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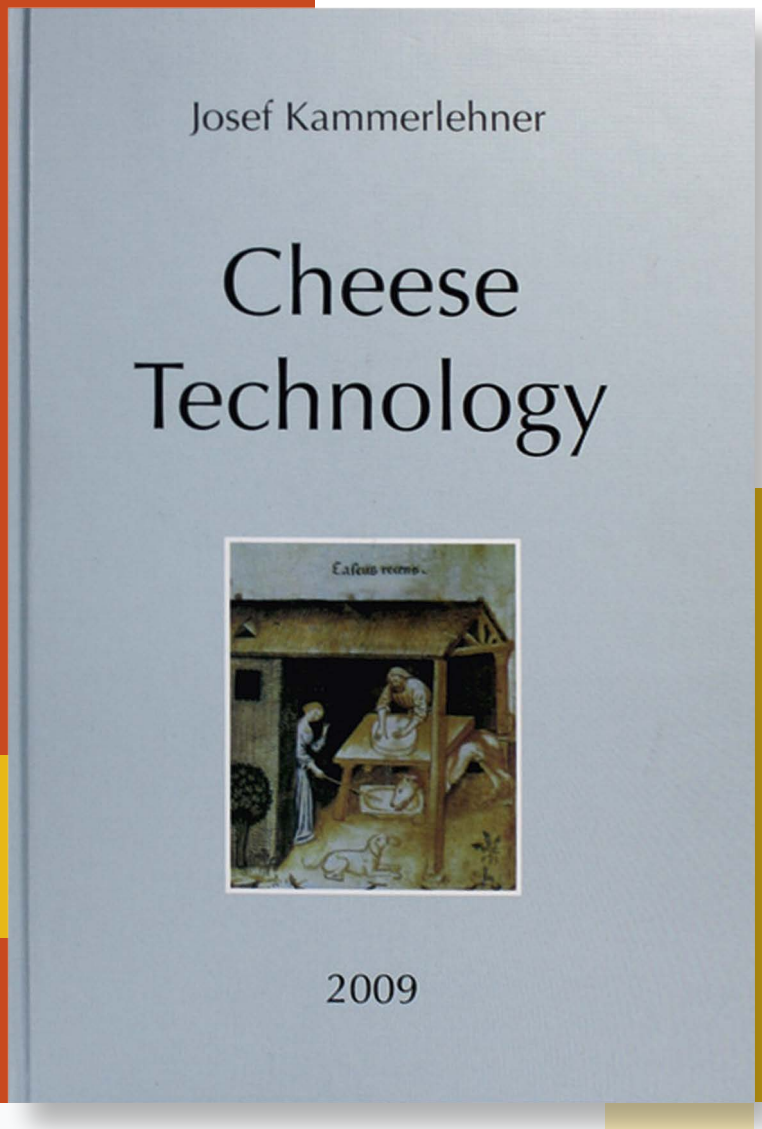
# Learn from the expert!

The CHEESE TECHNOLOGY book has been a German a long-standing, widely appreciated benchmark and is now available in English. The book comprises all fields of cheese technology in an exemplary extent and depth. Much of the latest literature has been reviewed and insights thereof integrated in this book.




Further information and order:
**blmedien.de/cheese-technology**

**THE BOOK HAS 9 CHAPTERS:**

General overview, divided into definition, processing scheme, history, significance of the various groups of cheese concerning nutrition Raw material and additives for the production for various groups of cheese Varieties of the respective groups of cheese as well as their manufacturing processes and evaluation (quality, shelf life, etc.) Packaging of the various cheese groups Influences on quality, checking and quality assurance Description of defects and notes for improving quality issues.

This book addresses above all cheese makers but also trainees as well as students, graduates of food technology and scientists. For special instructors, this book is a solid base for courses or lectures. It is an extremely valuable help as reference book for dairy specialists and the cheese industry as well as for technical advisers and suppliers. CHEESE TECHNOLOGY makes an invaluable contribution to the preservation and documentation of accumulated know-how of cheese technology across decades.

