, built for scale Yume™ introduces a premium brand expression for next-generation sweetness – bold on taste, grounded in science, and created to feel approachable, not technical.

“With Yume™, we set out to create a new kind of sweetener brand for the category – one that feels optimistic, modern, and grounded in science,” said Frederik Bjoerndal, Senior Vice President of Corporate Affairs and Marketing at Manus. “Yume™ reflects a deep respect for nature, enabled by advanced biotechnology and uniquely managed supply chains. It’s designed for the people who create products for a living – giving them confidence in taste, performance, and reliability, while pointing to a more hopeful, better-for-you future.”

“Yume™ will help brands reduce sugar while elevating flavour – today and into the future. Yume™ M Stevia unlocks the sweetest parts of stevia leaves through science and innovation. The brand is a celebration of taste, optimism, and progress – translating advanced science into products that are effortlessly enjoyable, joyful, and ready for real-world scale,” said Abigail Storms, Vice President Global Platform, Sweeteners and Fibers at Tate & Lyle.

Yume™ is rooted in nature – because nature holds great taste – and engineered for the realities of modern food production. At launch, Yume™ M Stevia Sweetener delivers a premium Reb M experience designed to meet rising demand for better-for-you products without sacrificing taste. Crafted for sugar-like sweetness and reliable performance, Yume™ M Stevia gives brands a scalable, dependable solution as stevia adoption continues to accelerate across food and beverage categories. The result is sweetness without compromise – exceptional taste, consistent performance, and the confidence to scale.

For more information about Yume™ and Yume™ M Stevia Sweetener, please visit www.sweetyume.com.



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Powering Modern Food Innovation:

The Expanding Role of Dairy Ingredients in the Global Market



The Growing Importance of Dairy Ingredients in Modern Food Systems

Dairy ingredients have become essential building blocks in the modern food and beverage industry, supporting the development of nutritious, functional, and high-quality products across multiple sectors. Derived from milk and processed into a wide range of components such as milk powders, whey proteins, lactose, casein, and milk fats, these ingredients offer exceptional versatility for manufacturers while meeting the evolving nutritional

needs of consumers. As global food systems continue to adapt to shifting dietary patterns, urban lifestyles, and health-focused consumption, dairy ingredients are increasingly being recognized as valuable resources that contribute both functionality and nutrition to a wide variety of food formulations.

The rising global demand for dairy ingredients reflects broader changes in consumer behavior and industry innovation. Today's consumers are more aware of the nutritional value of their

food choices and actively seek products that deliver health benefits beyond basic sustenance. This trend has significantly strengthened the role of dairy-derived components in food manufacturing, where they are used to enhance protein content, improve texture and stability, and extend shelf life. As a result, dairy ingredients are not only central to traditional dairy products but also widely incorporated into bakery items, beverages, confectionery, nutritional supplements, and specialized food formulations.

Health Awareness and the Global Protein Boom

One of the most influential drivers behind the growth of dairy ingredients is the increasing global focus on health and wellness. Consumers are prioritizing nutrient-dense foods that support overall well-being, muscle health, and active lifestyles. Among the most sought-after nutrients, protein has emerged as a key component in modern diets, and dairy proteins—particularly whey and casein—are widely valued for their superior amino acid composition and high digestibility.

Whey proteins, in particular, have gained significant popularity due to their rapid absorption and muscle recovery benefits, making them a preferred ingredient in sports nutrition products, protein beverages, and functional foods. Casein, on the other hand, provides a slower release of amino acids, which supports sustained nutrition and is often used in dietary supplements designed for long-term nourishment. Together, these proteins contribute to the growing market for high-protein snacks, fortified dairy drinks, and nutritional products aimed at both athletes and health-conscious consumers.

This increasing demand for protein-rich foods has transformed dairy ingredients into a cornerstone of functional nutrition. Food manufacturers are continuously developing innovative formulations that integrate dairy proteins into everyday food products, allowing consumers to meet their nutritional

goals through convenient and enjoyable food choices.

Urbanization, Population Growth, and Changing Food Consumption

The rapid expansion of the global population, combined with accelerating urbanization, has also played a significant role in the increasing demand for dairy ingredients. As more people move to urban centers, their lifestyles tend to favor convenient, ready-to-consume, and shelf-stable food products. Dairy ingredients are particularly well-suited to meet these requirements because they provide both nutritional value and functional benefits that enhance product quality and longevity.

Milk powders, for instance, are widely used in packaged foods and beverages due to their long shelf life and ease of storage. These powdered ingredients can be easily incorporated into bakery products, confectionery items, and nutritional beverages, making them indispensable for large-scale food production. Their stability and versatility make them especially valuable in regions where refrigeration and fresh milk supply may be limited.

Furthermore, the increasing demand for processed and packaged foods across emerging markets has further strengthened the position of dairy ingredients in global food manufacturing. As consumers seek convenient yet nutritious options, food producers rely on dairy-based components to enhance flavor, texture, and nutritional content while maintaining product consistency and quality.

Functional Foods and the Rise of Nutraceutical Applications

Another significant factor driving the expansion of dairy ingredients is the rapid growth of the functional food and nutraceutical sectors. Consumers are increasingly looking for foods that offer additional health benefits, such as improved digestion, immune support, and weight management. Dairy ingredients, rich in bioactive compounds and essential nutrients, play a vital role in the development of such products.

Milk-derived components contain peptides, minerals, and proteins that support

various physiological functions, making them valuable in functional beverages, fortified dairy products, and health-focused food formulations. Yogurt drinks enriched with whey proteins, for example, combine taste and nutrition while offering digestive and immune benefits.

The versatility of dairy ingredients also enables manufacturers to create specialized products tailored to different life stages. From pediatric nutrition and sports supplements to clinical and senior nutrition, dairy-derived ingredients provide a reliable source of essential nutrients that support growth, recovery, and overall health.

The Role of Dairy Ingredients Across Food Industries

The wide range of dairy ingredients available today enables food manufacturers to address diverse formulation requirements across multiple food categories. Each ingredient offers unique functional properties that enhance the quality and appeal of finished products.

Milk powders remain among the most widely used dairy ingredients due to their convenience and adaptability. Whole and skimmed milk powders are commonly incorporated into bakery products, dairy beverages, and processed foods. Specialty milk powders, including those enriched with proteins or designed for lactose-free applications, are increasingly used in infant nutrition and specialized dietary products.

Whey proteins have established themselves as key ingredients in sports nutrition and functional foods, where they contribute to muscle recovery and improved nutritional value. In addition to their health benefits, whey proteins provide functional advantages such as emulsification, moisture retention, and improved texture in various food products, including baked goods and dairy desserts.

Casein and caseinates are valued for their stabilizing and emulsifying properties, which make them essential components in processed cheeses, creams, and yogurts. Their ability to create smooth and stable textures contributes significantly to the quality and consistency of many dairy-based products.

Lactose, a natural sugar derived from milk, is frequently used in bakery and confectionery applications due to its mild sweetness and ability to enhance browning and flavor development during cooking. Beyond the food industry, lactose also plays an important role in the pharmaceutical sector, where it serves as a reliable carrier ingredient in tablet formulations.

Milk fats, including butterfat and cream, remain highly prized for their ability to deliver rich flavor and creamy textures. These fats are widely used in premium dairy products, bakery items, and confectionery applications. Products such as clarified butter, commonly known as ghee, are also gaining international popularity due to their extended shelf life and culinary versatility.

Emerging Trends Reshaping the Dairy Ingredient Market

The dairy ingredient sector is undergoing significant transformation as manufacturers respond to evolving consumer expectations and technological advancements. High-protein foods continue to dominate product innovation, with dairy ingredients playing a central role in the development of protein-rich snacks, beverages, and dairy alternatives.

Another notable trend is the increasing demand for lactose-free dairy products. As awareness of lactose intolerance grows, food manufacturers are developing dairy ingredients that retain nutritional value while eliminating lactose-related digestive concerns. These innovations allow a broader group of consumers to enjoy dairy-based nutrition without discomfort. At the same time, the popularity of plant-based diets has encouraged the development of hybrid food products that combine plant ingredients with dairy components. This approach appeals to flexitarian



consumers who wish to reduce their consumption of animal-based products without sacrificing the nutritional benefits of dairy proteins and fats. Infant nutrition is also emerging as a major growth area for dairy ingredients. Specialized formulas enriched with milk-derived nutrients play a crucial role in supporting early childhood development. As global demand for infant nutrition products increases, dairy ingredient manufacturers are investing in advanced formulations that address specific nutritional requirements for infants and young children.

Advancements in Dairy Processing Technologies

Technological innovation is playing a pivotal role in enhancing the functionality and quality of dairy ingredients. Modern processing methods allow manufacturers to isolate, refine, and modify milk components with remarkable precision, enabling the production of ingredients tailored to specific applications.

Techniques such as microfiltration and ultrafiltration enable the separation of proteins and other milk components, allowing manufacturers to create high-protein and low-lactose ingredients with customized nutritional profiles. These technologies are particularly important for the production of specialized dairy products designed for health-focused consumers. Spray drying remains one of the most important technologies in the dairy industry, especially for the production of milk powders and whey powders. By converting liquid dairy products into stable powders, this process significantly extends shelf life while preserving nutritional value. Enzymatic processing has also opened new

Another significant factor driving the expansion of dairy ingredients is the rapid growth of the functional food and nutraceutical sectors. Consumers are increasingly looking for foods that offer additional health benefits, such as improved digestion, immune support, and weight management. Dairy ingredients, rich in bioactive compounds and essential nutrients, play a vital role in the development of such products.

possibilities for modifying dairy proteins to improve solubility, digestibility, and functionality. These innovations are particularly useful in the development of advanced nutritional beverages, protein supplements, and hybrid dairy-plant food products.

