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November/December 2025
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EU–Mercosur: New market opportunities ahead

Implications for the dairy sector

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The free trade agreement between the EU and the Mercosur bloc has been politically agreed but not yet ratified. On 3 September, the European Commission submitted the proposals for signature and conclusion to the Council of the EU. The agreement can only enter into force once the Council and the Member States give their approval. Nevertheless, it is clear that the agreement marks a new phase in international agricultural trade – with implications for the dairy sector.

According to the European Commission, annual EU exports are expected to increase by 39 percent. EU GDP is projected to grow by €77.6 billion, and exports of agricultural and food products could rise by nearly 50 percent. These figures illustrate the economic potential of market liberalisation – including for the European dairy industry.

The agreement aims to ensure unhindered market access for both sides by reducing or eliminating tariffs and non-tariff trade barriers. This could create new export opportunities in fast-growing South American markets. At the same time, legal safeguards will protect more than 350 high-quality European food products. Particularly relevant is the agreed tariff rate quota of 30,000 tonnes of cheese, roughly ten times the current volume exported to the Mercosur countries.

The direction of trade policy is clear: Europe is demonstrating its commitment to open and rules-based trade, even in times of increasing protectionism. Greater market access can strengthen the competitiveness of European dairies and contribute to more stable global supply chains.

However, challenges remain. Several Member States have expressed concerns about environmental impacts, agriculture, and fair competition. Although the agreement includes safeguard clauses intended to take effect if imports strongly impact prices or volumes, it remains to be seen whether they will prove sufficient in practice. What is certain is that competitive pressure within the EU market will increase, especially for standardised products.

For the dairy sector, this means taking advantage of opportunities while realistically assessing risks. Export-oriented companies may open up new markets, while processors focused on domestic sales will need to emphasise sustainability, quality, and differentiation more strongly.

The EU–Mercosur agreement represents controlled market opening rather than unlimited liberalisation. It has the potential to generate growth – provided that policymakers and industry together maintain a balance between market dynamics, responsibility and reliability

thinks
Anja Hoffrichter

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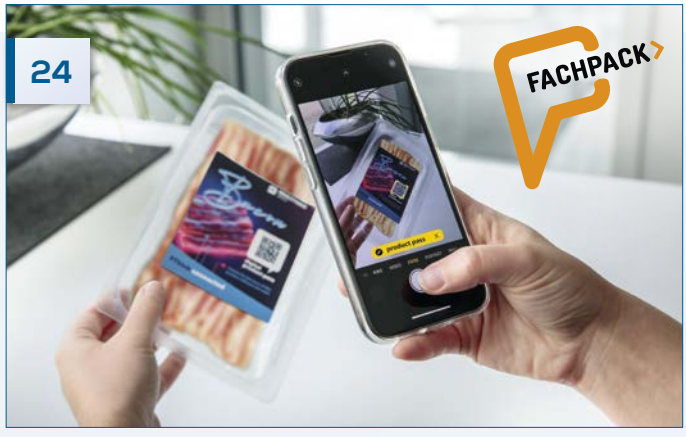


Columns:

PEOPLE

GEA expands Executive Board

Six new areas

The Supervisory Board of GEA Group Aktiengesellschaft has unanimously appointed **Stefan Klebert** as Chairman of the Executive Board for a further two years – through the end of December 2028 – and extended his term of office accordingly. The Supervisory Board also resolved to expand the Executive Board to six Executive Board areas from 2026. Executives from GEA's existing divisional and functional leadership team have been appointed to head these new areas: **Alexander Kocherscheidt** (51) is appointed to be Chief Financial Officer (CFO). He will succeed **Bernd Brinker** (60), who will leave GEA effective 31 October, 2025, by mutual consent. **Dr. Nadine Sterley** (44) will assume responsibility for the new People & Sustainability Executive Board area, as well as the role of Director of Labor. **Kai Becker** (44) will assume Executive Board responsibility for the Pure Flow Processing Division. **Klaus Stojentin** (58) will assume Executive Board responsibility for the Nutrition Plant Engineering Division. **Peter Lauwers** (55) will assume Executive Board responsibility for the Pharma & Food Applications Division, currently known as the Food & Healthcare Technologies Division. All new members of the Executive Board will serve for a term of three years until December 31, 2028, with the exception of Alexander Kocherscheidt, who has been appointed until October 31, 2028.

photo: GEA

From glass to PET

Successful launch of a new complete filling line

At the core of the new setup is the APF-Max 4L linear stretch blow molding machine from PET Technologies

A complete PET filling line has been commissioned at the "Yagotynske for Children" dairy plant, which is part of the Ukrainian Milk Alliance group. The facility specializes in the production of dairy products for children and is therefore subject to particularly high standards of hygiene, operational safety, and product quality.

This project is part of a broader modernization initiative. Established in 2012, the dairy plant was specifically designed to serve young consumers and currently produces a wide range of products, including milk, milkshakes, yogurts, and kefir. Until recently, these products were filled in glass bottles. In line with a global trend toward lightweight and shatter-resistant packaging, the manufacturer has now transitioned to PET.

Switching from glass to PET involved a comprehensive redesign of the production line. PET Technologies supplied the blow molding equipment and collaborated with Bulgarian company Index-6, a specialist in filling solutions, to deliver a fully integrated system. At the core of the new setup is the APF-Max 4L linear stretch blow molding machine from PET Technologies, capable of producing bottles up to 3 liters in volume at a capacity of 7,000 bottles per hour.

Currently, the full line runs at an output of approximately 6,000 bottles per hour, depending on the bottle format. Three newly developed PET bottle designs are now used for different product categories under the "Yagotynske for Children" brand. PET Technologies was responsible for both the bottle and blow mold design, with a focus on combining visual appeal and functional handling for young consumers.

The transition to PET packaging has enabled the dairy to reduce production costs, enhance safety, and maintain stringent sanitary standards. It also provides greater flexibility for product innovation and supports the brand's continued growth in the market for children's dairy nutrition.

Currently, the full line runs at an output of approximately 6,000 bottles per hour, depending on the bottle format (photos: PET Technologies)

PET Technologies supplied the blow molding equipment and collaborated with Bulgarian company Index-6

Fi Europe 2025

2 - 4 December 2025, Paris

Fi Europe returns to Paris Expo Porte de Versailles for its 30th edition, bringing together around 24,500 industry professionals from more than 135 countries. Over 1,550 exhibitors will showcase their latest innovations across four dedicated show areas, offering a comprehensive overview of current developments and emerging trends in the global food and beverage industry.

The Food Ingredients and Health Ingredients zones remain at the heart of the event, featuring a wide range of functional and value-added ingredients as well as science-based nutrition innovations. In 25 country pavilions, region-specific solutions will be presented. A new Ready-to-Market Zone highlights finished products that demonstrate how ingredients can be translated into consumer-ready innovations.

Following its successful debut in 2024, the Petfood Suppliers Hub returns with ingredients, packaging and processing solutions tailored to this dynamic market. The expanded Food Technology & Solutions area provides access to technologies that enhance efficiency, improve process reliability and optimise supply chains. Complementing the exhibition, the Startup Pavilion will feature emerging companies, with Startup Challenge finalists pitching their innovative concepts live on site.

Extensive Conference Programme

This year's Fi Europe also features a broad conference programme addressing key developments and future challenges in the food and beverage sector. Aimed at professionals in R&D, product development, marketing and management, the sessions combine scientific presentations, expert discussions and practical workshops on topics such as reformulation, plant-based and alternative products, health and well-being, tech-driven innovation, and functional food and beverages.

The agenda also includes opportunities for professional and strategic development. The new Future of Nutrition Lunch & Learn (3 December) focuses on the resilience and adaptability of food systems in an increasingly complex environment.

The Women's Networking Breakfast 2025 – Empower, Lead, Connect offers industry professionals a platform to exchange ideas on leadership, career development and networking.

With contributions from leading organisations including Innova Market Insights, Mintel, Kline & Company, the Good Food Institute Europe and the Everest Group, the programme delivers market insights, future forecasts and inspiration for sustainable innovation.

Around 24,500 trade visitors from more than 135 countries are expected to attend.

BENEO: Ingredients for balanced nutrition and weight management

At Fi Europe 2025, BENEO focuses on solutions for healthy weight management and balanced nutrition. The company presents a range of functional ingredients – including prebiotic fibres, plant-based proteins and slowly digestible carbohydrates – that support the development of nutritionally improved food and beverage products.

A central focus is on chicory root fibres, such as Orafti Inulin and Oligofructose, which can help reduce sugar and fat in formulations while increasing fibre content. According to recent scientific reviews, regular intake of chicory root fibres can contribute to lower body weight, fat mass and waist circumference.

BENEO focuses on solutions for healthy weight management and balanced nutrition (photo: SofikoS_shutterstock)

The carbohydrate Palatinose (isomaltulose), naturally derived from sugar beet, provides energy with a low glycaemic response and supports metabolic balance. Studies show that it promotes the release of gut hormones like GLP-1 and PYY, which are associated with satiety and energy regulation.

For manufacturers aiming to enrich products with protein, BENEO presents faba bean ingredients as a versatile plant-based option. With high protein content, a favourable amino acid profile and good functional properties for emulsifying and binding, they are suitable for applications in bakery, snacks and dairy alternatives. Trials at the BENEO Technology Center have shown that faba bean protein can even replace eggs in certain recipes without compromising texture or quality.

Arla Foods Ingredients: New protein concepts

Arla Foods Ingredients will present new high-protein food and beverage concepts demonstrating how milk and whey proteins can address diverse nutritional needs.

The company will showcase five new applications: a clear high-protein yoghurt, a drinking yoghurt with 25 grams of hydrolysed whey protein per serving, "Milky Spark" – a carbonated milk-like drink made with pure whey protein, a gluten-free soft-baked high-protein cookie with 27% protein and no added sugar, and a high-protein brownie (25%) with a fudgy texture and no added sugar.