CHEESE TECHNOLOGY
by Josef Kammerlehner, 930 pages, ISBN: 978-3-00-021038-9, € 155 plus € 4,99 shipping

# Reform of the European agricultural policy

## Movement also on the issue of compulsory grazing

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The Common Agricultural Policy (CAP) is to become simpler, more targeted and more effective. The reform package means that support measures and their specific amounts will no longer be decided uniformly for all farmers in Europe at EU level, but will essentially be negotiated bilaterally between the EU Commission and the respective member state.

The Commission wants to give the member states more room for manoeuvre. However, critics warn that the CAP will be renationalised in this way and that unequal competitive conditions will distort the internal market.

There is also movement on the issue of compulsory grazing for organic farms. This stipulates that ruminants must be given access to pasture for at least 120 days per year, with several hours of grazing per day. While this requirement applies legally in all member states, it is implemented with varying degrees of rigour in practice, with countries such as the Netherlands, France and Belgium specifically promoting grazing through subsidies, while other countries give farms more leeway. Although the grazing obligation is binding throughout the EU, its practical implementation varies considerably from country to country. Smaller organic dairy farms in regions with scarce grazing land or infrastructural restrictions in particular have difficulties complying with the requirements. Many farms fear that they will have to cease production. Agriculture Commissioner Christophe Hansen has now signaled that the EU organic regulation will be opened up before the end of this year in order to find a solution for organic farms regarding the grazing obligation and to allow for pragmatic solutions.

Ultimately, it remains to be seen what Hansen's planned 'opening up' of the regulation will bring, as not only the livelihoods of numerous small farmers are at stake, but dairies would also have to cope with the loss of considerable quantities of organic milk

thinks
**Anja Hoffrichter**

NEWS

## FRIESLANDCAMPINA PROFESSIONAL AND IMCD

### Expansion of strategic distribution partnership across key EMEA

IMCD and FrieslandCampina Professional have announced an expansion of their strategic distribution partnership across key EMEA (Europe, Middle East, and Africa) markets. As of 1 January 2026, IMCD will distribute FrieslandCampina Professional's Kievit portfolio of food and beverage ingredients in several new markets. Together, they will deliver enhanced value to food and beverage manufacturers by combining IMCD's local reach, technical expertise and formulation capabilities with FrieslandCampina Professional's proven ingredient solutions.

Building on a successful collaboration in select countries including Italy, the Nordics, Poland, South & East Africa, UK and Ireland, the extended agreement positions IMCD as the sole distribution partner for FrieslandCampina Professional's full range of food and beverage ingredient solutions. IMCD, will now serve new markets including Germany, France, Iberia, the Middle East (including Saudi Arabia, the UAE, Jordan, Kuwait, Lebanon, and Bahrain), Switzerland, and Greece.

photo: IMCD

NEWS

## DOMINO

### New Piezo Inkjet Solution

Domino's new Cx150i provides a solution for printing durable, large-area, high-resolution product codes on non-porous surfaces. The company's latest piezo inkjet (PIJ) printer has been specifically developed to offer a solution for printing durable, large-area, high-resolution codes onto non-porous surfaces, including shelf-ready and secondary packaging.

The high-resolution (up to 600dpi) system can print exceptionally small characters of just 1 mm, making it suitable for small Asian character sets, and dense 2D codes – including QR codes powered by GS1. A range of different inks are available, including options that adhere to international GMP standards and EuPIA compliance for safe use on secondary food packaging.

The Cx150i can be installed as a standalone unit or alongside Domino's automated coding and vision systems as part of a closed-loop printing and verification solution. The printer is Industry 4.0-ready, offering a broad range of connectivity options, including connection to third-party label creation packages, factory ERP systems, and a wide range of packaging and processing equipment. Optional connection to Domino's cloud-based services provides 24/7 visibility of the printer's performance and utilisation.


Domino's new Cx150i piezo inkjet printer (photo: Domino)

Manufacturers partnering with Domino for their secondary packaging printing will benefit from the support of a global company with a worldwide service network.





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# Novelle Kaas uses raslysation

## Danish technology changes regulations in the Netherlands


*The Klaver family, owners of Dutch farm dairy Novelle Kaas, that protect their raw milk cheese using UV-technology raslysation*

Now raw milk cheese can be protected against unwanted bacteria while preserving its unique flavor. The Dutch farm dairy Novelle Kaas safeguards its raw milk cheese using raslysation, an energy- and water-saving technology developed by the Danish company Lyras. This ensures both high food safety and good taste, as the cheese's natural vitamins, enzymes, and proteins are preserved. At the same time, food waste is reduced, since spoilage caused by bacteria such as listeria no longer leads to large batches being discarded.