Sustainability and the Future of Dairy Ingredients

Sustainability is becoming an increasingly important consideration in the dairy industry, influencing both production practices and product development. Consumers are more conscious than ever about the environmental impact of food production, and dairy manufacturers are responding by adopting more sustainable processing methods. Efforts to reduce carbon emissions, improve water efficiency, and minimize waste are becoming central to dairy ingredient production. By transforming by-products such as whey into valuable nutritional ingredients, the industry is not only reducing waste but also creating new opportunities for innovation.

Regenerative agricultural practices are

also gaining attention within the dairy sector. These methods aim to improve soil health, reduce environmental impact, and promote long-term sustainability in dairy farming. As these practices become more widely adopted, they are expected to strengthen the sustainability credentials of dairy ingredients in the global marketplace.

A Dynamic Future for Dairy-Derived Innovation

The future of dairy ingredients is closely linked to the broader transformation of the global food industry. As consumer preferences continue to evolve, dairy ingredients will remain essential for developing products that balance nutrition, functionality, and sustainability. The growing demand for protein-rich foods, functional nutrition, and convenient packaged products ensures that dairy ingredients will continue to play a pivotal role in food innovation. At the same time, technological advancements and sustainable production practices will further enhance their value and versatility.

In an era defined by rapid change in food systems and dietary habits, dairy ingredients stand out as adaptable, nutrient-rich components capable of supporting the next generation of food products. Their ability to combine taste, nutrition, and functionality ensures that they will remain a key driver of innovation in the global food and beverage industry for years to come.

Ms. Misti Chatterjee is a freelance writer with over six years of experience in content creation and research-based writing. She has contributed articles across various domains, with a growing focus on the food, nutrition, and food processing industries, translating complex technical information into engaging and accessible content for readers.



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40 Rethinking Electrical Reliability in Food & Beverage Manufacturing

Tetra Pak extends paper-based barrier packaging to high-speed packaging lines in Asia

Tetra Pak has taken another step forwards in sustainable packaging by expanding its innovative paper-based barrier technology to high-speed Tetra Pak® A3/Speed filling lines, with Maeil Dairies becoming the first producer globally to implement the solution for its soy milk. This milestone aligns with a broader shift across the food and beverage industry, where producers are accelerating the transition towards low-carbon, renewable packaging materials.

Developed to replace the aluminium foil layer used in aseptic cartons, the new paper-based barrier maintains comparable levels of food protection and shelf life. When combined with plant-based polymers derived from sugarcane, the Tetra Brik® Aseptic 200 Slim carton used with Maeil Soy Milk 99.9 product in South Korea achieved 87% renewable content and delivered a 26% reduction in package carbon footprint, as verified by the Carbon Trust.¹

A key milestone of this launch in Asia is that Maeil Dairies is the first producer globally to implement packaging material with the new paper-based barrier on a Tetra Pak® A3/Speed filling machine, demonstrating that the technology is now fully compatible with high-speed industrial production. The Tetra Pak® A3/Speed delivers high package outputs of up to 24,000 packages per hour with low operational costs, enabling large-scale deployment while keeping high food safety standards. Moreover, existing Tetra Pak® A3/Speed lines can be easily



Tetra Pak® A3/Speed filling machine upgraded with a high-frequency induction-heating sealing system, allowing producers to adopt the new packaging material without significant capital investment.

Tatiana Liceti, Executive Vice President, Packaging Solutions at Tetra Pak said: "Scaling sustainable packaging solutions should go hand in hand with operational efficiency. By bringing our paper-based barrier to high-performing Tetra Pak® A3/Speed packaging lines, we are offering beverage producers an opportunity to adopt low-carbon packaging solution based on renewable materials while maintaining food protection and cost-competitiveness." The new package for Maeil Soy Milk 99.9 marks the first use of Tetra Pak's paper-based barrier in the plant-based beverages category. Maeil Dairies, a longstanding innovator in the plant-based beverage market, sees the move as a natural continuation of its sustainability journey.

Inki Lee, Chief Operating Officer at Maeil Dairies commented: "Maeil Dairies has pioneered the domestic low-sugar

soy milk segment, establishing a leading position in the market. Introducing new packaging on our Soy Milk 99.9 line reflects our ongoing commitment to innovation and environmental responsibility. Our collaboration with Tetra Pak enables us to drive meaningful, forward-looking change that will benefit consumers and future generations alike."

The world's first aseptic beverage carton where the traditional aluminium foil layer was replaced with the innovative Tetra Pak paper-based barrier was launched in 2023, setting a new benchmark for sustainable packaging. This new technology simplifies the packaging material structure, reducing it from three to just two main components. This creates opportunities for recycling infrastructure, with downstream benefits such as maximising the recovery of paper content during the recycling of cartons delivering high-quality fibre and non-fibre fractions. Furthermore, by combining a paper-based barrier with plant-based polymers in the material coatings, the renewable content of the packaging is maximized, resulting in a significant reduction in carbon footprint¹.

¹Compared to the same reference package. Source: Carbon Trust™-verified Tetra Pak 'Carton CO2 Calculator' model version 12 (valid from 2026-01-01). Scope: cradle-to-grave measurement of a Tetra Brik® Aseptic 200 Slim carton with plant-based polymers in coating and paper-based barrier compared to a standard Tetra Brik® Aseptic 200 Slim package with aluminium foil and fossil-based polymers. Geography: global data.

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Refresco sets new standards with Sidel's EvoBLOW Laser



In Bruchsal, Germany, Refresco is making history with Sidel's latest breakthrough technology – the EvoBLOW Laser. Now in operation at Refresco for over one year, this industrially proven innovation is redefining PET bottle lightweighting while bringing unprecedented efficiency to packaging line operations.

A new standard at Refresco

When Refresco sought to lightweight their 1.5L PET bottle while maintaining consistent, top-quality performance, the unique new innovation for the task was Sidel's EvoBLOW Laser. Unlike traditional halogen-powered preform heating, this laser-powered solution enables precise, pinpoint preform heating, with full control and up to 36 heating lines along the preform.

The breakthrough precision of this laser-based technology enables a result that is not possible with today's halogen solutions. Gabriele Luna, Head of Indirect Procurement, shares "We've been able to lightweight the bottles while keeping

them robust and strong. For us, the real value is the level of control and stability this technology brings to everyday production.

"Innovations like this support Refresco's broader ambition to continuously reduce material use, increase recycled content and improve operational efficiency across our European footprint. What's important for us is that new technologies are scalable, industrially robust and ready for high-volume operations – that's where they start to make a difference."

Lightweighting, stability, ease

Lightweighting without sacrificing bottle performance is a significant advantage of the EvoBLOW Laser, and Refresco was able to reduce its material use by up to 15% without compromise. The technology also brings a new level of efficiency and way of working. It offers improved line operations, ease and efficiency, especially when working with recycled PET (rPET) – a significant

leap forward for sustainability. EvoBLOW Laser has been tested at Refresco with up to 100% rPET and produces bottles with 50% and 70% rPET with the same blowing recipe. It also saves energy during production.

Daniel Debruijn, PET Expert at Refresco shares: "Every day, I manage many changes of preform or material. With the traditional halogen oven, we often have to adjust the process multiple times. With the laser, you reload a new recipe, start the blower, and the bottle is right the first time. The stability and simplicity of process settings make unplanned stops stress-free for the operators. By eliminating warm up and cool down time, this stable technology is always ready, increasing productivity."

Innovation partnership

A strong partnership between Refresco and Sidel made this breakthrough possible. As a leading beverage solutions provider for retailers and Global, National and Emerging (GNE) brands, Refresco offered a highly dynamic, demanding testing environment and worked closely with Sidel to turn this innovation into a reality for the industry.

Coert Michielsen, Chief Supply Chain Officer at Refresco, shares: "We're very happy with the relationship we have with Sidel. They keep us sharp and challenge us constructively and they are available across more than 45 of our plants worldwide."

Marina De Barros, EVP Customer Management Europe & Central Asia, shares: "Trust is something Sidel and Refresco have built over time, across several innovations and shared projects. We are working side by side with Refresco, sharing and exchanging on market trends and business challenges. This guides us to continuously adapt and develop the technologies of the future."

By combining Refresco's operational expertise and scale with Sidel's technological development, this partnership demonstrates how innovation can move from concept to reliable industrial performance.

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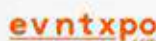


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The food safety gaps audits keep finding and how manufacturers can close them



of these findings. The first is the food safety plan itself. Many non-conformities relate to incomplete hazard analysis, poorly defined Critical Control Points (CCPs) or inadequate monitoring of CCPs. HACCP remains the backbone of food safety management, yet audits frequently reveal confusion around its practical application, particularly when it comes to validation and verification. Manufacturers may treat validation and verification as documentation exercises rather than as proof that controls performance effectively under real operating conditions. Clear process mapping, correctly positioned inspection points and robust data capture all help close this gap and support audit ready records across the seven principles of HACCP.