Visitors will also be able to sample additional concepts such as a squeezable cheese, a drinking yoghurt, and a kids' UHT drink featuring Nutrilac milk fat globule membrane (MFGM). Arla Foods Ingredients will further highlight its Easy Bite snack bar concept, offering up to 40% protein in an 18-gram serving, and functional protein waters with Lacprodan ISO.Water whey protein isolates.

Arla Foods Ingredients will showcase five new applications (photo: Arla Foods Ingredients)

Novonesis: "The world of food and beverages, made better with biology"

Fi Europe provides Novonesis with a platform to present current developments in biotechnology for the food and beverage sector. At the booth, visitors can explore scientific approaches that influence taste, texture, and shelf life through live demonstrations, prototype tastings, and expert-led discussions.

From flavor optimization and simplified labeling to waste reduction and improved production efficiency, Novonesis' biosolutions support manufacturers in refining processes, maintaining quality, and adapting to changing consumer expectations. These solutions are applied across various product categories such as yogurt, cheese, bakery goods, and plant-based products, aiming to achieve reliable results with fewer resources while maintaining taste, texture, and safety.

During the event, Novonesis experts will host interactive presentations focusing on the interface between biology, sustainability, and technological innovation. A dedicated session will address the formulation challenges of plant-based beverages, including sensory, nutritional, and stability aspects for ingredients such as oats, soy, almonds, peas, and blends.

Through prototypes, technical insights, and application examples, Novonesis will demonstrate how bio-based solutions can enhance product quality while preserving nutritional and processing integrity. Practical examples at the booth include probiotic yogurts, soft-textured breads, high-protein beverages, and alcohol-free drinks with a natural flavor profile.

Noma x Novonesis

The restaurant Noma, internationally recognized for its innovative approach to cuisine, collaborates with Novonesis to explore new methods of flavor development. This partnership combines culinary practice with biotechnological research and investigates the use of biosolutions in new product development under the Noma Projects line. Visitors will be able to learn more about this collaboration, where scientific research and gastronomy come together.

Novonesis will demonstrate how bio-based solutions can enhance product quality while preserving nutritional and processing integrity (photo: Novonesis)

RAPS: Functional ingredient solutions

Under the theme "Ingredient Excellence by RAPS: Unlocking Functionality, Taste & Innovation," the German spice and ingredient specialist RAPS will present new developments at Food Ingredients Europe. The company will offer live tastings and provide insights into its expertise in microencapsulation and CO_2 extraction.

photo: La Famiglia_shutterstock

RAPS will demonstrate how traditional know-how in blending and seasoning can be combined with modern technology to improve taste, texture and functionality in applications ranging from bakery and snacks to meat, plant-based, dairy and convenience products.

The presentation will include spice blends, marinades and ready-to-use systems made from fresh raw materials, as well as extracts, pastes and seasoning solutions that highlight the company's focus on both culinary authenticity and technical performance. Visitors will also learn how encapsulation and CO_2 extraction support flavour protection, shelf-life stability and consistent product quality.

Among the product examples on show are savoury fillings for baked goods, marinades for snacks, smoke ingredients for sauces, and seasoning blends for meat and plant-based products. RAPS will also highlight extracts and preparations suitable for dairy applications such as fresh cheese, as well as components for hummus, mayonnaise and spicy beverages.

photo: Informa Markets

Finalists announced for Fi Europe 2025 Innovation Awards

Fi Europe has revealed the finalists for its 2025 Innovation Awards, recognising outstanding developments in food ingredients and technology. From a record 177 submissions – up 22% from last year – 23 finalists were selected across six categories.

The shortlist includes innovations in areas such as dairy alternatives, plant-based products, food manufacturing, health, and sustainability. Among the nominees are companies such as Ajinomoto Foods Europe, Lallemand Bio-Ingredients, Tetra Pak, ADM, IFF, and Royal Avebe.

The finalists were chosen by a jury of eleven industry experts chaired by Prof. Colin Dennis, Chair of the Board of Trustees at IFIS Ltd. All finalists will present in person on 1 December with winners revealed at the Fi Europe Celebration and Awards ceremony on 2 December, which also celebrates the event's 30th edition.

Digital intelligence meets human expertise:

How GEA is transforming service with AI and Performance Partnership

Annette Wille, Vice President Representative at GEA for the Separation and Flow Components Division and Managing Director of GEA Germany GmbH

The demands placed on modern production processes are constantly increasing – and with them, the expectations for service, availability, and efficiency of industrial plants. At GEA, the combination of digital smart services, artificial intelligence (AI), a holistic understanding of service, and well-trained personnel plays a decisive role in this. In this interview, Annette Wille explains how service at GEA is fundamentally changing through technologies such as remote support, condition monitoring, and AI – and how GEA is focusing on customer-specific potential in production with Performance Partnership.

IDM: How is service in the field of mechanical separation technology currently changing – and what role do digital services and AI play in this?

Wille: Service requirements are changing rapidly. In the past, many interventions were reactive – a problem occurred, a technician was dispatched, and the machine was repaired. Today, digital solutions and AI allow us to break new ground by analyzing data to identify potential problems early on and take proactive action. The goal is clear: to avoid unplanned downtime, minimize repairs, and maximize plant availability. Smart services such as remote support and condition monitoring make this possible – and AI helps us to evaluate this data intelligently.

IDM: What is behind the term "Performance Partnership" – and how does it differ from traditional service contracts?

Wille: With Performance Partnership, we go beyond traditional service. We are not only concerned with repairing machines or performing maintenance, but also with working together with our customers to increase their efficiency in the long term. This begins with a clear definition of objectives based on three pillars: availability, productivity, and sustainability in operation. To implement

Continuous condition monitoring of the plants allows changes to be detected more quickly and possible measures to be initiated in good time

this, we first determine the potential and then create individually tailored service packages. In doing so, we combine our many years of experience with digital solutions, smart tools, and a partnership-based approach on an equal footing.

IDM: Can you give an example of how AI already supports remote service today?

Wille: Of course. For us, AI is not just a topic for the future, but is increasingly becoming an integral part of our service processes. In the future, it could serve as a kind of co-pilot for our experts – especially in remote service. One possible scenario is as follows: AI detects abnormal vibration behavior in the operating data of a separator, indicating an impending bearing problem. The system then suggests a specific maintenance measure before a failure occurs. Our service experts can respond immediately – quickly, efficiently, and often without having to visit the site.

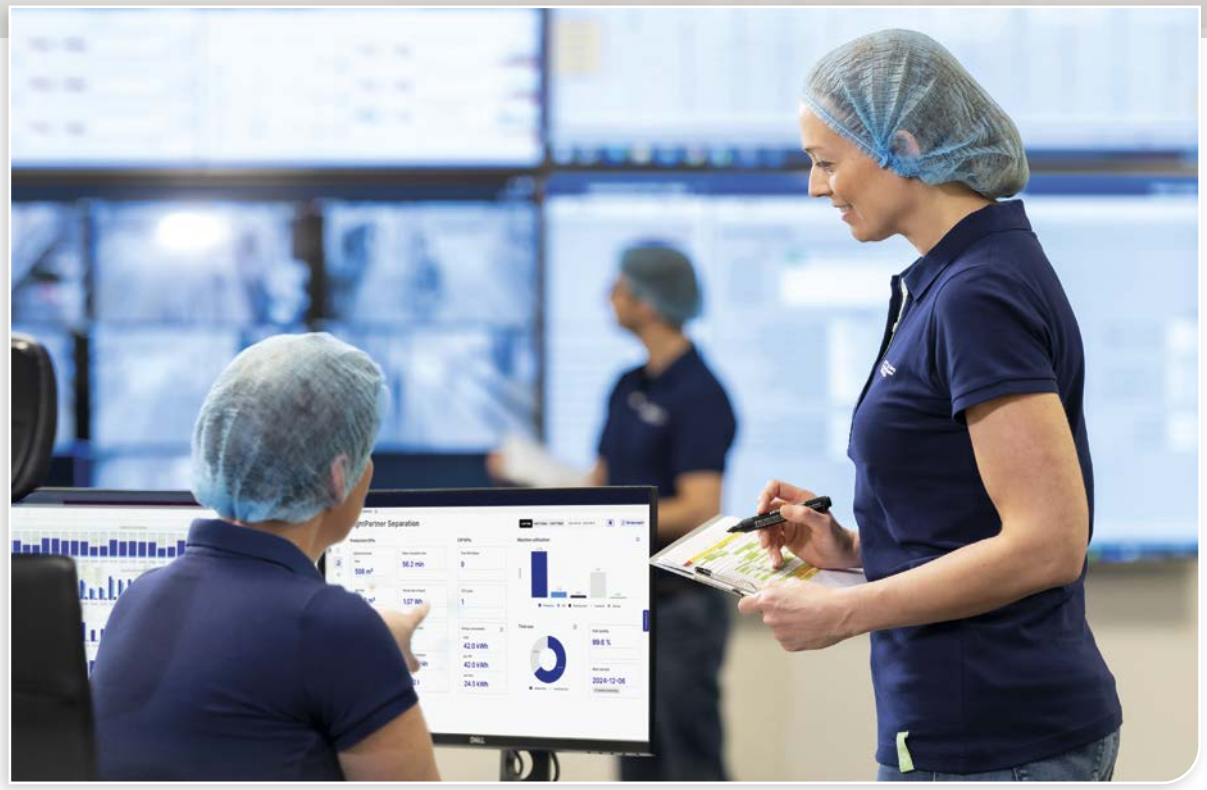
IDM: What impact does this have on service quality?

Wille: The impact would be enormous: Response times would be significantly shorter because many problems could be identified remotely and often resolved immediately. At the same time, the quality of service calls increases because our technicians arrive at the plant with a clear diagnosis. The so-called "first-time fix rate" can also improve noticeably.

IDM: Another buzzword is "condition monitoring." What exactly does this mean for your customers – and how does it support predictive maintenance?