As the first raw milk cheese producer in the world, Novelle Kaas now protects its product using the raslysation technology. The technology eliminates harmful microorganisms while preserving the original taste and nutrients of the milk. In productions based on raw milk, it is crucial that harmful microorganisms do not take over and spoil the cheese.

"With Lyras' technology, we get both the highest food safety and the rich raw milk flavor that we and our customers love," says farmer Wim Klaver, one half of the couple behind Novelle Kaas.

"We see nature as a great asset. That's why we want to produce cheese that is as natural as possible and makes optimal


*Novelle Kaas raw milk cheese secured with raslysation technology from Lyras*

use of the raw material. Raslysation gives us control over microbiology through UV light, so we have high food safety and less waste. At the same time, we preserve the milk's original flavor and texture." adds Joyce Mijts, the other half of Novelle Kaas.

## Danish technology changes regulations in the Netherlands

It took about a year to develop a process for the treatment of raw milk cheese for Novelle Kaas.

Raslysation has been approved for use at Novelle Kaas by Dutch authorities after The Stichting Controle Orgaan Kwaliteits Zaken (COKZ) thoroughly reviewed the dairy's risk analysis and internal auditing plan. Across Europe, many small farm dairies produce cheese from raw milk.

Lyras has now taken the first steps and created a facility that enables the process to be quickly installed at other raw milk cheese producers

"We expect raslysation to be included in the upcoming revision of the industry code for farm dairies in the Netherlands. Hopefully, this will pave the way for more widespread use. It would benefit the environment, food safety, and farm dairies' bottom lines. Food waste would also decrease, as large batches of raw milk cheese would no longer need to be discarded due to contamination by unwanted bacteria," says Mark Kalhøj Andersen, CEO of Lyras.

*The raslysation technology now secures the food safety of Novelle Kaas' raw milk cheese but keeps the refined taste*

## Food safety through light

Raslysation uses a combination of UV light and turbulent flow to effectively inactivate bacteria. UV light has been used for water purification for many years. With Lyras' technology, UV light can now also treat opaque liquids. This is achieved by passing, for example, milk past the light source in a controlled turbulent flow, ensuring that the entire liquid is exposed and microorganisms are eliminated. The milk's natural vitamins, enzymes, and proteins are preserved, contributing to the unique flavor of raw milk cheese.

### Novelle Kaas

The Dutch farm dairy Novelle Kaas primarily produces raw milk cheese of the Gouda type. The farm produces 7,000 liters of milk per day. The dairy's energy supply comes in part from 260 solar panels installed on the roof of the open barn.

The specially designed Raslysation Sirius unit at Novelle Kaas processes 3,400 liters of milk per hour. This gives it capacity beyond the farm's own production, potentially allowing it to serve other dairy farmers in the future.

*Milk production is in oversupply (photo: Anasaifa)*

# Turkey's dairy industry at the turn of the tides

## Eyes on exports

Hyperinflation, falling living standards and inconsistent state policy have hit Turkey's dairy consumption hard during the last few years. The industry is slowly rebounding, hoping to capitalise on the rising tourist flow to the country and expand exports to China, Russia, and several new emerging markets.

In 2024, Turkey's raw milk production climbed by 4.7% compared with the previous year to 22.5 million tonnes, with around 93.6% of this figure or 21.5 million tonnes was cow milk production, commented Feyza Basakcoskun, general secretary of the Setbir – the Union of Dairy, Beef, Food Industrialists and Producers of Turkey.

With an 85-million population, Turkey is currently ranked the ninth world's largest and third-largest European milk producer. The industry is now in the midst of the recovery path, with production performance rebounding from the dip caused by the Covid-19 pandemic. According to Setbit data, raw milk production in the country dropped from its peak of 25.3 million tonnes in 2020 to 23.2 million tonnes in 2021 and 21.6 million tonnes in 2022, a level at which production stabilised.