Ann-Kathrin Kuehle, Industry Insights Manager, Mettler-Toledo Product Inspection

Food safety standards and regulations across the globe are increasingly aligned. Global Food Safety Initiative recognised schemes such as BRCGS, International Featured Standards (IFS), Food Safety System Certification 22000 (FSSC 22000) and Safe Quality Food (SQF) share the same core foundation. These include Hazard Analysis and Critical Control Points (HACCP), Good Manufacturing Practice (GMP) and a demonstrable commitment to food safety culture. Yet despite this common framework, audits continue to uncover a strikingly consistent set of non-conformities year after year.

Data highlights the scale of the challenge: in 2024 alone, more than 100,000

non-conformities were raised under BRCGS Food Safety Issue 9, with manufacturers averaging just under five findings per audit. Around 59 percent of these findings fell under Section 4, covering site standards such as premises, equipment condition and hygiene, while Clause 4.11.1, which requires equipment and facilities to be maintained in a clean and hygienic condition, was the single most cited non-conformity in the 2024 to 2025 reporting period. These findings highlight a persistent gap between documented food safety systems and what can be consistently demonstrated during an audit.

While audit outcomes vary by sector, product type and geography, four recurring areas sit behind a large proportion

Hygienic design and GMP form the second major area of concern. Across BRCGS, IFS and SQF audits, hygiene, cleaning and sanitation consistently account for a high proportion of findings. Equipment that is difficult to clean, inspect or maintain increases both contamination risk and audit exposure. Preventive maintenance programmes are often in place, but corrective actions may not be clearly defined or verified for effectiveness. From an audit perspective, hygienic design is not just about materials and surfaces, but about demonstrating that equipment can be cleaned effectively, maintained predictably and returned to service without introducing new risks. Inspection systems designed for washdown environments and hygienic operation support this re-



quirement by reducing both operational and audit complexity.

Allergen management and physical contamination control represent the third recurring issue. Mislabeling remains one of the most serious risks facing food manufacturers, with incorrect or missing allergen declarations capable of triggering recalls even where the product itself is safe. Audits also continue to flag weaknesses in foreign body detection and verification. Checkweighing, metal detection, vision and x-ray inspection are increasingly seen as complementary tools, supporting both label accuracy and physical contamination control as part of a risk-based strategy.

Food safety culture underpins all technical controls. Audit data repeatedly highlights gaps in training, competency and supplier oversight. Weak raw material controls, limited understanding of food safety responsibilities and inconsistent adherence to procedures all increase the likelihood of non-conformities. Training, supported by clear processes and measurable controls, remains essential to embedding food safety into day-to-day operations.

Ultimately, audit trends show that most non-conformities are not isolated failures. They are symptoms of food safety systems that lack integration between people, processes and technology. When inspection technologies are selected and positioned based on risk, designed for hygienic operation and supported by meaningful data, they become a core part of the food safety management system rather than a last line of defense. In this way, audits move from repeatedly identifying the same gaps to confirming that effective controls are in place and working as intended.

For more information about food safety visit www.mt.com/food-safety-digital-pr

1. <https://www.youtube.com/watch?v=PXJJg9t-KrOI&feature=youtu.be>
2. <https://fsns.com/top-10-reasons-for-a-brc-audit-non-conformity-data/>
3. <https://fsns.com/top-10-reasons-for-a-brc-audit-non-conformity-data/>
4. <https://www.brcgs.com/media/zqxncsto/brcg-sannualreport2024-25-screen.pdf>
5. <https://fsns.com/top-10-reasons-for-a-brc-audit-non-conformity-data/>

FPS Food Process Solutions Partners with Quality Engineered Solutions to Strengthen Global Utilities Expertise



FPS Food Process Solutions (“FPS”), a global leader in turnkey food processing technologies, announces a strategic partnership with Quality Engineered Solutions (QES) to further expand its growing portfolio, with a strengthened focus on utilities-driven services.

With more than 25 years of experience, QES specializes in industrial ventilation projects for food and beverage processing plants as well as industrial manufacturing facilities. Their deep expertise and reputation for excellence significantly enhance FPS’s ability to deliver a fully integrated, global product offering.

Recognized as “utilities experts” within industrial engineering, QES brings extensive capabilities in ventilation infrastructure and MEP design for complex industrial and commercial environments. As part of this integration, Rick Allen joins FPS as Director of Global Utilities. In his new role, he will build a strong technical foundation for utilities processes and expand the company’s engineering depth as FPS continues to scale to meet increasing global demand.

“It was only a matter of time before adding QES as a valuable partner to enhance our engineering capabilities to new heights. With their expertise, they will strengthen our growth in food and industrial plant ventilation systems,” says Jeffrey Chang, President, FPS Food Process Solutions Corp.

About FPS Food Process Solutions

FPS Food Process Solutions is a global leader in turn-key food processing solutions, serving customers across six continents. Founded in 2010, FPS employs over 1,000 professionals worldwide and operates more than 1,280,000 ft² (119,000 m²) of space across 23 locations, including its Canadian headquarters, manufacturing facilities, and international sales offices. Through our subsidiaries and strategic partnerships, FPS delivers comprehensive, end-to-end processing solutions—providing a true “one-stop shop” for food processors around the world.

For more information, go to <https://www.fpscorp.ca/>

Packaging fish and seafood – with zero compromises!



Maximum product protection, extended shelf life, attractive design, efficient processability and, last but not least, benefits across the entire supply chain. Packaging fish and seafood safely, cost-effectively, and with efficient use of resources requires specialist know-how. SÜDPACK is one supplier with exactly that expertise. With its SKINPro® and Multifol® Extreme solutions, the renowned German film specialist offers two product families tailored to the specific requirements of these highly perishable, sensitive foods, delivering advantages in more ways than one.

Packaging fresh salmon fillets, tuna chunks, whole gilt-head bream, smoked trout, shelled crayfish, sharp-edged mussels, or even shrimp skewers may be part of your daily business – but it's anything but routine. Delicate surfaces, irregular shapes, sharp edges, and moisture all need to be managed, along with short shelf lives and stringent hygiene and food safety requirements. Especially in the seafood segment, where these factors can quickly drive up loss rates, packaging becomes an effective lever for economic profitability and competitiveness – and ultimately for reducing food waste.

Packaging engineered for delicate fish products ...

... means high-performance films that

can be processed efficiently into reliable packaging solutions and deliver the convenience consumers expect. To achieve this, skin, MAP, and vacuum packaging are the industry's go-to technologies. Whatever the format, it must deliver a secure seal even if the seal area is contaminated, resist punctures from heavy or sharp-edged products, and help extend shelf life with an integrated barrier function – ideally while using as little material as possible.

SKINPro® – the new generation of films with premium optics for the most demanding seafood applications

Developed by SÜDPACK specifically for shrimp skewers, salmon fillets, and whole fish, SKINPro® is an innovative, visually appealing vacuum skin packaging system built around a high-performance skin top web and matching bottom web designed to work together perfectly. The thin top web wraps around the product like a second skin, reliably handling even high product protrusions, sharp or pointed contours, and extreme undercuts. The product is held securely on the bottom web, preventing juicing and allowing flat, upright, or hanging presentation at the point of sale. Most importantly, the system helps extend the food's shelf life by removing oxygen, ensuring reliable sealing, and delivering barrier properties matched to the product. For the "counterpart," SÜDPACK offers a range of PE-, PP-,

and APET-based bottom webs designed specifically for SKINPro top webs and engineered to ensure reliable sealing. This also includes bottom webs made from the corresponding mono-materials that meet recyclability requirements. All SKINPro material structures run efficiently and reliably on skin packaging machines.

With premium optics and outstanding convenience, this packaging system also makes an impact at the point of sale: The wrinkle-free top web, with enhanced transparency and gloss, delivers maximum product visibility, a fresher appearance, and a premium look and feel. The clean, smooth, and easy opening behavior further reinforces the positive consumer experience.

Multifol® Extreme – high performance for extreme packaging applications

Multifol® Extreme is another proven flexible film that combines maximum functionality with minimal added weight. Due to its outstanding sealing performance and high puncture resistance, this SÜDPACK product family is ideally suited for MAP or vacuum packaging of fatty, protein-rich, or sharp-edged products such as fresh salmon fillets, white fish, or herring portions, as well as frozen goods.

In addition, the film is about 30% lighter than conventional PA/PE structures, delivering benefits across the entire logistics chain. Specifically, without any compromises on product protection, Multifol Extreme in a thickness of just 150 µm can replace a conventional thermoforming film with a thickness of 200 µm. Further material savings can be achieved by combining a Multifol Extreme base film with a lidding film from the same product family. Despite the material's low thickness, the perishable food stays well protected inside the package.

Another plus: This packaging concept also shines during the packaging process itself – with outstanding thermoforming properties that support deep draws, as well as good processability on standard thermoforming packaging machines.

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Rethinking Electrical Reliability in Food & Beverage Manufacturing

Grant Peagler National Business Development Manager at Siemens



Food and beverage manufacturers are under more pressure than ever to operate safely, reliably, and efficiently, often with aging infrastructure and fewer experienced resources. Downtime is costly, safety expectations are rising, and compliance requirements are becoming more demanding. Yet electrical distribution systems, which quietly support every process in the plant, are often still maintained using methods that haven't fundamentally changed in decades.