Wille: Condition monitoring means that we continuously monitor the condition of our plant components – such as temperature, vibrations, speeds, or other operating parameters. Based on this data, we can detect changes at an early stage that indicate wear

In addition to remote and on-site services, well-trained operators remain an important component of efficient production plants. The GEA Academy offers specially designed training programs for customers worldwide



GEA InsightPartner comes into play to increase the efficiency of plants in the long term: KPI dashboards allow process data to be viewed at a glance and potential opportunities to be identified (photos: GEA)

or potential malfunctions. This allows maintenance measures to be planned exactly when they are necessary – but not too late.

The next step involves self-learning and self-optimizing machines that independently analyze the collected data and initiate appropriate measures, such as speed changes in response to changing inflow conditions. This not only increases efficiency, but also extends the service life of systems and reduces wear and tear.

IDM: What other advantages does this offer, also in terms of sustainability?

Wille: Condition monitoring and predictive maintenance not only help to increase machine availability, but also reduce resource consumption. When systems are running optimally, there is less product loss, fewer cleaning cycles are required, and the use of spare parts can be controlled in a targeted manner. Unplanned trips by service technicians or express deliveries are also less frequent. All of this not only reduces operating costs, but also improves the efficiency and carbon footprint of our customers.

IDM: How is the role of customer personnel changing in the course of this transformation?

Wille: Our customers are increasingly building up their own first-level expertise – for example, through trained personnel, including night shift staff, who monitor multiple machines and can respond immediately in the event of malfunctions. This reduces dependencies and increases response speed. This requires continuous training and a deep understanding of the processes – which is exactly where our training programs come in.

IDM: What role does the GEA Academy play in this context?

Wille: A central component of our service philosophy is the GEA Academy at our production site in Oelde. There, we offer training programs specifically geared toward separators and decanters for customers and service employees – both on-site and online. The goal is to make operating and maintenance personnel proficient in handling our systems. Regular training not only improves understanding of the equipment, but also helps to avoid operating errors and detect natural wear and tear at an early stage. This contributes directly to the predictive maintenance strategy and reduces unplanned downtime and expensive repairs.

IDM: How important is trust – especially when it comes to data?

Wille: Very important. Because digital services are based on data – and this data must be shared so that we can analyze it and derive recommendations for action. This requires trust. GEA offers certified processes and secure cloud solutions that meet the highest standards based on ISO certifications. All data connections are protected by firewalls and special gateways and are regularly checked for security risks. Transparency is key here: our customers know at all times what data is being collected, how it is being processed, and how they benefit from it. Only with this openness can a genuine partnership develop.

IDM: Your motto is: "Unlock your full potential with Performance Partnership from GEA." What exactly does this mean for customers?

Wille: We don't see service as a cost factor for our customers, but as the key to adding value. With Performance Partnership, we give our customers the opportunity to exploit the full potential of their plants and processes – technologically, economically, and sustainably.

IDM: How do you see the future of service in your industry?

Wille: The direction is clear: service is becoming more digital, more intelligent, and even more partnership-oriented. AI will increasingly act autonomously, and digital twins and predictive maintenance will become standard. At the same time, people will remain central – as competent partners on site who understand the technology and actively help shape the processes.

Protein fortification

Powering dairy innovation

Author: Jess Ryall,
Content and Marketing Executive at FMCG Gurus

This article is based on FMCG Gurus' Protein Fortification within the Dairy Sector Trend Report 2025.

Consumer Experts, Insight Driven

The global dairy industry is evolving rapidly as consumers begin to associate dairy products with health, wellness, and functionality. Despite a growing shift toward plant-based, or flexitarian lifestyles, dairy continues to hold strong appeal. A key way to maintain this is fortification, especially through protein enhancement. FMCG Gurus' insights reveal how consumer perceptions and nutritional priorities are shaping new opportunities for fortified dairy innovation.

The popularity surrounding protein

Nearly half of consumers (48%) want to increase their protein intake. Protein remains one of the most aspirational ingredients for consumers. Many believe that increasing protein intake supports immediate and long-term health, even if they are unaware of the recommended daily levels. In fact, 74% associate protein with aiding general health and wellness, while 73% link it to improved energy levels. This perception of protein as a functional component is helping transform dairy products, which previously may have been seen as just everyday staples.

Global shifts toward healthier diets

FMCG Gurus' findings indicate that 55% of consumers have improved their diets in the last two years. This growing awareness of the impact of dietary choices has led to more than half of global consumers proactively improving their eating habits. Many are reducing "dietary evils" such as foods high in sugars or overly processed, whilst increasing their intake of ingredients which are health-boosting. Protein is at the top of the list of ingredients in which consumers have looked to increase in their diets, positioning it as a great component for fortification. This can enhance the nutritional value of dairy products such as milk, yogurt, and cheese.

Functional dairy is becoming mainstream

FMCG Gurus' consumer insights reveal that 57% of global consumers now consume functional or fortified food and drink. As barriers to healthy living rise, such as time scarcity, stress, and cost pressures, more consumers are turning to functional foods for convenience purposes and nutritional support. Dairy stands out as a

trusted category for fortification as it's already associated with natural goodness, calcium, and protein. Fortified dairy products that promise tangible benefits such as immunity support, gut health, or sustained energy are becoming increasingly popular and appealing to consumers.

The value of dual-benefits

FMCG Gurus' market research illustrates that 74% of consumers would consume a protein product that also delivers a probiotic benefit. The fusion of protein and probiotics represents an innovative opportunity for dairy brands. With two-thirds (66%) of global consumers having purchased probiotics in the past year, this dual-benefit would align with the growing interest in functional health products and enhance the perceived value of products to consumers. Combining protein fortification with probiotics allows brands to deliver on digestive wellness as well as functional energy, reinforcing dairy's position as a top category for convenient, yet credible, nutrition.

Illustration: AI-generated by Sora/silvdesign

Personalized nutrition: the future of dairy products

FMCG Gurus' insights show that 59% of consumers are interested in food which is customized to their nutritional needs. Consumers increasingly recognize that health and nutrition can be different for individual people. This rising desire to overcome this through personalized nutrition opens opportunities for customized fortified dairy products, such as yogurts or drinks tailored to boost energy, support muscle health, or enhance immunity, all of which are concerns that consumers look for protein to address.

An opportunity for the dairy sector

Protein fortification presents an opportunity for the dairy sector to evolve beyond traditional perceptions and connect with health-conscious consumers. As demand grows for convenient, nutritious, and effective food and beverage options, fortified dairy products offer a way for brands to meet these ongoing needs and lead the way in functional innovation.

Smarter CIP

The key to an enduring competitive edge

Author: Salvatore Albano, Vice President Global Accounts Food & Beverage Global Solutions at Ecolab

To say that dairy manufacturers face a challenging industry landscape is an understatement. Rising input costs are creating additional pressure to streamline expenses and wring the most value out of each batch. But cost-saving initiatives can't undermine compliance with regulatory standards or progress toward sustainability goals, and they certainly can't compromise the essential food safety & quality that props up every reputable brand.

In this environment, clean-in-place (CIP) is taking the spotlight as an essential process that, in many cases, is far from optimized. If dairy manufacturers can streamline CIP, they stand to achieve multiple goals in one action. Optimized CIP has the potential to not only improve margins but also improve sustainability and the consistency of food safety operations as well.

New technologies and chemistries make it possible:

» AI-enhanced visibility tools enable smarter decision-making with real-time data

» Advancements in process monitoring and automation prevent resource overuse
» Enzymatic alternatives to traditional caustic cleaners deliver a thorough, targeted clean without degrading expensive core equipment over time

Together, these innovations offer a multipronged approach to more optimized CIP that dairy manufacturers can use to protect their product, their end consumer and their bottom line. Here's how.

AI-enhanced visibility drives smarter CIP

The truth is that, even in a well-run facility, major gaps in CIP visibility make it difficult (or impossible) to achieve maximum optimization. When it is unclear whether a CIP wash was run – or there is no certainty that a given wash was effective – batches are more likely to be delayed by additional CIP runs. And when a significant problem occurs, it becomes harder to efficiently evaluate and diagnose the issue, prolonging troubleshooting and leading to uncontrollable downtime.

Modern CIP monitoring and analysis tools directly resolve this visibility problem by automatically collecting, compiling and analyzing CIP data in real time. No more flying blind. These tools equip facility leadership with the real-time insights they need to drive smarter, more optimized CIP.

What's more, some tools are now augmenting this centralized, real-time visibility with AI features that make further strategic use of CIP data. Predictive analytics can proactively forecast and optimize wash cycles, using past CIP data to assess upcoming risks. Intelligent alerts can help supervisors correct chemistry overuse and other issues in real time.