Quite a few factors put pressure on Turkey's dairy industry, analysts admitted. "Production performance was heavily influenced by volatile feed and energy prices, weak pricing mechanisms, and the lack of coordinated long-term planning across the supply chain," commented Monique Naval – Senior Research Analyst at data analytics company Euromonitor International. "There is an urgent need for stable agricultural policies, improved forecasting tools, and greater investment in processing infrastructure to


*Dairy consumption is on a downward trend in Turkey (photo: Arminoks)*

*Not all segments are equally impacted by the crisis (photo: Bostanicisut)*


ensure sustainability and competitiveness," Naval added. On top of that, the dairy producers struggle to keep their operations running at maximum capacity amid waning domestic demand.

In 2024, Turkey experienced hyperinflation, with the annual rate reported at 58.51%, according to the World Bank's collection of development indicators. As the impact of economic hardships is increasingly felt in every aspect of daily life, consumers' spending habits are also undergoing a profound transformation.

## Falling consumption

According to the National Milk Council, Turkey's annual milk consumption has been on a downward trajectory over the last few years, reaching only 39 kg per capita in 2024, compared to nearly 100 kg on average in the EU. Moreover, in Turkey, the figure also includes consumption by millions of tourists visiting the country each year, meaning that the actual level of consumption by citizens could be significantly lower.

In Denizli, a region in southwest Turkey, for example, local manufacturers have been struggling against oversupply, largely caused by an unravelling economic crisis, as revealed by Mehmet Varol, president of the local union of dairy farmers. Out of 1,350 tonnes of milk dairy manufactured in the region, only 600 tonnes can be consumed locally, while the rest is sent to other provinces or converted into long-shelf-life products with the hope that it can be eventually sent for exports, Varol revealed. The cost-of-living crisis of the last few years has largely undermined dairy consumption in the country, Varol admitted.

"High inflation rates make it increasingly more difficult for low-income groups, in particular, to access milk and dairy products," Valor admitted.

## A new blow

Adding further pressure to the already reeling milk sector, the Turkish Agricultural Ministry officially banned the import of pregnant heifers starting in 2025. Analysts believe this move, aimed at making the dairy industry more self-sufficient in the long run, will, in fact, make life harder for dairy farmers. "This policy change means that no breeding cattle will be allowed to enter Turkey from abroad in the foreseeable future. The restriction is expected to have considerable implications for herd renewal and genetic improvement within the national cattle population," Naval said. Naval explained that for many years, the import of high-yielding dairy heifers had been a critical strategy for Turkish farmers aiming to improve productivity and replace ageing or underperforming animals.

*Turkey is the 9th world's largest dairy producer (photo: T.C. IĞDIR VALİLİĞİ)*

*Dairy producers bet on cheese exports (photo:T.C. IĞDIR VALİLİĞİ)*

"With this channel now closed, the sector may face challenges in maintaining herd quality and production efficiency, particularly if domestic breeding programs are not scaled up to meet the demand. The ban also raises broader concerns about long-term sustainability, self-sufficiency, and the capacity of local genetic resources to support continued growth in milk output," Naval admitted.

## Eyes on exports

Amid a challenging domestic market situation, Turkey's dairy firms are doubling down on exports, but this bet has yet to pay off.

In 2024, Turkey exported dairy products worth $431 million, while import was valued at $84 million, Basakcoskun revealed. Although Turkey remains a net dairy exporter, the foreign trade dynamics last year were negative. "Unfortunately, exports decreased in some product categories," Basakcoskun admitted. "Turkey lost its price advantage, especially in milk powder and butter exports, due to the decrease in international production costs, and exports of these products dropped". However, the general industry's focus on ramping up sales to foreign customers is here to stay.

"The sector aims to increase its export potential by focusing on high-value-added products. In this context, strategies such as branding, strengthening the logistics infrastructure and popularising international quality certificates are gaining importance," Basakcoskun emphasised. In addition, training and analysis studies are ongoing with the aim of facilitating exports to the new markets. "The countries to which we export the most are the Middle Eastern countries and the "Turkish Republics". The new markets determined as targets are the EU, Russia and China," Basakcoskun said, adding that the country is primarily exporting milk powder, whey powder, cheese and ice cream.

The term "Turkic republics" typically refers to the countries where Turkic languages are widely spoken and where a significant portion of the population has Turkic ancestry. These include Azerbaijan, Kazakhstan, Kyrgyzstan, Turkmenistan, and Uzbekistan.