What's becoming clear across the industry is that electrical systems can no longer be treated as passive assets. They are active contributors to uptime, safety, and operational risk. As standards like NFPA 70B evolve and production demands increase, food and beverage leaders are rethinking how electrical maintenance fits into their broader operational strategy.

The Industry is Facing a Set of Common Challenges

Across food and beverage facilities, whether large multi-site producers or single-plant operations, the same challenges come up again and again.

1. Limited Visibility into Electrical Health

Most electrical failures don't happen without warning. Connections heat up, environmental conditions change, and components slowly degrade over time. The problem is that traditional maintenance approaches rely on periodic inspections that provide only snapshots. Between those inspections, conditions can change significantly without anyone knowing.

Without continuous visibility, teams are forced to react to symptoms rather than address causes. This reactive posture increases the likelihood of unplanned outages, safety events, and rushed decision-making.

2. Maintenance Teams Are Already Overextended

Food and beverage plants are feeling the impact of skilled labor shortages. Experienced electricians are harder to find, and existing teams are being asked to cover more assets with less time. At the same time, documentation and compliance expectations are increasing.

Every manual inspection, follow-up

measurement, and subjective judgment adds to the burden. When maintenance programs depend heavily on people remembering what to check and when to check it, consistency becomes difficult to sustain.

3. Compliance Expectations Are Rising

NFPA 70B has made it clear that condition-based maintenance is no longer optional; it's the preferred approach. This shift requires more than good intentions. It requires objective evidence that equipment has been evaluated, that risks are understood, and that maintenance decisions are based on actual condition rather than assumptions.

For many organizations, this creates anxiety. The standard isn't just asking what you did, but why you did it, and whether you can prove it.

4. Safety, Reliability, and Operations Are Still Siloed

In many plants, safety programs, reliability initiatives, and operational goals are managed separately. Each group may be doing good work, but when information isn't shared, opportunities are missed. Hazardous conditions may be identified late, reliability risks may go unaddressed, and maintenance work may be prioritized based on urgency rather than impact.

The industry is recognizing that these disciplines are deeply connected. Identifying hazardous conditions early isn't just a safety issue, it's a reliability and uptime issue as well.

5. Electrical Systems Are Often Left Out of Digital Strategy

Most food and beverage organizations have invested heavily in digital tools for production, quality, and supply chain visibility. Electrical distribution systems, however, are frequently left out of this transformation.

When electrical assets remain "dark,"

they can't contribute to better planning, risk reduction, or long-term lifecycle decisions. This disconnect limits the effectiveness of broader digital initiatives.

How Leading Organizations Are Responding

Forward-looking food and beverage manufacturers are addressing these challenges by changing how they think about electrical maintenance, not by adding more work, but by reducing uncertainty.

Turning Visibility into a Baseline, Not an Exception

Rather than relying solely on periodic inspections, organizations are adopting approaches that provide continuous awareness of electrical conditions. This allows hazardous conditions to be identified early, long before they escalate into failures or safety incidents. The goal isn't more data for its own sake; it's fewer surprises and better decisions.

Reducing the Burden on Maintenance Teams

Digital condition awareness shifts the burden from people to systems. When equipment condition is monitored continuously, maintenance teams spend less time chasing potential issues and more time addressing confirmed risks. This approach supports consistency even when staffing is limited and helps ensure that critical issues don't depend solely on individual experience.

Making Compliance Evidence a Byproduct of Operations

Instead of treating compliance documentation as a separate task, leading organizations are embedding it into everyday operations. Continuous condition records create a natural audit trail that supports NFPA 70B expectations without adding layers of paperwork. Maintenance decisions become easier to justify because they're grounded in observable behavior rather than assumptions.

Aligning Safety, Reliability, and Uptime

When hazardous conditions are identified early, safety and reliability objectives naturally align. Work can be planned more deliberately, risks can

be prioritized more accurately, and unplanned downtime becomes less frequent. This alignment strengthens trust between operations, maintenance, and safety teams—and supports better outcomes across the board.

Bringing Electrical Assets into the Digital Conversation

Treating electrical distribution as an intelligent platform rather than static infrastructure allows it to participate in broader digital strategies. Condition insight supports lifecycle planning, capital decisions, and long-term reliability improvements. It also elevates electrical systems from a background concern to a strategic asset.

Looking Ahead

The food and beverage industry is moving toward a future in which electrical maintenance is proactive, data-informed, and integrated into the overall operational strategy. This shift isn't about adopting a specific product; it's about embracing visibility, accountability, and foresight. Solutions like Siemens Sm@rtGear™ IE reflect this broader industry direction by enabling continuous condition awareness directly at the switchgear level. More importantly, they demonstrate how electrical systems can support safer work, stronger reliability, and more confident decision-making.

As expectations continue to rise, organizations that rethink electrical maintenance today will be better positioned to operate safely, reliably, and competitively tomorrow.

Grant Peagler Bio:

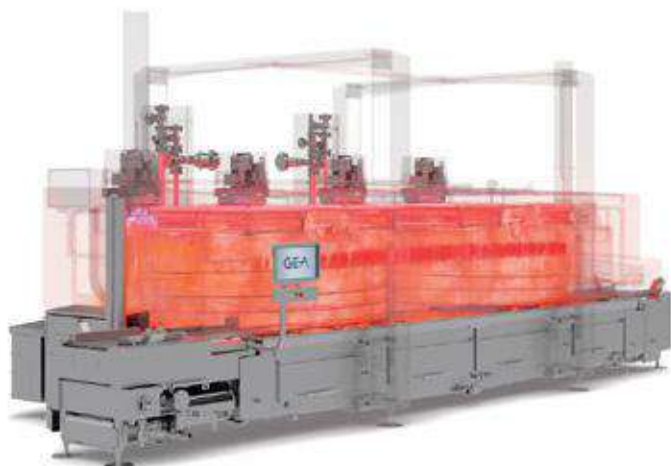
Passionate about delivering innovative solutions for the industrial sector, specifically in the food & beverage and semiconductor markets. As a national business development manager at Siemens, I work with a diverse team of experts to identify and pursue new opportunities, create and execute strategic plans, and foster long-term relationships with key stakeholders. I leverage my skills in data analytics, critical thinking, and teamwork to analyze market trends, customer needs, and competitive advantages, and to craft compelling value propositions and pitches. My mission is to drive industrial growth and transformation with Siemens, a global leader in engineering and technology. I value innovation, excellence, and customer satisfaction, and I strive to bring these values to every project and partnership.

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GEA expands CookStar portfolio with compact spiral oven for small to mid-sized food production



The GEA CookStar First offers uniform heat distribution and reduced cooking times compared to conventional ovens. Source: GEA



New GEA CookStar First – compact spiral oven for small to mid-sized food production. Source: GEA

GEA has introduced the CookStar First, a compact twin-zone spiral oven designed for small to mid-sized food production operations seeking to transition from linear to spiral cooking and want to benefit from the advantages. The new oven extends the GEA CookStar product family and addresses requirements for consistent product quality, controlled processing conditions, and improved resource efficiency from initial start-up. The machines are designed to create the 'home cooked' experience for a broad range of applications, including steam-cooked products, coated poultry, plant-based foods, baked or grilled items, and ready meals.

Uniform heat distribution and reduced cooking times

The new GEA CookStar First features

a twin-zone spiral configuration with integrated booster impingement. By combining horizontal and vertical air flow, the system achieves more uniform heat transfer across the conveyor belt. According to GEA, the core temperature variation across the belt is limited to approximately 1°C, compared with deviations of up to 6°C in conventional ovens. This uniformity enables cooking times to be reduced by 10 – 30 percent while maintaining consistent product color and internal doneness. Throughput can reach up to 1,700 kg per hour, and more stable thermal conditions contribute to yield improvements of up to three percent.

Focus on energy efficiency

Improving energy efficiency in spiral ovens requires a better oven balance. GEA engineers introduced a new intelligent active exhaust system, changes to the oven design, and adjustable product gates to the GEA CookStar First to minimize air leakage. These features work together to ensure consistent cooking conditions throughout the oven. More efficient water flow enables water reuse. Together, these features reduce energy and water consumption by up to 12%, earning the GEA CookStar First the "Add Better" label for resource efficiency, based on independently validated performance criteria.

Process transparency and digital connectivity

CookStar First is equipped with GEA SmartControl HMI, providing operators with access to real-time process data, alarm management, and a 24-hour timeline for tracking events and parameter changes. The system supports consistent operation and data-driven optimization and is compatible with GEA Insight Partner technology for remote diagnostics, service intervention, and maintenance planning.

Compact footprint and scalability

With an overall height of less than 3.9 meters, CookStar First is designed for installation in existing facilities, including brownfield sites with limited ceiling height. The oven's cooking technology supports a wide variety of products and process parameters.

Position within the CookStar range

The broader CookStar family includes the original CookStar model, which adds smoking functionality and higher capacity, as well as the CookStar Turbo for large-scale applications with capacities of up to 12,000 kg per hour and roasting capability. All CookStar systems share a common footprint and can be integrated into existing CookStar production lines.

Technical support and services

GEA supports the CookStar range with application expertise from food technologists, operator training, and a global service organization. These services are intended to support commissioning, process optimization, and long-term operational reliability.