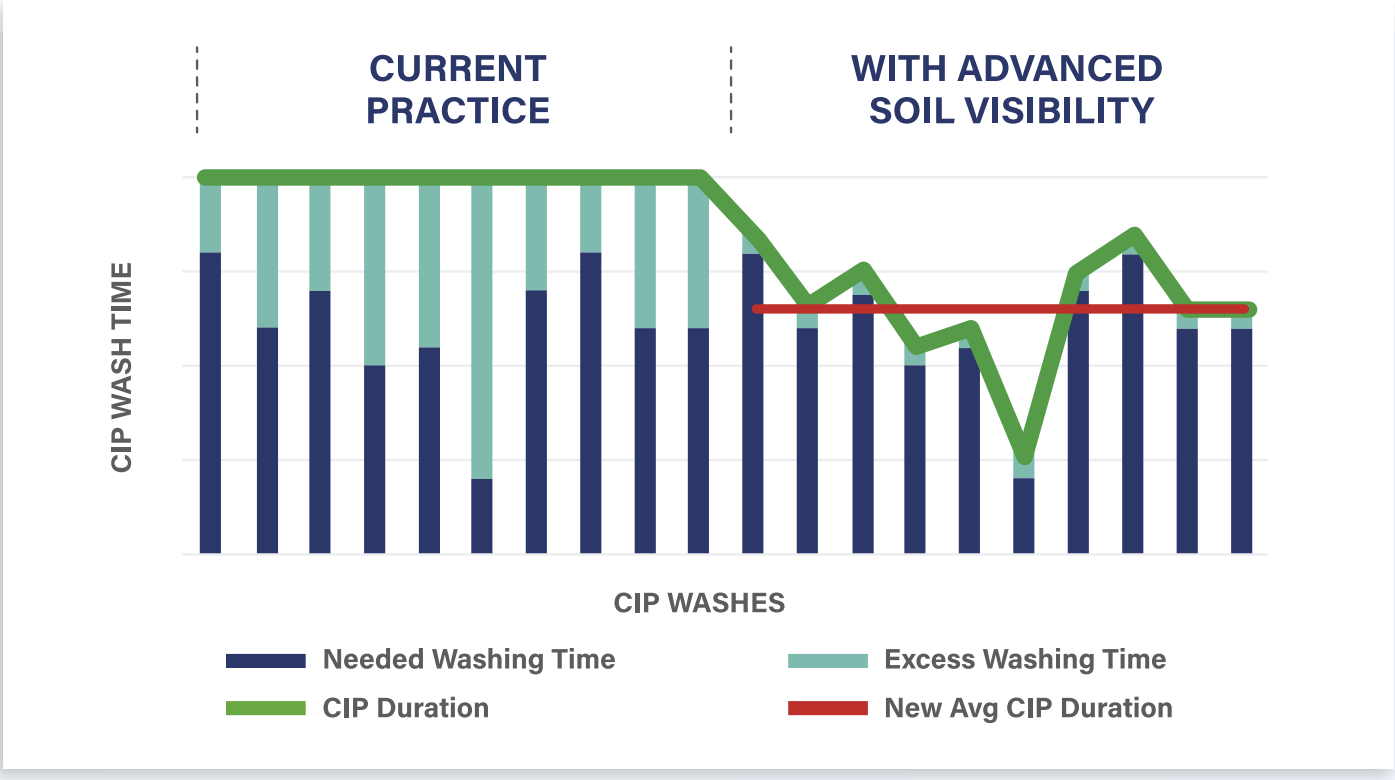
Crucially, these AI tools offer more than a one-and-done boost in efficiency. Their generative and agentic qualities make it possible to actually improve the strategy and targeted accuracy of AI-powered insights over time, which sets dairy processors on a path toward continuous process improvement. In a tight-margin industry, this continuous streamlining can turn into a true competitive advantage.

Automation-enabled processes support higher productivity

Dairies have been trained to think cautiously about CIP, and for good reason. The stakes of getting CIP wrong are high: food safety and product quality are table stakes.

However, this cautiousness often manifests in over-cleaning – running CIP cycles for maximum assurance of "clean." An excessively long CIP cycle not only wastes resources (a sensitive subject in water-scarce areas), but it also delays production schedules while employees are on the clock.

Several new technological advancements are converging on a solution to this problem. Advanced turbidity sensors are capable of gauging real-time soil data during CIP washes and can determine when soils have been adequately removed. And



new digital tools can analyze and leverage this data toward the streamlining of CIP processes. More and higher-quality data is AI gold, allowing technology to algorithmically establish an optimized CIP baseline.

Needless to say, this type of automation-enhanced CIP contains a ton of potential for cutting inefficiencies out of core cleaning processes. It enables faster cycles, and yet it requires no compromise on food safety. These tools also indicate what new innovations on the horizon may look like: Eventually, multiple steps in the CIP process may be equipped with real-time data and AI-enhanced precision.

Enzymatic cleaners offer a clean start

For decades, caustic cleaners have delivered reliable CIP results across food & beverage verticals. But these cleaners also have considerable drawbacks, none of which should come as a surprise to the average dairy processor:

- Safety risks associated with high-temp process water
- Long-term corrosion and damage to core equipment
- Wastewater concerns stemming from the alkalinity of caustic solutions

New enzymatic CIP chemistries, like Ultrasil™ Connected, sidestep these problems by delivering a thorough clean (equal or even superior to caustic alternatives). Enzymes don't simply blast through soils; they target specific soils (like fats or proteins) and break them down, removing them from core equipment without inflicting damage and with less rinse water. And because they come with a lower sodium content, enzymatic cleaners make it easier to meet wastewater requirements and operate sustainably.

A more strategic path forward for CIP

The value of these modern approaches to CIP are not merely hypothetical. The AI-enhanced visibility tools alone are already helping food & beverage manufacturers boost efficiency by up to 15%.[1] Combined with automated wash steps and enzymatic cleaners, dairy processors could build new efficiencies directly into this core cleaning & sanitation process.

Viewed through this capacity-expanding lens, dairy processors can (and indeed, they should) reframe CIP as an opportunity to create distance between themselves and their competitors. When your core food safety & quality processes also drive better productivity and profitability, you're protecting not only your end customer but your business as well.

1 Based on results from Ecolab customer trials, which are specific to those individual customers when full Ecolab recommendations were implemented. Results will vary for other customers based on factors and circumstances in their operations.

NEWS

dsm-firmenich and APC Microbiome Ireland
New bacterial defense systems identified

dsm-firmenich, in collaboration with APC Microbiome Ireland and INRAE, has identified new bacterial defense mechanisms that could enhance resistance to bacteriophage infections in dairy fermentations. The findings, published in PNAS, deepen scientific understanding of how Lactococcus lactis – a key bacterium in cheese and yogurt production – recognizes and responds to phage attacks.

The research revealed 13 new antiphage systems and analyzed how 66 phage mutants adapt to bypass bacterial defenses. One newly characterized mechanism, named Audmula, protects cultures by altering the bacterial cell wall to trap phages and prevent their spread – an effect described for the first time.

Bacteriophages are a major cause of fermentation failures in industrial dairy production. Insights from this study will help dsm-firmenich develop more robust starter cultures with improved phage resistance.

"This research provides a foundation for designing next-generation cultures that can better withstand phage challenges," said Prof. Douwe van Sinderen, senior author of the study.

The project exemplifies successful collaboration between academia and industry. dsm-firmenich contributed bacterial strains, genomic data, and dairy-derived phages, ensuring that the results are relevant for large-scale dairy applications.

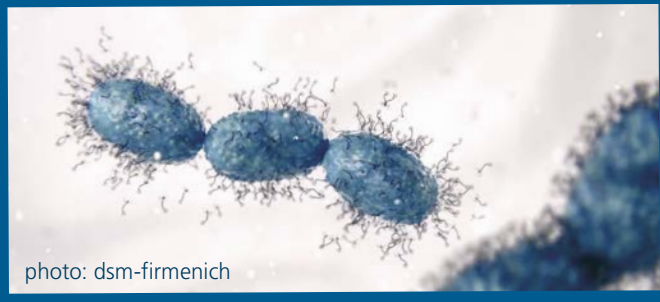


photo: dsm-firmenich

Cup Filler for Spanish Dairy

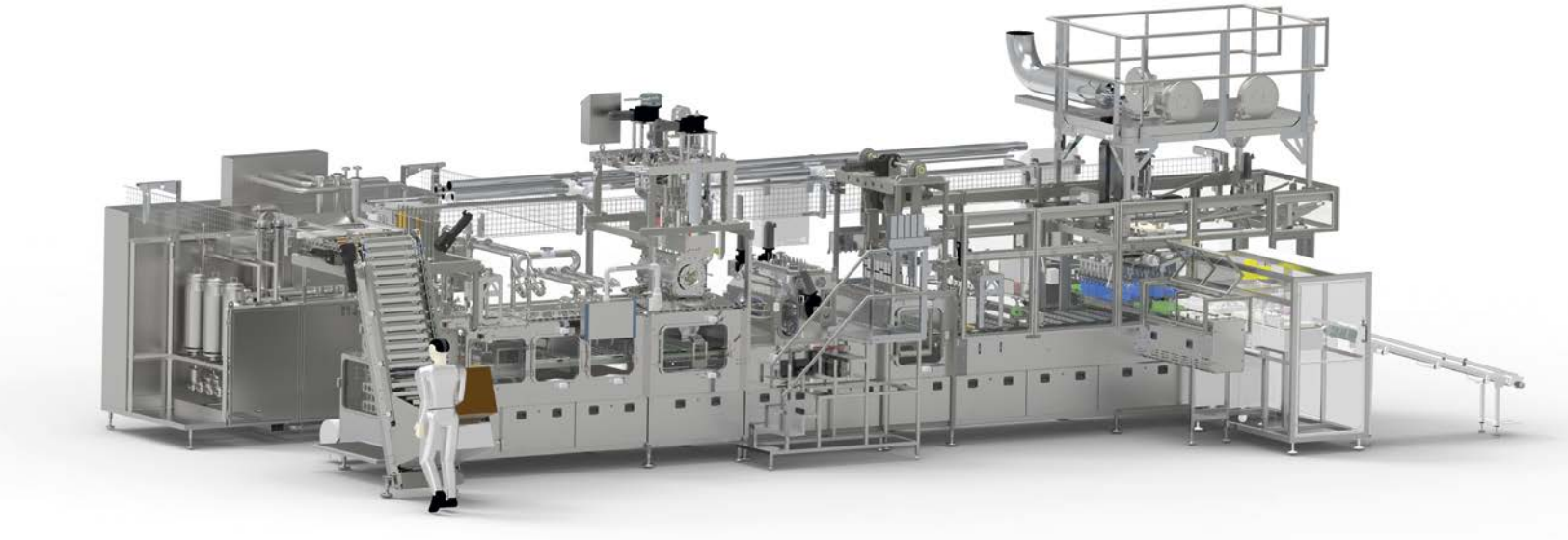
On site at VDB Packaging

VDB Packaging in Winterswijk – part of the Brink Group, an international toolmaker specializing in injection molding – has developed since its founding in 2009 into a specialist for customized solutions in the dairy and delicatessen industry. With a team of 30 employees, the company designs and manufactures filling and packaging systems for dairy and delicatessen products and, more recently, also for large bakeries when it comes to the production of herb baguettes.