## Light at the end of the tunnel

Although the past few years were somewhat turbulent, market players and analysts believe the industry will navigate safer waters in the next several years. Turkey's dairy products market is expected to show steady incremental growth, among other things, primarily due to an improving inflation environment, Naval said. Indeed, the Turkish annual inflation rate has noticeably cooled in the first half of 2025, indicating that the economic crisis is finally easing its grip on the country. "Growth is likely to remain volume-drive, particularly within categories like milk and yoghurt, with premium segments growing more slowly due to persistent price sensitivity," Naval added. Turkey's strong domestic tourism and urban middle-class growth will further bolster demand, especially in out-of-home consumption channels, Naval stated. Turkey is projected to experience significant growth in its tourism sector by 2030, with anticipated tourist arrivals potentially reaching 70 million or more, compared to slightly over 50 million last year. The Turkish government is actively working to achieve this goal, targeting annual tourism revenues of $100 billion by the 2030's. Such a rise in tourism activity is projected to have a noticeable impact on domestic food consumption figures.

According to Basakcoskun, dairy consumption is anticipated to grow, especially in the yoghurt, cheese and functional dairy products segments, "The tourist flow creates vitality in the sector by increasing the demand for local dairy products, especially in tourist regions," Basakcoskun said, adding that the strong demand for foreign visitors also bolsters the demand for high-quality products.

## Sustainability is the key

Aside from ensuring production growth, Turkey's dairy industry will face other challenges in the coming years, Basakcoskun said. "In the global food system, the dairy sector is not just a production line; it is also a strategic area at the centre of environmental, economic and social sustainability. In this context, we have to prepare for some critical issues that may be encountered in the coming period," Basakcoskun said. "The impact of climate change on agriculture and animal husbandry continues to increase. In order to eliminate these impacts in an area sensitive to water, food and energy, such as milk production, we must prioritise environmental sustainability," Basakcoskun added. Basakcoskun explained that this involves a long list of actions, including reducing external dependency on feed production, protecting pasture assets, waste management and controlling greenhouse gas emissions. "In addition, social dimensions such as making rural production sustainable, attracting the young population to production and utilising women's labour should also be taken into consideration," Basakcoskun said. "The development of rural areas will be possible by making animal husbandry attractive. In this sense, there is a great need for education, financing and technology-supported projects that both the public and private sectors will carry out together".

Investments in research and development are necessary to advance the industry to a new technical level. "Studies need to be increased in areas such as the transition to an economy of scale, product traceability, compliance with quality standards and sustainable packaging," Basakcoskun stated.

# drinktec

Grow with the Flow

## 15 to 19 September, Munich


photo: YONTEX GmbH & Co. KG / Thomas Plettenberg

From 15 to 19 September 2025, over 1,000 exhibitors from more than 50 countries will come together in Munich to showcase the latest trends in beverage and liquid food production. Spanning over 73,000 square metres, exhibitors will present solutions and expertise covering the entire value chain, addressing all industry challenges.

The new "Liquidrome" format is intended to provide an area for knowledge exchange, exhibitor presentations and an exchange with science and research. This activity area expands the spectrum of information available to visitors and is intended to offer prospects for new product creations, the application of innovative technologies and market strategies. In close cooperation with the conceptual sponsor of drinktec, VDMA Food Processing and Packaging Machinery Association, these offerings will be bundled under three main themes.

Under the topic 'Circularity & Resource Management', topics such as water reuse and wastewater treatment will be addressed. Additional focal points include energy recovery, the use of by-products from production processes, and more efficient packaging material usage. The implementation of the EU's Packaging and Packaging Waste Regulation (PPWR) will also be reflected in the lecture programme.

The second topic, 'Data2Value', focuses on process transparency and the integration of machine learning and AI-based applications. Topics include flavour prediction models and predictive maintenance. The third topic, 'Lifestyle & Health', provides inspiration on flavour solutions for low- or no-alcohol beers, alcohol-free wines, and fermented beverages – empowering manufacturers to tap into this growing segment with optimised recipes.

Below you will find an overview of interesting new products that will be exhibited in Munich.