GEA is one of the world's largest suppliers of systems and components to the food, beverage and pharmaceutical industries.

The international technology group, founded in 1881, focuses on machinery and plants, as well as advanced process technology, components and comprehensive services. For instance, every second pharma separator for essential healthcare products such as vaccines or novel biopharmaceuticals is produced by GEA. In food, every fourth package of pasta or every third chicken nugget are processed with GEA technology.



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Solving the Cracked Floor Dilemma: Advanced Drainage Solutions for Food Plants

Viking Kristjansson, Vice President Sales Engineering at Global Drain Technologies

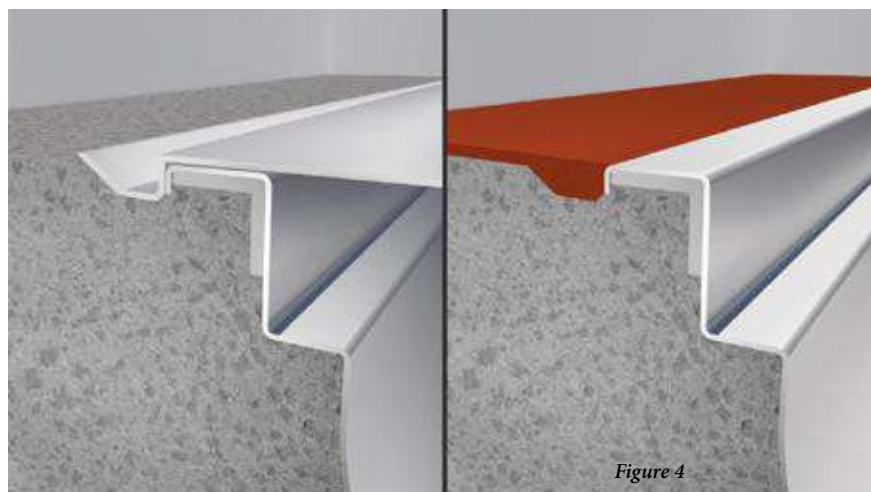


Figure 4

Cracked floors around drains are one of the most common and troublesome maintenance and sanitation problems in food production facilities. These cracks are more than an eyesore; they compromise the floor's structural integrity and create a breeding ground for contaminants that cause foodborne illnesses, costly product recalls, reputational harm, and disruptions to operations.

Once bacteria seep into porous concrete and cracks, even the strongest disinfectants struggle to eliminate them, as microbes burrow deep, linger, and eventually re-emerge, risking repeated contamination. Fortunately, these challenges can be fully addressed with a well-designed, modern drain system.

It begins with a robust drain design and solid construction, but true durability is achieved through a holistic approach that addresses all three major flooring components:

- The concrete itself
- The protective floor coating
- The drains integrated into the system

This coordinated method relies on custom-engineered hardware and superior installation techniques, creating a strong structural connection between concrete

and drain as well as lasting, seamless adhesion between floor coating and drain components.

The Challenge

Drains represent the most vulnerable point in any food plant flooring, as they are regularly subjected to vibrations, impact, heavy rolling loads, and harsh fluids.

The Impact of Vibration and Heavy Loads

Forklifts, mechanized equipment, and daily operations place considerable stress on these systems. Most legacy drains flex under this pressure, which, over time, creates alternating cycles of tension and compression. When a drain flexes one direction, it pulls away from the surrounding flooring, forming gaps and cracks. Flex in the opposite direction, and it pushes against the surrounding concrete and coatings, leading to weakening and damage.

The Effects of Heat and Chemicals

Another persistent threat to drains is aggressive cleaning regimens. Repeated use of hot water and harsh chemicals degrades both concrete and coatings. Extended temperature swings and chemical attacks erode the floor and break critical bonds, ultimately leading to cracks.

Choosing the Right Drain

Modern drain designs directly address these pain points through smarter engineering, stronger materials, and better floor integration. The process starts with picking the right drain for the application.

Why Choose Stainless Steel

Stainless steel should be non-negotiable. Steer clear of outdated concrete trenches, they are inefficient and prone to delamination. Concrete's porous nature traps bacteria, making effective sanitation nearly impossible.

Even for underground piping, stainless steel proves superior. While CPVC offers some durability, it cannot withstand severe heat. For instance, pouring boiling water into a stainless-steel drain leaves the drain intact, but CPVC pipes below may soften or collapse. To prevent this, opt for stainless steel piping underground, or at the very least, use it for the first 40-50 feet in hot water areas before transitioning to CPVC further down the line.

Picking the Right Drain Type

Choosing the right drain for each area of a food processing plant is key to ensuring efficiency, safety, and hygiene. Different areas need specific drainage solutions, so understanding the options is essential.

The three primary drain types, area drains, grated trench drains, and slot drains, each bring distinct advantages and drawbacks.

Traditional area drains work well for small spaces but struggle in larger areas. They rely on extensive underground piping, increasing costs, complicating maintenance, and raising the risk of blockages and bacterial growth. For example, a 4,800-square-foot floor plan might require 244 feet of hidden piping with area drains. Another major issue is the need for floors to slope in four directions around each drain, making construction more challenging and resulting in uneven



Figure 2: A stainless steel Angle offers vital structural support, preventing flex in the drain system under load.

surfaces that hinder foot and wheeled traffic.

Grated trench drains once dominated but present their own concerns. Grates are heavy, awkward to clean, trap debris and bacteria, and are prone to chipping and corrosion. Additionally, they can be safety hazards for workers' feet and equipment, as uneven or damaged grates can cause trips, slips, or entrapment of footwear, while wheels on carts or machinery may get caught, leading to accidents and damage.

Slot drains now lead the way in food sector upgrades. Their single, slender slot eliminates the need for grates, dramatically reducing places microbes can hide and vastly simplifying cleaning. Besides hygiene advantages, slot drains increase safety, enhance the visual appearance of a

facility, and help foster a culture of cleanliness.

Resilience to Load and Vibration

One of the key advantages of slot drain design is its ability to minimize floor cracking by more effectively managing load and vibration.

Unlike traditional grated drains, the narrow profile of slot drains distributes weight and impact across the entire system, transferring more of the load from the drain to the surrounding floor. This design minimizes stress on both the drain and its connection to the floor, providing enhanced durability and stability.



Figure 1

Additionally, slot drains also resolve common problems found in grated drains, like misaligned or damaged grates that can shift and bounce, increasing the wear and tear caused by heavy loads and movement.

Advanced Drain Design Features

Load Class Rating

Slot drains designed for heavy-duty applications, such as supporting forklift traffic in industrial environments, must adhere to strict load capacity standards. Typically, a minimum Load Class rating of E, capable of handling up to 550 psi, is required.

Selecting drains with the correct load class is especially critical in areas exposed to heavy traffic, such as forklifts with hard pneumatic tires or heavy carts. Using drains not rated for these loads can result in flexing, which leads to delamination and cracking of the surrounding floor system.



Figure 3: The 10,000 Series FoodSafe Slot Drain features 3/8" stainless steel embeds, welded to the drain and tied into rebar, creating a solid, unified drain-floor structure for long-term stability under

Structural Reinforcement

Structural strength is everything. High-quality slot drains incorporate advanced reinforcement features to withstand heavy loads and vibrations (see Figure 2).

- **Angles:** The strongest slot drains are reinforced with stainless steel angles. These angles add rigidity, preventing flexing and maintaining the drainage system's strength.
- **Embeds:** Another critical feature is the use of steel embeds, metal components welded to the drain that tie into the floor's rebar and are encased in concrete during pouring. This design solidifies the connection between the drain and the flooring substrate, creating a unified structural unit that resists shifting and ensures long-term stability.

Bonding Floor Coating and Drain

Another important feature of advanced drain systems is that they are designed to ensure a tight and lasting bond between the floor coating and the metal drain.

- **Surface Area:** Proper adhesion of the floor coating to the metal drain is achieved through a design featuring a lip that extends perpendicularly into the floor, significantly increasing the surface area for the coating to adhere to the metal drain. This ensures a strong and durable bond.
- **Surface Preparation:** The lip area undergoes specialized surface

treatments, including primers and mechanical processes, to enhance adhesion. Since stainless steel's chromium oxide layer naturally resists bonding, these proven methods are essential for achieving a permanent, seamless attachment between the floor coating and the stainless steel surface.

Ensuring a Seamless Installation

Cracks around drains often result from substandard installation practices. The following best practices can help avoid these issues:

Constructing the Floor

- **Slopes:** Grade floors properly to prevent water pooling, extending the life of both the floor and coating while improving sanitation and reducing cleaning effort.
- **Keyway:** As shown in Figure 4, the keyway is crucial for proper installation. It is a groove in the concrete where the drain lip sits. If the keyway is too narrow to allow the floor coating to flow in during installation, the concrete will press directly against the lip of the drain. This creates a weak point where fluids can seep in, causing contamination. On the other hand, if the keyway is too wide, it compromises the structural integrity of the floor coating that will fill the space.

Installing Floor Coating

Proper installation of the floor coating is just as important as the floor construction. Pay attention to two key steps:

- **Floor Preparation:** The concrete substrate, including keyways, must be thoroughly cleaned and free of dust and debris to allow the floor coating to adhere properly.
- **Priming:** Both the concrete surface and the stainless steel lip of the drain system must be primed. This ensures the floor coating bonds effectively to both surfaces, providing a durable seal.