The company's philosophy is based on interdisciplinary cooperation rather than rigid departmental structures. "We have specialist areas, but no departmental thinking. This allows us to work across topics," explains Managing Director Egbert Becker. Even in the quotation phase, the team works together with the customer to clarify which problem actually needs to be solved. "Our quotations are essentially always engineering projects. We ask precisely what the customer really needs before we develop a solution," says Becker.

Four pillars

The business is based on four pillars: service and standard business, optimization of existing systems (after-sales), the second-hand market, and the construction of special-purpose machinery. Around two-thirds of all projects are implemented directly at the customer's site; for rebuilds, the company also has its own hall



A current example is the delivery of an eight-lane cup filler to a Spanish dairy (photo: VDB Packaging)

available. The customer base includes not only end users but also other machine manufacturers.

In new construction, no series machines are produced, but individually designed cup and bottle fillers, glass fillers, and thermoforming systems. Experience gained from retrofit and used machine projects flows directly into new developments. In addition, VDB has been working with Watttron for several months on optimized sealing stations with integrated quality control and constant temperature distribution, aimed at processing alternatives to aluminum lids.

Focus on aseptics

Aseptic technology is becoming an increasingly important topic. VDB does not rely on film sterilization but on sterilizing the finished container with hydrogen peroxide. "With our system, we achieve complete germ reduction – the so-called overkill. Temperature control is a decisive factor here, which we monitor in close coordination with our peroxide supplier," says Becker. All parameters are continuously monitored to ensure consistently high product safety. "Aseptic technology is gaining importance because distribution routes are getting longer and our customers require extended shelf life," Becker adds.

Latest project

A current example is the delivery of an eight-lane cup filler to a Spanish dairy. The company had already made an inquiry there five years ago but initially decided against VDB due to price and delivery time. The experience with the chosen supplier at that time was unsatisfactory, so VDB was later brought in to help put the system into operation together with the original provider. Finally, in July 2024, the order was placed for a new aseptic cup filler from Winterswijk. After around 14 months of construction, the system is now ready for delivery. Its capacity is up to 20,000 cups per hour. However, Becker emphasizes: "For us it is not about cycle rates, but about filling the product gently."

The system handles two cup formats ranging from 200 to 330 ml with a diameter of 75 mm, as well as another cup format not yet defined. Format changes are fully automatic – including adjustment of the cup carriers and sealing station, without mechanical

The heart of the system is a servo-driven, CIP/SIP-capable dosing unit (photo: VDB Packaging)

Egbert Becker, Managing Director at VDB Packaging

Hans Hofmann, programmer at VDB Packaging

SCAN FOR VIDEO OF THE MACHINE:
VDB Packaging Aseptic Cup Filler for Coffee Latte

intervention. The sealing heads not in use are automatically moved into a park position.

In the H_2O_2 sterilization system, pumps are deliberately avoided; instead, constant pressure adapted to the cup size is used to prevent unnecessary stress on the peroxide. The sterile water module is based on filtration with automatic inline filter control.

An integrated cup bunker holds up to 50,000 cups. Destacking takes place independently of the cup base. The lids consist of a two-layer composite with an inner PE layer. The tightness check combines mechanical squeezing with thermal headspace heating. Cups that do not meet the requirements are automatically ejected and not dated – avoiding production stops. Palletizing of cup crates is also fully automated.

The heart of the system is a servo-driven, CIP/SIP-capable dosing unit. It fills both low- and high-viscosity products with gram accuracy and without dripping. The temperature range extends from 4 to 92 °C. Cleaning is carried out via a fully integrated CIP/SIP system.

The machine has a modular design and is divided into self-contained stations. Each station is fully accessible, as far as possible also from the operator's far side. Throughout the pressure-monitored tunnel – from sterilization to sealing – rotating spray heads are installed. Large tunnel doors with safety glass provide good visibility into the production process.

Commissioning already takes place at the factory under realistic conditions. "The machine is installed in Winterswijk exactly as it will later stand at the customer's site. This reduces connection work to just a few interfaces, allowing commissioning on site to run smoothly," says Becker."We have specialist areas, but no departmental thinking. This allows us to work across topics," says Managing Director Egbert Becker.

An integrated cup bunker holds up to 50,000 cups (photo: VDB Packaging)

NEWS

FAM STUMABO
New locations

FAM STUMABO, a provider of cutting solutions for the food industry, has opened new locations in Spain, Germany, and the United States. The expansion aims to improve customer proximity, enhance service capabilities, and provide faster technical support in key markets.

The new sites in Paterna (Spain), Niederzissen (Germany), and Franklin, Wisconsin (USA) function as regional hubs offering local service, product testing, and spare parts. All facilities include on-site test labs where customers can evaluate equipment performance using their own products – either in person or remotely. Test results include detailed documentation, images, videos, and processed product samples.

In Spain, the new facility near Valencia supports continued growth in the Iberian Peninsula. In Germany, the move to a larger site in Niederzissen increases capacity for machine testing and service. In the U.S., the new Franklin location becomes the national headquarters, centralizing operations for the U.S., Canada, and Mexico and complementing the existing site in Florida.

With this expansion, FAM STUMABO aims to strengthen its ability to provide localized support and tailored solutions, while maintaining close contact with customers in Europe and North America. "Our ongoing expansion is part of our long-term strategy to combine global expertise with a strong local presence," said Mark Van Hemelrijk, CEO of FAM STUMABO.

Mark Van Hemelrijk, CEO of FAM STUMABO (photo: FAM STUMABO)

Fachpack 2025

Trade fair review

This year's FACHPACK once again provided a comprehensive overview of developments in packaging, packaging technology and processes. Trade visitors from across Europe came to Nuremberg to learn about new solutions and trends. Around 37 percent of attendees were international, mainly from sectors such as food, chemicals, pharmaceuticals, cosmetics, retail, automotive, electronics and logistics.

Together with the parallel event Powtech Technopharm, the trade fair attracted around 72,000 participants. Over three days, key topics such as circular economy, regulation, automation, digitalisation and artificial intelligence shaped the professional discussions.

The editorial team of IDM attended the event. The following pages highlight some of the most interesting exhibits presented at the fair.

photo: NürnbergMesse

LEIBINGER: New coding and marking concept

LEIBINGER presented innovations in industrial coding and marking technology. The company focused on system integration, digital connectivity and the upcoming transition to 2D codes as part of the GS1 Sunrise Initiative, which will make such codes an industry standard by 2027.

The company demonstrated how its printers can apply machine-readable information – such as batch numbers, expiry dates and traceability data – reliably under real production conditions. The systems are designed for high precision, reduced maintenance and seamless integration into digital production lines.

A particular highlight was the IQJET printer, which operates for up to five years without maintenance. It features LEIBINGER's sealed print head system that prevents drying and allows cartridge replacement during operation. According to the company, this reduces downtime, lowers solvent consumption and supports more energy-efficient production.

With its in-house ink development in Tuttlingen, LEIBINGER also presented tailored ink formulations for different packaging materials and applications, including colour variants.

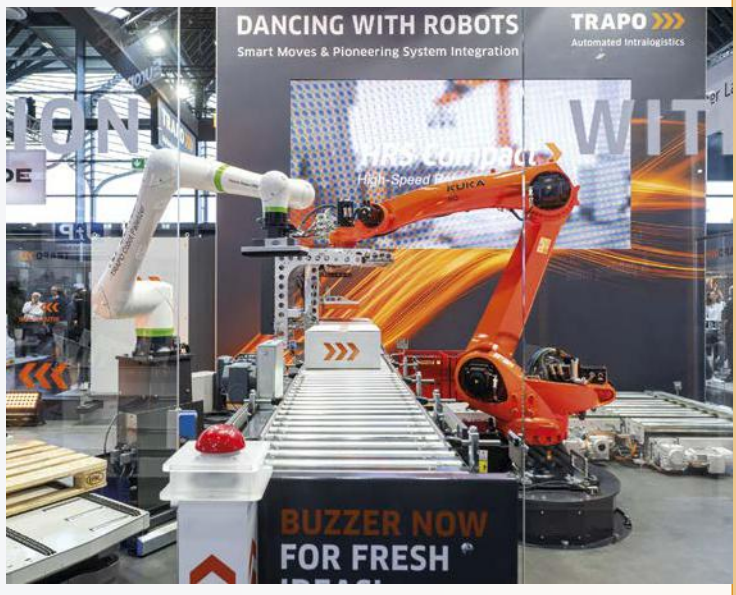
LEIBINGER presented innovations in industrial coding and marking technology (photo: Paul Leibinger)

TRAPO: System integration

TRAPO presented a live demonstration titled "Dancing with Robots," highlighting automated palletizing and material handling processes. Two robots – a collaborative TCP series model and a high-speed industrial robot from the HRS series – alternately palletized and depalletized cartons and crates. The setup also included conveyor equipment, a mobile robot from OMRON, a gripper from Schmalz, and the TLS 3600 loading system for automated truck loading and unloading.

The demonstration illustrated TRAPO's role as a system integrator for intralogistics and warehouse automation. The company's modular hardware and software portfolio allows for flexible adaptation to customer-specific requirements.

TRAPO also showcased its palletizing software, TRAPO Pack, which enables user-defined stacking patterns, and the TIM (TRAPO Intelligent ME) system for process monitoring. TIM uses camera-based data to improve operational transparency and support predictive maintenance.