*LEIBINGER CIJ printers and ink solutions ensure reliable coding on a wide variety of beverage packaging materials (photo: LEIBINGER)*

## LEIBINGER: Coding & marking on any material

The GS1 Sunrise initiative is putting the spotlight on 2D codes, which will carry significantly more information than conventional barcodes. The updated standards aim to ensure that by the end of 2027, 2D codes can be used alongside conventional 1D barcodes (such as EAN/UPC) at retail points of sale worldwide. At the drinktec 2025 exhibition, LEIBINGER will be demonstrating how this transition can be successfully implemented today on all common packaging materials and under real production conditions. The company's system portfolio is successfully meeting the industry's expectations – and can reliably mark glass, aluminium, plastics, cardboard and stainless steel. Even in high humidity, with frequent material changes and fast lines, LEIBINGER printers deliver accurate, stable results.

Integration into existing ERP, MES and EMS systems is guaranteed via the available API interface. A convenient plug-in is also available for integration with SAP. Central remote monitoring of the marking systems reduces the workload for operating personnel, ensures process transparency and increases production efficiency.

The IQJET operates for five years without requiring any maintenance. Cartridges can be changed during operation without interrupting printing. It consumes 50% less solvent than conventional CIJ printers, requires less energy and is ready for use at any time.

## KHS: Holistic line expertise

At drinktec, the KHS Group will be exhibiting its extensive product portfolio of progressive technologies and smart services. The focus will be on new developments for all container segments. KHS is also presenting its range of digital services and training courses for line optimization.

KHS' holistic line expertise will be the key focus of the company's drinktec booth this year, says KHS CSO Tobias Wetzel: "KHS stands for progressive technologies and services that can be combined to create smart turnkey systems tailored to our customers' individual requirements. They generate considerable added value when it comes to line efficiency, resource consumption and the machine footprint."

KHS' holistic line concept is particularly evident in the digital solutions and services it provides. As part of its line management program, the expert for filling and packaging systems will be exhibiting both established and further developed software solutions, among them Innoline Basic Line Monitoring, Innoline Flex Control and KHS ConnectApp Guide. Its line connectivity services include cloud links and secure network architecture for real-time data access and protected OT systems.

For the first time, KHS will also be highlighting its new line coaching portfolio at drinktec. It teaches customers practical knowledge they can use to specifically improve line performance, supported by a broad spectrum of digital solutions.

Furthermore, KHS will introduce its replacement program, using cold glue stations for all standard KHS labelers as an example. The spare parts service with items produced using 3D printers rounds off KHS' presence at the trade show.

*Tobias Wetzel, CSO at KHS, is looking foreward to the company's exhibition at drinktec (photo: Frank Reinhold)*

The new InnoPET FreshSafe QuadBlock ombines KHS stretch blow molding, coating, filling and labeling technologies in one turnkey system. This development not only simplifies machine operation but also saves valuable space with its compact footprint.

In addition to its holistic line concept, climate and environmental protection are key pillars of the company's strategy. A example is KHS' new 0.25-liter lightweight PET bottle. Weighing just 6.2 grams for still water, it is among the lightest containers worldwide. Made of 100% recycled PET (rPET) and fully recyclable, the container is line-compatible and features high-quality material and design.

In the glass segment, KHS is launching a new bottle washer to market: the Innoclean Cascade D.

Collaboration with other technology leaders is of great importance to KHS. Since 2024, this includes Tyrolon from Austria, which specializes in conveying stars and neck clamp systems. At drinktec, the two companies will present their turnkey machinery for glass and PET lines together for the first time.

## Sidel: Optimized packaging line

Sidel is announcing a "new, groundbreaking technology" for drinktec. Visitors will be guided through an interactive tour to experience an optimised packaging line journey. Along the way, they'll have the chance to see Sidel's latest technology to unlock a new level of performance and sustainability, starting from the package's materials including 100% recycled PET solutions, to a new level in line efficiency, to sustained and elevated line performance across the lifecycle.


*Sidel's booth at Drinktec (photo: Sidel)*

"The future of the packaging industry is the ability to master the total line performance. To achieve this, Sidel partners with food and beverage manufacturers to lead the way in sustainable packaging, to elevate productivity, and to maximise performance for the lifetime of their lines," said Pietro Cassani, President & CEO, Sidel.