In addition to preparation and priming, one of the most frequent causes of premature floor failure is the application of insufficient coating thickness.

While manufacturers specify minimum thicknesses for optimal performance, installers sometimes apply less material than required, whether to save on costs or due to time pressure. This shortcut can lead to weak spots, poor adhesion, and early delamination, especially in high-traffic or wet areas. To ensure long-term durability, project specifications should clearly state the required coating thickness, and quality control checks during installation should verify compliance.

Addressing these critical steps during installation significantly reduces the risk of cracks and ensures a long-lasting, reliable floor.

The Importance of Clear Specifications

Many common floor and drain failures can be prevented at the design stage. Including detailed requirements for floor preparation, keyway dimensions, coating thickness, and drain selection in construction documents ensures that best practices are followed during installation. Early collaboration between engineers, architects, and installers is essential for long-term success.

Maintenance Matters

A truly durable system relies on robust design, careful installation, and equally important, easy ongoing care. Advanced drain systems are designed to make cleaning extremely quick, easy, and effective, with accessories that simplify the process. Regular cleaning removes contaminants and prevents caustic substances from damaging floor coatings, protecting the facility and its operations.

Purpose-built cleaning tools have made maintaining slot drains more efficient. Paddle tools quickly clear debris, while brush tools provide a thorough scrub for detailed cleaning. High-performance tools, such as the Slot Dog from Food Safe Drains, a leading provider of hygienic drainage solutions, combine high-pressure water, foaming, and precision nozzles to effectively remove biofilms, grease, and tough residues. The Slot Dog is a specialized cleaning tool engineered for slot drains, featuring a flexible brush and integrated spray system that delivers targeted,

high-pressure cleaning action along the entire drain length.

Well-designed slot drains provide an uninterrupted pathway, allowing cleaning tools to easily slide along the length of the drain. Unlike many drains on the market that feature obstructive tabs every 18 inches, trapping bacteria and complicating maintenance, advanced slot drains eliminate these barriers.

The Slot Hog from Food Safe Drains, a quick-connect funnel tool, goes a step further by allowing hoses to hook directly to the drain, efficiently directing large volumes of hot and caustic liquids into the drain without contact with the floor coating. This innovative design effectively prevents harmful substances from flooding, pooling, or damaging floor coatings during processes such as CIP procedures or brewery tank cleanings.

A Holistic Approach to Durable Floors

A truly resilient and hygienic food plant floor is not the result of a single decision, but the outcome of a comprehensive strategy that brings together advanced materials, precise engineering, expert installation, and disciplined maintenance. The persistent problem of cracked floors around drains can be overcome by treating the floor system as critical infrastructure, worthy of the same attention as any other essential equipment in the facility. By prioritizing robust stainless steel drain designs, specifying clear and enforceable requirements for floor preparation and installation, and committing to regular, effective cleaning with purpose-built tools, operators can break the cycle of recurring failures and costly repairs.

This holistic approach safeguards the structural integrity and cleanliness of the facility and demonstrates a deep organizational commitment to food safety, operational excellence, and brand protection. In the end, investing in the right drainage system and best practices is not just about solving today's maintenance headaches; it's about building a foundation for long-term success, consumer trust, and a culture where food safety truly starts from the ground up.

Future-Ready Equipment for Scalable Food Service Models

Industry Perspective – Culinova (Manufactured by Real Chef Pvt. Ltd.)



Mr. Rajat Mahanjan, Founder Real Chef

1. Scalability Is the New Design Benchmark

Modern food service models—QSR chains, cloud kitchens, food courts, and hotel groups—are built to scale rapidly. Equipment today must support replication across multiple locations with the same performance and output, which is where digitally controlled, standardized equipment becomes critical.

2. Digital Controls Enable Replicable Operations

Future-ready kitchens depend on digitally controlled ovens and grillers that deliver consistent results regardless of location or operator skill. Culinova's deck ovens, pizza ovens, and grillers are designed with fully digital control panels to ensure uniform cooking parameters across expanding kitchen networks.

3. Automation Reduces Dependency on Skilled Manpower

As food service businesses scale, availability of skilled kitchen staff becomes a challenge. Automation embedded in equipment helps reduce manual intervention, allowing even newly trained staff to operate efficiently—supporting faster onboarding and smoother expansion.

4. Built for High-Volume, Multi-Shift Operations

Scalable food service models demand equipment that can perform reliably across long operating hours and multiple shifts. Culinova equipment, manufactured using robust stainless steel construction, is engineered for durability and consistent performance in high-stress commercial environments.

5. Safety & Compliance as Growth Enablers

As brands grow, compliance and safety become non-negotiable. BIS-certified equipment with high-end safety components ensures operational continuity, reduces risk, and builds confidence with investors, consultants, and regulatory authorities—making expansion smoother and safer.

6. Standardisation Across Formats & Locations

Whether it's a mall outlet in Mumbai or a highway kitchen in Punjab, scalable models require uniform equipment standards. Future-ready equipment enables centralised SOPs, predictable outputs, and easier quality audits across geographies.

7. Energy Efficiency for Sustainable Scaling

With power costs rising, especially in large-format kitchens, energy-efficient equipment plays a vital role in scalability. Digitally regulated heating systems help optimise energy usage, delivering long-term cost benefits without compromising output.

8. Designed for Indian Kitchens, Ready for Global Standards

Manufactured in India by Real Chef Pvt. Ltd., Culinova equipment is built for Indian operating conditions—voltage fluctuations, heavy-duty usage, and diverse menus—while meeting global benchmarks in design, hygiene, and safety.

9. Future-Ready Means Upgrade-Friendly

Digitally enabled equipment provides a foundation for future integration—such as performance monitoring, diagnostics, and predictive maintenance—helping operators reduce downtime and improve lifecycle value as they scale.

10. Equipment as a Strategic Growth Partner

In scalable food service models, equipment is no longer just a utility—it becomes a strategic enabler of growth. Future-ready equipment supports speed, consistency, compliance, and profitability, helping brands expand confidently and sustainably.

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Thermoformed Solutions Designed to Maximize Market Opportunities



Amcor, a global leader in developing and producing responsible packaging solutions, is continuing to invest in its thermoforming capabilities to meet strong demand from the ready meals and dairy foods sectors.

According to Euromonitor, the market has a steady growth rate of around 5%, reflecting ongoing consumer requirements for reliable and affordable food packaging solutions. The report says that for many brands thermoformed packaging has become a 'strategic asset', helping them to 'extend shelf life (by up to 50%), cut waste and deliver convenience without compromising sustainability'.

The Amcor thermoformed portfolio has been developed in line with these benefits, offering a range of solutions for a wide variety of products and applications, with features such as recycle-ready designs, extended shelf-life

and lightweight constructions, as well as high-quality decoration options to create effective brand identity and on-shelf impact.

"The convenience food sector is very competitive, and the right packaging can play an important role in terms of ensuring product quality, creating a strong brand image and encouraging consumer loyalty," said Katrina Burrett, product line director, containers & reusables, Amcor Global Rigid Packaging Solutions. "Our extensive choice of standard packs, as well as our ability to develop customized solutions, mean we can tailor solutions to meet the precise needs of individual customers."

The Amcor portfolio includes a variety of round cups, pots and multi-component trays, available with inserts and in different heights and shapes to offer a versatile solution for many different

applications. For products requiring an extended ambient shelf-life, an EVOH barrier can be incorporated to provide effective protection from oxygen ingress and preserve food freshness.

Amcor's technical expertise is able to create lightweight containers that still deliver excellent long-term performance and durability, while their mono-material construction means they are recycle-ready and can be recycled in countries where the appropriate collection and recycling infrastructure is in place. For extended shelf-life products, the EVOH barrier is accepted in recycling streams.

Premium decoration options include pre-printed lids which use a patented printing process that is able to print over the rim for all-over coverage. Another innovation is thermoformed in-mold labelling for tubs, where pre-printed labels are applied to a container during the thermoforming process. This allows intricate, multi-colored designs to be incorporated to achieve a better level of finish and greater coverage than with direct printing.

"Our latest solutions aim to support customers' sustainability objectives while delivering attractive, functional and brand-enhancing packaging," said Katrina Burrett.

www.amcor.com

Cosmo Films Launches Anti-Fog Transparent BOPET Lidding Films for Advanced Food Packaging Applications

Cosmo Films, a global leader in specialty films, has announced the launch of its Sealable Peelable Transparent Anti-Fog BOPET (PET) Lidding Film, engineered to enhance product visibility, extend shelf life and improve packaging performance across refrigerated and fresh food categories.

Condensation remains a key challenge in food packaging, especially in cold-chain environments where temperature variations lead to moisture build-up inside packs. This fog formation can obscure the product's appearance and impact consumer perception at the point of sale. Cosmo Films' new anti-fog PET lidding

film incorporates an advanced coating on the sealable side that delivers an excellent cold antifogging effect, preventing droplet formation and maintaining consistent clarity throughout storage and display.

Designed for performance and versatil-



ity, the film offers low sealing temperature, ensuring compatibility with high-speed packaging lines while optimizing energy efficiency. It is sealable and peelable, enabling strong yet easy-open seals without compromising pack integrity. The film is microwaveable, adding convenience for ready-to-eat and prepared food applications. Importantly, it enhances shelf life by 4–5 days for fresh salads and vegetables by helping maintain internal pack conditions. The lidding film is compatible with a wide range of substrates including PP, HIPS, PET (APET, CPET), PVC and LDPE containers, making it suitable for diverse packaging formats. In line with sustainability goals, the film is recyclable in the mainstream recycling stream when used with PET trays.