TRAPO presented a live demonstration titled "Dancing with Robots" (photo: TRAPO)

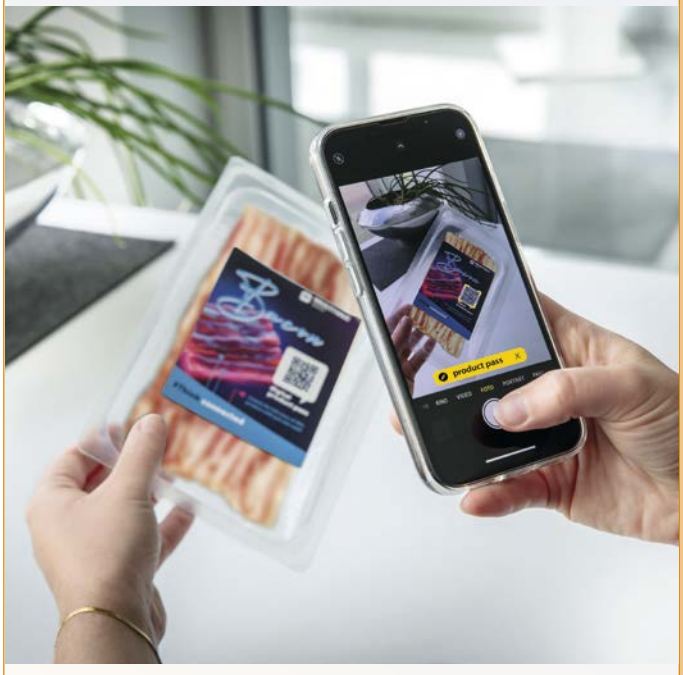
MULTIVAC:
Digital product passport solution

The MULTIVAC Group and its partners presented an integrated solution for the digital product passport, designed to increase transparency along the entire value chain – from production and retail to recycling.

The system links product, packaging and process data directly to each individual pack or batch. An automatically generated QR code with GS1 Digital Link provides access to this information. This allows manufacturers, retailers and consumers to view product-specific details such as origin, processing stages or recycling instructions.

For consumers, the solution offers greater transparency and additional information. At the same time, manufacturers and retailers benefit from improved traceability and inventory management. By assigning a unique digital identity to each package, including its best-before date, stock management becomes more accurate and food waste can be significantly reduced.

Recycling companies also gain advantages, as detailed information on material composition supports better sorting and recovery processes. With the digital product passport, MULTIVAC aims to enable seamless data flow and promote circularity within food packaging systems.



The MULTIVAC Group and its partners presented an integrated solution for the digital product passport (photo: MULTIVAC)

Weber:
New packaging concept

Weber presented a new packaging concept for the efficient processing and packaging of cold cuts and piece goods. The focus was on the wePICK pick robot, the wePACK 7000 thermoforming packaging machine, and several technical innovations in film handling and tool change systems.

The wePICK pick robot is designed for the automatic and precise loading of sliced or portioned products into the packaging machine. Its high speed and accuracy contribute to a smooth product flow and increased line efficiency. The system integrates seamlessly with the wePACK 7000, reducing space requirements and simplifying operation and cleaning.

The wePACK 7000 thermoformer handles the safe and resource-efficient packaging of food products. Equipped with servo technology, it operates with reduced energy consumption. New features such as the web edge control system and the fine chain-gap adjustment help prevent film misalignment and downtime due to film tolerances.

With the new FormTech technology, Weber achieves improved pack forming through even material distribution, particularly beneficial when using thinner films. The new film threading system simplifies film changes, shortens set-up times, and enhances operator ergonomics and hygiene.

Another innovation is the SmartChange quick-change system, which allows tool changes at the forming station to be carried out quickly and without the need for additional tools. This improves machine availability and operator safety.

Completing the concept, the weSORT 3000 compact pack separator enables the merging of up to six tracks into one and is fully integrated into the wePACK control system, reducing both footprint and changeover time.

The wePACK 7000 thermoformer handles the safe and resource-efficient packaging of food products (photo: Weber)

Schubert: Practical solutions

Schubert presented its lightline series – a range of preconfigured packaging machines designed for quick installation and efficient handling of standardised packaging tasks. The series includes cartoners, case packers, picker lines and flow-wrapping machines.

Using standardised modules, the machines require little space and can be put into operation quickly. At the show, Schubert demonstrated a lightline cartoner used for packaging energy bars. The system can process up to 60 boxes or 480 products per minute. Its vertical magazine holds around 4,000 blanks and can be refilled during operation, ensuring continuous packaging.

Key design features include the compact A3 erector, which helps save space and reduces the number of glue nozzles, as well as a lightweight sealing tool that simplifies format changes.

With the lightline series, Schubert aims to offer practical, space-saving and cost-efficient solutions for packaging lines that combine proven technology with short lead times.

Schubert also presented the tog.519 cobot, which combines the performance of an industrial robot with the flexibility of a collaborative system. Based on SCARA kinematics with a fifth axis, it performs precise pick-and-place tasks at up to 90 cycles per minute.

Using two 2D cameras and AI-based image analysis, the cobot recognises and positions products even when they are unsorted. Operating in a protective cell, the tog.519 can be quickly integrated into various packaging lines for different product types.

Ralf Schubert and Marcel Kiessling present the Lightline Cartonpacker and the tog.101 Carton Erector (photo: IDM)

Süpdpack: Recyclable packaging

Südpack presented new developments in recyclable packaging for the food industry. The company focused on lightweight mono-material films and thermoforming solutions as well as on its EcoTrace service for life cycle assessments of flexible packaging.

Among the exhibits was the new CarbonLite product family, based on PP and PE. The recyclable materials can be used for various applications, such as PE flowpacks for cuts of cheese. They offer good processing performance on existing equipment and help reduce material consumption and carbon footprint compared to conventional multilayer structures.

Südpack also showed a range of material-efficient, recyclable solutions for the safe and efficient packaging of sausages, cheese, or meat. The portfolio includes thermoformable rigid and flexible films, peelable and multi-peel top webs from the PP and PE Pure-Line, as well as Peel PET floatable – an innovative top web that can be separated from an APET bottom web or tray during recycling thanks to its floating properties. All material structures offer good sealing properties, even when the seal area is contaminated, as well as outstanding barrier properties.

In addition, the company presented updated skin films that combine reduced material thickness with reliable product protection and shelf life.

Südpack showed a range of material-efficient, recyclable solutions (photo: Südpack)

Preservation meets performance

The label-friendly cultures shaping premium cheese

Author: Thomas Eiting, Regional Sales Director, DACH & the NL at dsm-firmenich

The modern cheese counter tells a quiet but profound story about consumer trust. Where once the ingredients list was an afterthought, it's now the first thing many shoppers read. "Additive-free," "organic," and "natural" labels have all come to signal quality, safety, and authenticity. For cheesemakers, this presents an imperative, and an opportunity – namely to meet rising expectations for label-friendly cheese without sacrificing protection, yield, or flavor. In short, "natural" is the new benchmark of dairy craftsmanship.

This is where dsm-firmenich's Dairy Safe™ cultures help brands stay ahead of the curve – and the wheel. Designed for label-friendly cheese production, these next generation cultures go far beyond traditional preservation aids. They enhance food safety, strengthen sensory appeal, and protect producers' reputation and profitability. In the following sections, we'll explore how Dairy Safe is transforming cheesemaking – where traditional craft meets precision science to deliver cleaner, more consistent results.

The pressure to "clean up" cheese labels

Across global markets, consumers are taking a firmer stance on additives. In Europe, 67% now avoid foods with unfamiliar ingredients[1], while three in four global consumers say they would pay more for products free from artificial colors, flavors, and preservatives.[2] The message is clear: label-friendly has become the rule, not the expectation.

The implications for cheese production are anything but simple. Traditional preservatives such as nitrate or lysozyme have long been used to combat spoilage, but both come with trade-offs. Nitrate is classed as an artificial preservative, restricting organic and label-friendly claims, and can also depress whey quality during production. Lysozyme, on the other hand, is derived from egg protein, raising allergen concerns and consumer hesitance. For producers, these ingredients can complicate compliance as much as they safeguard product quality.

At the same time, microbial spoilage remains a costly threat. Late blowing, butyric acid fermentation, and slits and cracks can downgrade entire batches – undermining margins and brand confidence. The pursuit of additive-free, phage-resistant, and efficient cheese production has therefore evolved from a technical ambition to a commercial imperative.

photo: shutterstock

Why traditional preservation methods no longer make the cut

Lysozyme and nitrate have long served cheesemakers well, but both are under growing scrutiny in a market where "chemical-free" signals trust. Lysozyme must appear on ingredient lists under its E-number (E1105) and carries an allergen risk, while nitrate (E251) often underperforms in goat or sheep milk. As nitrate transfers into whey, it can also reduce the value of by-products. These constraints make it difficult for producers to pursue premium or organic claims without re-engineering the preservation strategy altogether.

Conventional additives also can't match the multifaceted benefits of modern culture science. They don't improve phage robustness, flavor formation, or texture consistency. Nor can they adapt dynamically to varying milk sources or temperature profiles. As a result, the industry is moving away from chemical preservatives toward solutions that achieve the same goals naturally – effective, adaptive, and inherently label-friendly.

Where label-friendly meets control: cultures made for modern cheesemaking

Natural fermentation solutions like dsm-firmenich's Dairy Safe cultures were developed in direct dialogue with cheese industry needs. These next-generation, all-in-one cultures combine bioprotection with high nisin (a natural antimicrobial peptide) production, balanced acidification, flavor and optional gas formation – now further strengthened with enhanced phage robustness and higher temperature resistance. The result is comprehensive protection and consistent performance across a wider range of cheese types, from continental and semi-hard to hard varieties.

The innovation here lies in the balance of microbial architecture. Each culture includes nisin-producing Lactococcus lactis strains, which inhibit sporeformers such as Clostridium tyrobutyricum and non-starter lactic acid bacteria, with nisin-immune strains that ensure steady acidification and flavor development. By affecting cell membrane integrity, these cultures suppress butyric acid fermentation and the outgrowth of undesired organisms – providing built-in bioprotection and sensory stability throughout production.

Where traditional additives act externally, Dairy Safe works from within. During acidification, the nisin-producing cultures release this natural antimicrobial peptide

directly into the cheese matrix, preventing the growth of spoilage organisms from day one. The result is effective protection without E-numbers, non-dairy allergens, or labeling compromises.