## Krones: Lines of the future

Resources are becoming increasingly scarce, the markets ever more agile and processes ever more complex. In this dynamic world, holistically conceived systems that provide a smart combination of technology, data and artificial intelligence are needed more than ever in order to upgrade efficiency levels, respond to changes with the requisite flexibility and save valuable resources. In Munich, Krones will show how all of that can be achieved.

The focus will be on smart and sustainable data-based or data-defined solutions that can be responsively adapted to each individual requirement, regardless of whether small batches or large volumes are involved. The days of focusing on single machines are long since over. Now, it's all about ensuring the perfect interaction of all the components in a line, which must be intelligently connected and flexibly scalable in order to achieve clear goals: reducing operating costs, enhancing resource-economy and creating processes that are even more reliable and more sustainable.

**The lines of the future**

One of the special highlights at the fair will be the fully automated and digitally connected line of the future. The line of the future features many innovations that take efficiency, flexibility and resource-economy to new heights. And although the line exhibited is for PET bottles, the Krones team is already working on futuristic connected line concepts for glass and cans as well.

The well-thought-out solutions that Krones will be showcasing for glass containers range from a new bottle washer boasting particularly gentle bottle handling, a smaller footprint and enhanced energy and media efficiency to design upgrades for filling valves for beer and spirits right through to innovative approaches aimed at ensuring flexible, cost-efficient filling.

The filling-kit exhibits presented at drinktec are supplemented by new labelling technologies and by comprehensive solutions for the Compact Class from Krones' subsidiaries Kosme and Gernep.

And Krones will be setting new benchmarks not least in the fields of digital transformation and intralogistics. Connected systems, smart intralogistics and AI-based process control systems bring more digitalisation to production sequences, thus rendering them more transparent and more efficient and assuring optimum resource allocation.

Together with its subsidiaries Steinecker, Milkron, HST, Evoguard, Ampco Pumps, Perfinox and GHS, the company will present the full range of process technologies: for water, CSDs, beer, wine, alternative foods and much more. Krones' Lifecycle Service provides customers with comprehensive support over their line's entire life cycle, starting with commissioning and ranging from predictive maintenance, reliable spare parts supply and digital remote support right through to continuous optimisation when the line is up and running.

*The focus of Krones' presence at the fair will be on intelligent and sustainable data-supported or data-defined solutions that can be adapted to the respective requirements (photo: Krones)*

## Flottweg: Largest separator in the AC series

Flottweg presents the latest member of its product family – the largest self-cleaning disk separator the company has ever developed. With its large clarifying surface and high treatment performance, this decanter from the AC series sets new standards in separation technology and is therefore particularly suitable for demanding separation tasks in the food and beverage industry.

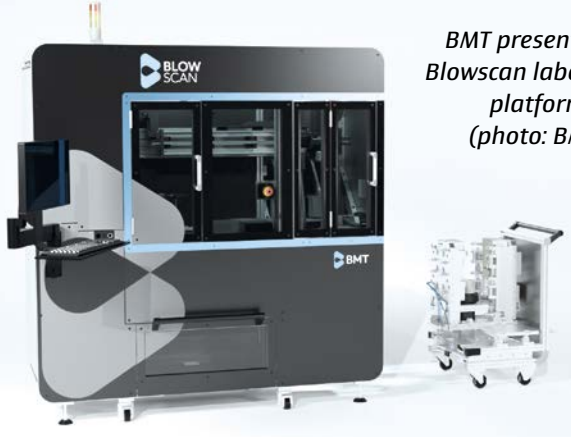
With the new development of this separator size, Flottweg is responding specifically to the requirements of its customers. The innovative machine concept enables significantly higher throughput rates in combination with Flottweg's precise separation performance for even more efficient processes.

A special highlight of the AC series is the Flottweg Soft Shot FLEX discharge system, designed specifically for the separation of solids. With this technical innovation, the Flottweg engineers have succeeded in enabling flexible adjustment of both partial and full discharge operations with minimal opening intervals that are completely independent of the bowl speed. This permits maximum product yields and an even more efficient separation process.

The Flottweg belt press complements the machine portfolio for the efficient production of fruit and vegetable juices.