Commenting on the launch, Mr. Kulbhusan Malik, Global Business Head, Cosmo Films said, “In food packaging, visibility is directly linked to consumer trust and purchase decisions. With our Anti-Fog Transparent BOPET Lidding Films, we are addressing a key pain point for brands by combining condensation control with superior clarity, strong sealing performance and ease of use. This launch reinforces our commitment to expanding our specialty portfolio with high-performance, value-added solutions that support both product protection and brand differentiation.”

The new lidding films are suitable for a wide range of applications such as refrigerated and frozen foods, prepared fruits, fresh-cut vegetables, ready-to-eat meals, bakery items, dairy products including yogurt and butter, pasta, fresh meat and salami. It also performs effectively in fresh produce packaging for vegetables, herbs, berries, fruits and mushrooms—categories where clear visibility and freshness perception are critical to purchase decisions.

This launch further strengthens Cosmo Films’ specialty product portfolio, aligned with its strategic focus on innovation-led growth and higher value-added offerings. With continued investments in R&D and advanced film technologies, the company remains committed to delivering solutions that enhance shelf life, improve packaging efficiency and elevate consumer experience.

Markem-Imaje Manufacturing Site in Keene, NH Earns 2025 EcoVadis Gold Sustainability Rating



Markem-Imaje, a Dover Corporation subsidiary, global provider of end-to-end supply chain solutions and industrial marking and coding systems, announced today that its Keene, New Hampshire manufacturing site has earned a 2025 EcoVadis Gold Sustainability Rating. The Gold rating places the Keene site in the top 5 percent of rated companies worldwide for overall sustainability performance. The recognition continues a strong multiyear EcoVadis track record for the Keene facility, which has achieved scores of 68 in 2021, 70 in 2022, and 80 in both 2024 and 2025. The most recent assessment highlights further progress in the Environment and Sustainable Procurement categories, reflecting the company’s focus on responsible manufacturing practices and a more sustainable supply chain.

Continuous improvement in Keene

“EcoVadis gives us an independent view of how we are performing and where we can keep improving,” said Shawn Marsh, Global Director of Quality and EHS at Markem-Imaje. “Maintaining an overall score of 80 shows how committed our Keene team is to operating a safe, efficient, and responsible manufacturing site that supports our customers and community for the long term.”

EcoVadis is a globally recognized sustainability rating platform that evaluates companies on four key themes: Environment, Labor and Human Rights, Ethics and Sustainable Procurement. Its methodology is used by multinational companies to assess and compare the sustainability performance of their suppliers.

The Markem-Imaje Keene site serves as a flagship manufacturing location for the company, producing high-performance industrial printers and wax-based Touch Dry® inks that are used by customers around the world for quality, sustainable case and product coding. The company views the EcoVadis assessment as both validation of existing efforts and a roadmap for future improvements in its New Hampshire operations.

<https://www.markem-imaje.com/about-us/sustainability/corporate-social-responsibility>

Cosmo Speciality Chemicals Announces Launch of Advanced Masterbatches Portfolio



Cosmo Speciality Chemicals, a subsidiary of Cosmo First Limited, has announced the launch of its expanded range of high-performance masterbatches, further strengthening its Specialty Chemicals portfolio and reinforcing its presence in value-added polymer solutions.

The newly introduced portfolio includes CosmoWhite, a premium portfolio of advanced white masterbatches for polypropylene (PP) and polyethylene (PE). Developed with high concentrations of Titanium Dioxide (TiO₂), CosmoWhite provides exceptional opacity, brightness, UV protection, and thermal stability. These qualities ensure reliable

performance in demanding applications such as BOPP films, blown films, extrusion coating, injection moulding, non-wovens, raffia, and pail containers.

In addition to this, Cosmo Speciality Chemicals has also unveiled CosmoAdd which is a complementary portfolio of additive masterbatches engineered to enhance processing efficiency, product durability, and end-use functionality. Tailored for flexible packaging in BOPP, CPP, and blown film applications, the CosmoAdd portfolio encompasses a wide range of solutions including cavitating agents (inorganic and organic), antiblock additives (inorganic and organic), antistatic and slip additives, polymer processing aids (standard and PFAS-free), antioxidants, clarifiers, matt compounds, and specialized solutions for synthetic paper. Additionally, CosmoAdd addresses industry challenges, reinforcing its role as a comprehensive and forward-looking portfolio for modern packaging needs.

Commenting on the launch, Mr. Raj Sharma, Business Head, Cosmo Speciality Chemicals, said, "Our expanded masterbatch portfolio reflects our focus on innovation-led specialty solutions.

We remain committed to delivering high-performance, sustainable, and application-specific masterbatches that enhance both functionality and aesthetics for our customers across the polymer and packaging industry. Together, CosmoWhite and CosmoAdd embody Cosmo Speciality Chemicals' commitment to delivering engineered excellence and practical innovation, ensuring manufacturers achieve superior product quality, efficiency, and sustainability."

This development is closely aligned with Cosmo First's strategy of expanding its Specialty Chemicals vertical, which has been steadily scaling alongside its core specialty films business. Initiated in FY21, the specialty chemicals division operates with strong R&D capabilities and continues to build a growing presence in external markets.

With this launch, Cosmo Speciality Chemicals reinforces its position as a trusted Indian manufacturer of innovation-driven masterbatch solutions, offering tailored formulations backed by rigorous research, advanced technology, and sustainable manufacturing practices.

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FSSAI urges states to expedite recruitment and leverage data-driven surveillance



The Food Safety and Standards Authority of India (FSSAI) has urged States and Union Territories to strengthen on-ground food safety enforcement and accelerate the recruitment of food safety personnel. Speaking at the 49th meeting of the Central Advisory Committee held in Gangtok, Rajit Punhani, CEO of FSSAI, emphasized the need for stronger inspections and monitoring systems to ensure safer food for consumers across the country.

During the meeting, officials were asked to prioritize risk-based inspections and enhanced surveillance of high-risk food categories such as milk and milk products, edible oils, spices, and honey. Punhani also called for strict action against non-compliant Food Business Operators (FBOs) and directed states to conduct special enforcement drives while sharing regular updates on regulatory actions. He highlighted that transparent enforcement and public disclosure of outcomes are essential to deter violations and strengthen consumer confidence in the food system.

The meeting also focused on improving food safety governance through data-driven surveillance systems, faster complaint resolution mechanisms, and better coordination between FSSAI and state authorities. Discussions included streamlining licensing and registration processes to support ease of compliance while maintaining regulatory oversight. The event brought together over 100 officials from states, industry, laboratories, and research institutions, reaffirming the collective commitment to building a stronger, enforcement-led and consumer-centric food safety ecosystem in India.

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dsm-firmenich strengthens

HMO offering in Asia with new regulatory approvals



dsm-firmenich, innovators in nutrition, health, and beauty, today announces the successful expansion of its human milk oligosaccharide (HMO) portfolio in China, Malaysia, and Thailand. Its 3'-sialyllactose (3'-SL) sodium salt ingredient has been approved for use in early life nutrition in the markets, alongside the authorization of 2'-fucosyllactose/difucosyllactose (2FL/DFL), lacto-N-tetraose (LNT), and 6'-sialyllactose (6'-SL) sodium salt in Malaysia and Thailand. Among the first companies to secure access for these HMOs in these countries, dsm-firmenich continues to lead the expansion of HMO solutions across key growth markets.

The Chinese National Health Commission (NHC) approved the use of 3'-SL—commercially known as GLYCARE® 3SL 9001—as a nutrition fortifier for inclu-

sion in infant formula, formula for older infants and young children, formulated milk powders for children, and foods for special medical purposes for infants. The decision followed comprehensive technical reviews by the Ministry of Agriculture and Rural Affairs (MARA) and the China National Center for Food Safety Risk Assessment (CFSA). In Malaysia, the Ministry of Health (MOH) also approved 3'-SL sodium salt, as well as 2FL/DFL (GLYCARE® 2FL/DFL 8001), LNT (GLYCARE® LNT 8001), and 6'-SL sodium salt (GLYCARE® 6SL 9001) as optional ingredients in infant formula, follow-on formula, and formulated milk powder for children. The same four HMO products were also approved by the Thailand Food and Drug Administration for use in infant formula, follow-up formula for infants and young children, powdered milk substitutes,

and milk-based beverages.

Together, these milestone achievements build on dsm-firmenich's previous approvals for 2'-fucosyllactose (2'-FL) and lacto-N-neotetraose (LNNt) in China and Malaysia. This means that HMOs from all three major structural classes—fucosylated, sialylated, and neutral core—are now available in these markets and can be used in combination with other approved HMOs, offering manufacturers enhanced flexibility to create differentiated HMO blends tailored to local nutritional needs. Emerging scientific evidence indicates that combining HMOs with different structures may help bring the gut microbiota composition of non-breastfed infants closer to that of breastfed infants and support a broader range of health benefits.^{1,2,3}

"These recent regulatory approvals in Asia reflect our continued commitment to expanding global access to high-quality, science-backed HMOs," remarks Annette Lau, Global Regulatory Affairs Senior Manager ELN & MN at dsm-firmenich. "With a growing footprint across the Asia-Pacific region—including recent milestones in India, Indonesia, Australia and New Zealand—we are broadening the availability of different types of HMOs in key markets. By doing so, we're enabling manufacturers to develop more advanced early life nutrition solutions that more closely align with the composition of human breast milk—the gold standard for infant nutrition—and support gut health, immune development, and overall wellbeing from infancy to early childhood."