Equally important is phage management. The new cultures incorporate extra strains per round, improving resistance to bacteriophage attack – a persistent challenge in high-throughput dairies. This resilience supports longer production runs, fewer interruptions, and reduced risk of fermentation failure. Enhanced temperature tolerance further increases versatility, broadening application opportunities for label-friendly cheeses.

Beyond preservation: Cultures that create value

Bioprotection is only part of the picture. The real power of label-friendly cultures like Dairy Safe lies in what they add, not just what they prevent. By optimizing flavor, texture, and process efficiency, they deliver measurable gains in both product quality and profitability.

Flavor development is a prime example. Here, bioprotection works hand in hand with biochemistry. Nisin triggers natural cell lysis, releasing intracellular enzymes that break down casein into flavor-precursor amino acids. These compounds mature into rich flavor notes during ripening, delivering either a buttery-savory or sweet-bouillon profile, depending on the culture variant. The result is fast, full flavor development and a reduced need for long aging times – a major advantage at a time of rising storage costs and mounting market demand for premium-tasting cheeses.

Texture and appearance also benefit. Whether for eye-forming or non-eye-forming cheese types, Dairy Safe cultures deliver consistent acidification and controlled gas production. The result is uniform texture and, where desired, attractive eye formation – a hallmark of craftsmanship that consumers instinctively associate with continental quality. The absence of chemical additives too aligns with consumer ideals of naturalness, enabling label-friendly or organic positioning without sacrificing technical control. The operational value is equally tangible. By eliminating nitrate, whey quality improves, increasing its commercial value as a co-product. More stable fermentation means fewer downgrades and less waste, directly boosting yield and profitability. In a market where just a few percentage points can separate profit from loss, these gains make a measurable difference.

Consumer expectations meet manufacturing excellence

It's tempting to think of "consumer trends" and "manufacturing challenges"

NEWS

ADAPA GROUP
Significant investments

The adapa Group is investing in new equipment to strengthen its technological base and improve efficiency and sustainability across its European operations.

At its Kempten site in Germany, adapa has commissioned two new shrink film extrusion lines from Macro Engineering. These systems expand the plant's longstanding expertise in shrink packaging and increase capacities for PE-based, recyclable film solutions. One line is already in operation, while the second will start up in early 2026.

Two new printing presses from Uteco – one flexo and one rotogravure line – have also been installed. They enable high-quality printing in up to nine colours, both reverse and surface printing, and the use of special coatings, including on paper substrates.

As part of a broader modernization program, adapa has additionally installed new slitter machines at its sites in Poland and the Netherlands.

"With these investments, we are strengthening our production capabilities and ensuring the long-term competitiveness of our sites," says Alena Maran, Head of Strategy and Marketing at adapa Group.

adapa's new shrink film extrusion lines (photo: adapa Group)

as separate conversations, but in cheese production, they are inseparable. Each label-friendly claim rests on a foundation of scientific precision: every additive removed reshapes the microbial balance that governs acidification, eye formation, and flavor development.

Culture innovation bridges that gap between desire and delivery. Solutions like Dairy Safe go beyond traditional preservation to combine bioprotective performance and label transparency – empowering dairies to meet evolving consumer standards for naturalness and trust without compromising product stability or safety.

The new value equation: Quality, efficiency, and flexibility

Culture innovation is not a background process but a strategic lever for quality and consistency. By preventing spoilage at its microbial root, Dairy Safe cultures help safeguard milk utilization, reduce waste, and sustain production continuity. Their reliable performance across cow, goat, and sheep milk gives producers freedom to adapt to seasonal or regional variation without reworking formulations.

Equally important, their label-friendly and certification compatibility – supporting Kosher, Halal, non-GMO, and organic positioning – helps dairies reach markets where provenance and integrity drive choice. In this sense, microbial innovation becomes a platform for both operational confidence and brand credibility.

Closing the loop: A new era of natural precision

In cheesemaking, progress rarely results from compromise, but rather from a careful balance of safety, craftsmanship, and technological precision. Dairy Safe cultures reflect this balance: they combine protective functions with process stability while also supporting the flavor, texture, and appearance that define high-quality cheese.

By eliminating the need for additives such as nitrate or lysozyme, formulations become simpler and labeling more transparent. In this way, Dairy Safe cultures help meet current expectations for naturalness and clean labeling without reducing product quality or safety.

1 EIT Food Consumer Observatory, 2024
2 Food Chain Magazine. The Future of Clean Label Ingredients in Food Production. July 2024.

Digitalization – service by performance partnership

Improving production reliability and operational efficiency

GEA InsightPartner EvoHDry is part of the comprehensive GEA Service Performance Partnership (photo: GEA)

GEA has launched its new digital service product, GEA InsightPartner® EvoHDry, an advanced condition monitoring tool designed to improve production reliability and operational efficiency in dairy and beverage plants. The system has been engineered specifically for complex industrial environments, where uninterrupted operation is essential for producing high-quality products such as infant formula, cream, evaporated milk, condensed milk, and cheese.

Condition-based monitoring of critical plant components

GEA InsightPartner EvoHDry applies real-time condition monitoring, a maintenance approach based on continuous collection and analysis of machine data to detect early warning signs of equipment degradation. Parameters such as temperature, pressure, vibration, and flow are tracked in real time, giving operators a clear view of system performance. The solution offers an App and web-based component status to receive real-time information on machine health. In the dairy sector, one of the most frequent causes of unplanned downtime is a gradual loss of suction pressure in vacuum pumps within evaporation systems. This condition reduces evaporator efficiency, causing output to fall below target performance thresholds and potentially forcing an unplanned shutdown. Failures of this kind are commonly linked to dry running, wear in pump components, or lubrication loss when product contamination occurs. GEA InsightPartner EvoHDry employs predictive analytics to recognize these patterns early and generate pre-alarm notifications that prompt intervention before a critical failure takes place.

Tackling industry-wide maintenance challenges

Beyond specific equipment failures, many dairy and liquid plants face broader operational challenges. Modern process plants rely heavily on SCADA systems (Supervisory Control and Data Acquisition) to monitor operations, but the number of alarms generated can overwhelm operators, making it difficult to filter and prioritize issues. At the same time, shortages of skilled technicians mean fewer personnel are available to interpret alarms or carry out diagnostics. Traditional manual checks consume time and resources, while the absence of an integrated view of machine health often forces teams into reactive, emergency-driven maintenance. GEA InsightPartner EvoHDry addresses these problems by combining expert maintenance guidance with data-driven decision-making. Through real-time insights and predictive trends, operators can focus on the most critical issues, optimize maintenance schedules, and keep production on track.

State of the art technical setup

The technical setup is designed for both accuracy and security. It includes market-leading sensors for vibration, flow, and pressure,

The new digital service tool provides real-time diagnostics, pre-alerts and maintenance recommendations from experts to reduce unplanned downtime in evaporation, drying and liquid systems. (photo: GEA/Getty Images)

as well as links, cables, and an edge gateway – a local computing device that collects and preprocesses data before sending it to the cloud. By processing data locally, the gateway ensures rapid response times and reduces dependence on external networks. The system operates independently of the customer's IT infrastructure, so no direct access to plant networks is required, minimizing cybersecurity risks. Once preprocessed, data is transferred securely to the GEA Cloud and GEA Portal, where GEA's proprietary modeling algorithms evaluate equipment condition. Certified vibration specialists then validate diagnostics, adding human expertise to automated analysis.

Seamless integration of OEM expertise

The solution draws on GEA's role as an Original Equipment Manufacturer (OEM), embedding decades of equipment and process expertise directly into its digital services. GEA InsightPartner EvoHDry has been tailored for evaporators, spray dryers, pumps, and rotating equipment, with monitoring extending from the vacuum stage through to CIP (Clean-in-Place) cycles, providing full coverage of peripheral systems. By aligning maintenance schedules with predictive recommendations, operators can extend equipment lifespan, minimize costs linked to downtime, and stabilize long-term production performance.

Digital Twins in the EU Project “Center of Vocational Excellence”

Author:
Torsten Sach, Managing Director ZDM

The EU project launched in early May 2022 to establish nine “Centers of Vocational Excellence (CoVE) in the European Dairy Sector” aims to strengthen the competitiveness of Europe’s dairy industry. This will also be achieved through the exemplary implementation of digital processes and learning methods. Within this four-year project, the Central Association of German Dairy Professionals (ZDM) is one of five partners and serves as the German coordinator.

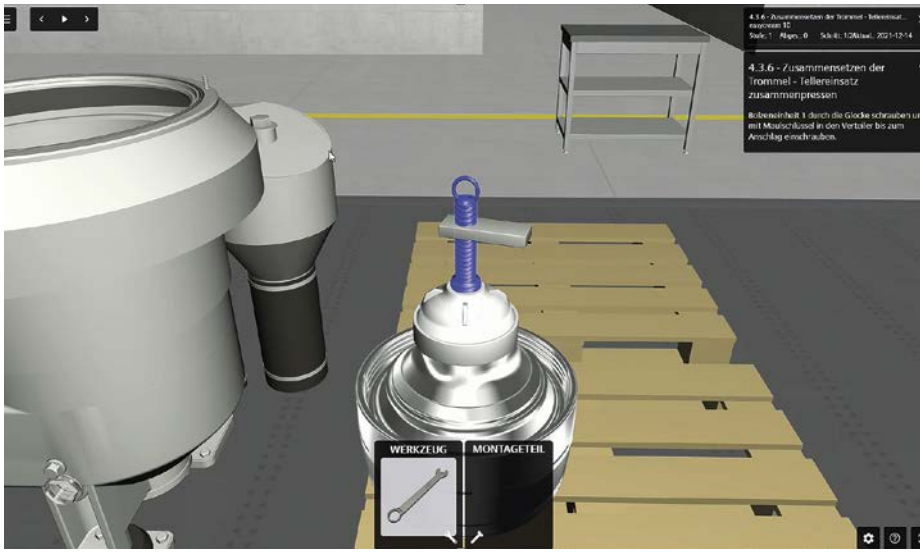
As part of this project, Germany committed to developing four so-called “digital twins” to support vocational education and training. At the Training Dairy of the Dairy Training and Research Center (LVZM) in Malente, two “Virtual Training Systems (VTS)” have been created for the separator and the plate heat exchanger.

With these VTS, users can simulate and practice the disassembly and reassembly of these systems for maintenance purposes on a computer—without physical contact and without the risk of damaging the equipment.

The operating room of the training dairy has also been created as a fully functional “real” digital twin.

This system allows the physical plant to be operated through its actual control system. More importantly, the digital twin enables process steps to be simulated without access to physical equipment or the use of raw materials. In the virtual environment, deliberate operating errors can be introduced to demonstrate their effects to trainees and help prevent such mistakes in real-life operations.

At DMK’s production site in Nordhackstedt, a second digital twin was developed for a mozzarella production line. In



source: Siemens

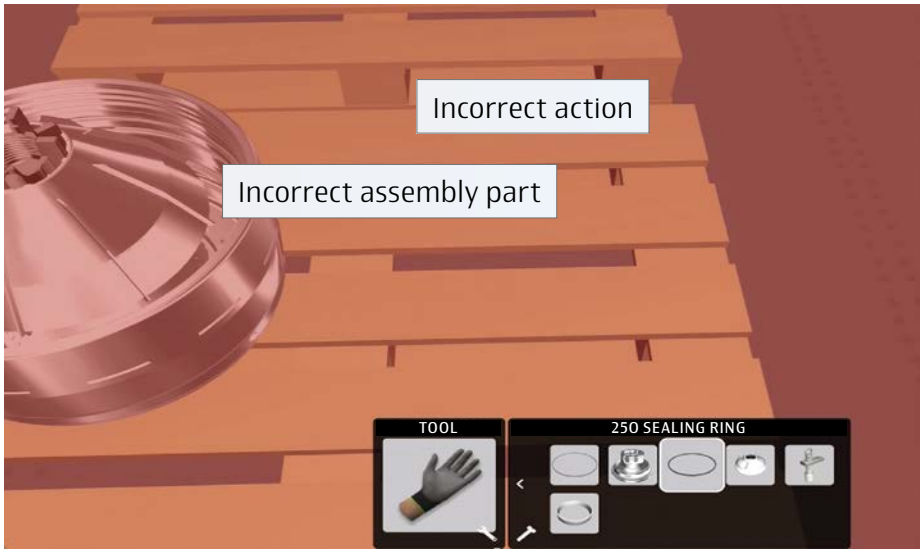
addition to preventing errors, this digital twin can serve as a tool for production and raw material planners as well as production staff. It enables the tracking of planned raw material deliveries and the management of production processes. For raw material planning, the benefit lies in optimizing the timing of incoming materials. If machine downtime occurs, production staff can report potential bottlenecks to the raw material planners, who can then adjust deliveries accordingly.

All results of this EU project are published on the Dairy Hub (https://dairylearninghub.com) and include the following:

1. **Public area – "DairyIDEAS":** A catalog of specialized courses offered by project partners, along with news and events.
2. **The Teacher Space:** A members-only area designed to foster networking among instructors and teachers and to provide access to resources such as learning materials, case studies, study visits, and workshops.
3. **The Dairy Learning Management System (DLMS):** Online, self-guided dairy-specific courses with access to the French paid e-learning portal "webalim."

During the project period, which runs until the end of May 2026, dairy schools and universities across the EU can use this e-learning platform under special conditions. Starting in September 2025, for example, the LVZM in Bad Malente and the Training, Research, and Specialist Center (LVFZ) for Dairy Science in Kempten will use webalim for vocational and advanced training.

The overarching goal of the CoVE project is to create a virtual learning environment for the European dairy sector.



source: LVZM Malente

source: Siemens

AEDIL DAIRY
AEDIL
Co-funded by the European Union

“Nourishing a Sustainable Future, Nurturing Innovation”

EDA Annual Convention 2025 in Utrecht

The conference guiding line “Competitive, resilient and sustainable dairy” was approached from three different angles: the future of our industry, the role of research and knowledge centres and the power of partnership with innovation suppliers.

With a documentary on ‘Rooted Future. Dedicated to Dairy’s Tomorrow’, and with an de-brief by Nuffield Scholar Wilco Brouwer de Koning (LTO, dairy farmer), the milk supply side was a prominent part of this EDA Convention.

The new EDA President Albert de Groot (CEO Vreugdenhil) welcomed more than 200 attendees for the annual European dairy gathering on Thursday, 13 November in the historic city of Utrecht in the Netherlands. “Dairy is back at the centre of the nutritional and societal debates”. “Milk and dairy are the cornerstone of nutritious and sustainable diets – dairy is magic.” Our sector shows remarkable resilience and global leadership even in volatile times, driven by the people who innovate and keep the value chain strong. We must continue seizing opportunities, reinforcing our supply chain and investing in progress. Dairy has a strong future in Europe, and together we will keep shaping it with ambition and confidence.

Mireille Einwachter, President of the Dutch Dairy Organisation NZO, highlighted in her opening speech that dairy success is built on collaboration: “With unity and ambition the dairy sector can build a sustainable future”.

“Dairy will remain vital in feeding people, supporting communities and shaping Europe’s agricultural future”, with this bold statement Dutch Minister for Agriculture, Fisheries, Food Safety and Nature, Femke Wiersma, a former dairy farmer, opened her key-note address. Dairy is part of our heritage, our culture and the lifeblood of many rural communities. It delivers food security, jobs and economic strength, while reflecting centuries of quality and craftsmanship.

“This Commission will rebalance sustainability with competitiveness”, stated Alisa Tiganj, member of the Cabinet of Commissioner for Agriculture and Food Christophe Hansen, in her key-note.

The new Commission is in office since almost one year and in this year, we have focused on rebuilding trust with farmers and the wider agri-food sector. “The dairy sector is also a strategic component of our economic security, resilience and competitiveness. Our work now centres on simplification, innovation and opening global opportunities. European quality and origin must stay visible worldwide. Our priority is partnership and continuity to ensure a strong, future-ready dairy sector”, highlighted Alisa Tiganj in her speech.

EDA secretary general Alexander Anton welcomed the Chair of the Committee on Agrarian and Land Policy of the Ukrainian Parliament, MP Alexander Gaydu: “Today, Ukraine continues to fight for its existence. Despite the war, our European integration makes progress and the Ukrainian dairy sector is the most advanced in terms of EU integration – special thanks go to the European Dairy Association for its real support here!”

EDA President Albert de Groot

NZO President Mireille Einwachter (right) with Alisa Tiganj (cabinet of EU Commissioner C. Hansen)

Femke Wiersma, Dutch Minister for Agriculture, Fisheries, Food Safety and Nature

Competitive, resilient and sustainable dairy – the future of our industry

After a high-level lecture on the state of play of todays' geopolitics by Prof Dr. Rob de Wijk (The Hague Centre for Strategic Studies), a leaders' panel with Mary Keough Ledman, Jan Derck van Karnebeek (CEO RFC), Katja Seidenschnur (Nestlé global head of sustainability & nutrition) and Hubertus Gay (OECD head of agro-food trade) exchanged on how to accelerate the transition together.

"Sustainability, food security, and competitiveness need to be balanced out. Innovation matters, but even more important is learning from each other through cooperation and collaboration", stated Jan Derck van Karnebeek (CEO RFC).

Alisa Tiganj (cabinet of EU Commissioner C. Hansen)

From Insight to Action: How Knowledge Institutes contribute to shaping the Future

For the first panel discussion of the afternoon, Ernst Van Den Ende (Director Animal Sciences of the Wageningen University), Thom Huppertz (professor of Dairy Research & Innovation, University College Cork) and Lea Brader (Senior Nutrition Scientist, Arla Foods) discussed the importance of knowledge institutes in shaping the future of dairy. Thom Huppertz pointed out his 'credo' as an academic: "Complexity is not scary, confusion is".

Chair of the Committee on Agrarian and Land Policy of the Ukrainian Parliament, Alexander Gaydu, Member of Parliament

Power in Partnership: Innovative solutions towards a Sustainable and Resilient Dairy Systems

The last panel of the day focused on partnerships with speakers Ilonka Nennie (Sustainability Manager, Vreugdenhil Dairy Foods), Dennis Rijnders (Vice President Global Sales & Business Development Bovaer at dsm-firmenich), Jan Bobbink (Director, Qlip) and Lorenzo Van Haelst (managing director Tetra Pak France, Belgium and the Netherlands) discussing how to create solutions for sustainable and resilient dairy systems.

Jan Derck van Karnebeek (CEO RFC)

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NEWS

GIVAUDAN TASTE & WELLBEING
New production facility

Givaudan Taste & Wellbeing has started construction of a new liquids production facility in Reading, near Cincinnati, Ohio. The CHF 187 million (USD 215 million) investment will expand the company's operational footprint in North America and cover 24,000 square metres, with additional space reserved for future growth.

"This is our largest US investment in many years and a clear signal of our long-term commitment to the region," said CEO Gilles Andrier. The facility will focus on efficient, sustainable production and is expected to create over 300 jobs once fully operational.

The site will operate without natural gas to reduce greenhouse gas emissions and will feature technologies such as carbon bed filtration. Givaudan also plans to support local education and community programmes as part of the project.

Givaudan Taste & Wellbeing has started construction of a new liquids production facility in Reading, near Cincinnati, Ohio (photo: Givaudan)

Construction is underway, with completion expected within 18 months and initial operations starting in 2027. Givaudan Taste & Wellbeing currently operates 17 sites across the US and Canada.

photo: Izba Lubuńska

Development of the dairy industry in Eastern Europe
Country Report

photo: Arla/GEA

Reduction of CO_2 emissions
Technology/IT

photo: Darren Soh

Ongoing investment in the Asian Market
Ingredients

photo: aamulya_stock.adobe.com

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