FSSAI Urges States to Intensify Checks on Food Adulteration Ahead of Festival

Ahead of the Holi festival, the Food Safety and Standards Authority of India (FSSAI) has directed state food safety commissioners to step up surveillance and enforcement to prevent adulteration in commonly consumed festive foods. The food regulator has particularly asked authorities to monitor products such as milk and milk-

based items, sweets, snacks, and edible oils, which see a sharp rise in demand during the festive season.

In a communication to state officials, FSSAI noted that consumption of items like ghee, khoa, paneer, sweets, namkeen, and other savoury foods increases significantly during Holi celebrations.

This spike in demand can create opportunities for adulteration and the sale of substandard products in the market, posing risks to consumer health.

To address the issue, FSSAI has instructed states to launch a "Holi Anti-Adulteration Drive - 2026", directing enforcement teams to carry out inspections and collect food samples from key markets and production centres. The drive will focus on identified hotspots and sensitive locations to ensure that only safe and quality food products reach consumers during the festive period.

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Greening the Supply Chain: Transforming Operations for a Sustainable Industrial Future

Aakansha Singh

The Growing Need for Sustainable Supply Chains

As environmental concerns continue to intensify worldwide, industries are increasingly recognizing the need to adopt sustainable operational models. Rising levels of pollution, climate change, deforestation, and the depletion of natural resources have pushed businesses to rethink how products are designed, manufactured, transported, and disposed of. In this evolving landscape, Green Supply Chain Management (GSCM) has emerged as a powerful strategy that integrates environmental responsibility into every stage of the supply chain. By combining efficiency with sustainability, GSCM enables organizations to reduce ecological impact while maintaining competitiveness and operational effectiveness.

Environmental degradation has also had profound consequences for public health and ecosystems. Issues such as air and water pollution, greenhouse gas emissions, and improper waste management have contributed to serious health challenges, including respiratory diseases, cardiovascular conditions, and waterborne infections. These growing environmental and social pressures have encouraged governments, industries, and consumers to demand more responsible production and logistics systems. As a result, businesses are increasingly embracing green supply chain principles to ensure sustainable growth while addressing global environmental challenges.

Understanding the Concept of Green Supply Chain Management

Green Supply Chain Management refers to the integration of environmentally conscious practices into traditional supply chain activities, including product design, sourcing, manufacturing, logistics, and end-of-life product management. Unlike conventional supply



chain systems that primarily focus on cost efficiency, product quality, and service performance, GSCM expands the framework by incorporating sustainability and environmental protection as core objectives.

At its foundation, GSCM is guided by the principles of reduce, reuse, recycle, reclaim, and degradable materials. These principles encourage organizations to minimize resource consumption, reduce waste generation, and adopt materials that are environmentally friendly. By aligning operational strategies with ecological goals, companies can create supply chains that not only deliver economic value but also contribute to environmental preservation and long-term sustainability.

Sustainable Product Design and Development

One of the most critical elements of Green Supply Chain Management lies in the design and development of environmentally responsible products. Sustainable product design focuses on minimizing environmental impact throughout a product's entire lifecycle, from raw material extraction to disposal or recycling. This approach encourages the use of safer materials, reduced energy consumption, and manufacturing processes that generate minimal waste or emissions.

The concept of Design for Environment (DfE) plays a central role in this process. It emphasizes developing products that

are both economically viable and environmentally safe, ensuring that they do not pose risks to human health or the ecosystem. By incorporating sustainability at the design stage, companies can significantly reduce their environmental footprint while also meeting the growing demand for eco-friendly products.

Cleaner Production and Manufacturing Processes

Manufacturing processes are another critical area where green supply chain strategies can deliver meaningful impact. Environmentally responsible production involves reducing energy consumption, minimizing waste generation, and controlling emissions released into air and water systems. Industries are increasingly implementing lean manufacturing techniques to improve efficiency while lowering environmental impact.

Lean production not only reduces excess inventory and operational waste but also contributes to lower energy use and improved resource utilization. By adopting cleaner production technologies and sustainable process management, companies can create products that meet consumer expectations while maintaining environmental responsibility.

Sustainable Supplier Partnerships

The effectiveness of a green supply chain often depends on the sustainability practices of suppliers and business partners. Organizations are increasingly evaluating vendors based on their environmental performance, including their commitment to waste reduction, energy efficiency, and responsible sourcing. Selecting partners who share similar sustainability goals ensures greater alignment across the entire supply chain.

Collaborating with environmentally responsible suppliers also enables companies to integrate green practices during the early stages of product development.

This collaborative approach strengthens long-term partnerships while helping businesses build resilient and sustainable supply networks.

Optimizing Logistics for Environmental Efficiency

Transportation and logistics play a significant role in the environmental impact of supply chains. Optimizing logistics systems to reduce fuel consumption and emissions is therefore a key component of Green Supply Chain Management. Companies are increasingly focusing on strategic supplier location planning, reducing reliance on air freight, and maximizing the use of rail and maritime transport, which are generally more energy-efficient.

Advanced fleet management practices further enhance sustainability in logistics operations. Techniques such as route optimization, vehicle sharing, and back-hauling—where returning vehicles carry goods instead of traveling empty—help reduce fuel consumption and carbon emissions. Additionally, many organizations are transitioning toward electric and alternative fuel vehicles, contributing to cleaner transportation systems.

The Role of Eco-Friendly Packaging

Packaging is another critical area where green supply chain strategies can deliver substantial environmental benefits. Sustainable packaging solutions focus on minimizing material usage while ensuring product protection during transportation and storage. Businesses are increasingly shifting toward recyclable, reusable, and biodegradable materials to replace conventional plastic packaging.

Intelligent packaging designs, such as using appropriately sized boxes and lightweight materials, help reduce transportation emissions and packaging waste. These innovations not only reduce environmental impact but also improve supply chain efficiency and cost-effectiveness.

Reverse Logistics and Resource Recovery

An essential component of Green Supply Chain Management is reverse logistics, which involves the recovery, reuse, recycling, or remanufacturing of products and materials after their initial use.

Instead of treating returned or discarded products as waste, reverse logistics allows businesses to recover valuable materials and reintroduce them into the production cycle.

By redesigning packaging and products to facilitate recycling and reuse, companies can significantly reduce landfill waste and resource consumption. Effective reverse logistics systems also reduce transportation-related emissions and contribute to a circular economy where resources are utilized more efficiently.

Leveraging Digital Technologies for Green Operations

Information technology plays a crucial role in supporting green supply chain initiatives. Digital systems enable companies to reduce paper consumption by automating documentation processes such as invoicing, order management, and payment transactions. Electronic Data Interchange (EDI) and integrated supply chain management platforms streamline communication and reduce administrative inefficiencies.

Advanced technologies, including data analytics and supply chain management software, also allow organizations to monitor environmental performance, optimize resource use, and improve decision-making. These digital solutions help companies track sustainability metrics and identify opportunities to further reduce their carbon footprint.

Sustainable Infrastructure and Green Facilities

In addition to operational changes, organizations are increasingly adopting sustainable building and infrastructure practices. Green facilities incorporate energy-efficient lighting systems, water recycling technologies, and environmentally friendly construction materials. Certifications such as Leadership in Energy and Environmental Design (LEED) provide a framework for designing and maintaining environmentally responsible buildings.

Many companies are also investing in renewable energy sources, including solar and wind power, to support their operations. By integrating renewable energy and sustainable infrastructure into their supply chains, businesses can

significantly reduce greenhouse gas emissions and operating costs.

Business Advantages of Green Supply Chain Management

Adopting green supply chain practices offers numerous strategic advantages for businesses. Companies that demonstrate strong environmental responsibility often gain a competitive edge in the marketplace, as sustainability has become a key factor influencing consumer and stakeholder decisions. Environmentally responsible practices can also attract new customers and strengthen brand reputation.

In addition to market advantages, GSCM improves resource efficiency and reduces operational costs by minimizing waste, conserving energy, and optimizing logistics processes. By avoiding hazardous materials and environmental risks, organizations can enhance operational resilience and ensure compliance with environmental regulations. Sustainable supply chains also contribute to improved product quality and customer satisfaction. As consumers increasingly seek environmentally responsible products, businesses that integrate sustainability into their operations are better positioned to meet these evolving expectations.

Building a Sustainable Supply Chain for the Future

Green Supply Chain Management represents a transformative approach that aligns economic growth with environmental stewardship. By embedding sustainability into product design, manufacturing, logistics, and infrastructure, organizations can significantly reduce their ecological footprint while improving efficiency and competitiveness.

As industries continue to face growing environmental challenges, the adoption of green supply chain practices will become increasingly essential. Companies that embrace sustainability today are not only protecting the planet but also securing long-term business success in a rapidly evolving global marketplace. Through innovation, collaboration, and responsible resource management, green supply chains are paving the way for a more sustainable and resilient future.

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