*Flottweg presents the largest separator in the AC series (photo: Flottweg)*

## BMT: Simulation services




*BMT presents the Blowscan laboratory platform (photo: BMT)*

BMT (Blow Moulding Technologies), will showcase its cutting-edge hardware innovations, alongside its materials characterisation and simulation services for the global packaging industry. On show will be the lab tools, Blowscan and Thermoscan, designed to unlock data-driven improvements in stretch blow moulding.

Blowscan, a lab-based, single-cavity SBM platform delivers data-driven insight into material performance, preform quality, and bottle development, without disrupting production. Its modular design allows easy switching between free-blow and mould-blow modes. In free-blow mode, materials such as recycled PET (rPET) or bio-polymers are stretched without mould constraints, making it ideal for benchmarking material behaviour. Mould-

*BERICAP its presenting its comprehensive portfolio in Munich (photo: BERICAP)*

## BERICAP: Closure solutions

BERICAP its presenting its comprehensive portfolio at the trade fair. This year's highlights include the new Monet and Biarritz sport caps. There is also an extended range of closure solutions for carton packaging in the dairy and juice segment.

For the dairy industry the company will show the snap-on closures in the Falcon product line and the ClipAside screw cap, which offers good user convenience in all neck finishes. Another option is the Clean Cap 23 standard version with drop band, which is distinguished by its easy handling. This closure is also available in the Clip Cap 23 tethered version.

blow mode supports rapid prototyping and validation of new geometries, enabling fast iteration during early-stage design and, in some cases, improving material validation rates by up to 20%.

Thermoscan, a lab-based thermal imaging system provides fidelity temperature data for preforms and bottles. By capturing the temperature profile of a successful vPET run, teams can set informed starting points for rPET and use Thermoscan to compare and fine-tune heated preforms.

# Solutions for an energy-hungry industry

## Increasing energy efficiency in the food and beverage industry


*The use of drives allows applications in the partial load range to be operated more efficiently (photos: ABB)*

The production of food and beverages is of central importance to society and is therefore considered system-critical. However, the industry requires enormous amounts of energy. In order to reduce consumption across the board, companies have a number of effective measures and tools at their disposal. These range from energy evaluation to the optimization of motors in production to variable speed drives. ABB offers proven solutions along the entire process chain that can take energy efficiency in the food and beverage industry to a new level.

According to expert estimates, the food industry consumes around 30 percent of global energy resources and is responsible for 20 percent of greenhouse gas emissions. The sector has long been considered one of the most energy-intensive industries in the EU. The demand for food will continue to rise as the world population is expected to grow to 9.7 billion people by 2050, according to a UN forecast. In the

*The food industry is one of the most energy-intensive sectors*

context of climate protection, the food and beverage industry is increasingly focusing on reducing $CO_2$ emissions and making massive energy savings.

For this reason, leading global organizations such as the European Commission, the United Nations and the Organisation for Economic Co-operation and Development (OECD) are endeavouring to promote measures to increase energy efficiency across industry. Well-founded assessments for evaluating the energy consumption of production plants serve as an important decision-making aid. They are the first step towards achieving efficiency improvements. Energy assessments provide important information and insights that can be used to realistically determine the energy-saving potential of electrical systems, including motors and drives. ABB, for example, offers its customers professional energy reports. The company brings its in-depth knowledge of engines, drives and processes in the food and beverage industry. On this basis, complete solutions are then developed to improve energy efficiency and reduce related costs.

## Energy consumption varies by segment

The processes that require the most energy in the food and beverage industry vary by segment. In some areas, fans and pumps are responsible for most of the energy consumption. In agriculture, for example, these devices are needed for feeding animals or cooling milk. In other segments, mechanical process technologies such as mills, mixers or centrifuges consume the most energy. Many of these processes are powered by electric motors, including steam systems, pumps, compressors, and heating and cooling systems. Opportunities for saving energy arise especially when the motors do not constantly run at full speed.

The market offers a variety of technologies to reduce energy consumption in food and beverage production. These include, for example, variable speed drives. Many applications in the industry, such as fans, pumps, compressors and conveyor belts, are operated predominantly in the partial load range. To control their speed, mechanical methods such as valves, brakes and throttles are traditionally used. However, this means that the motor has to work harder than necessary, and energy is lost due to the mechanical speed control.

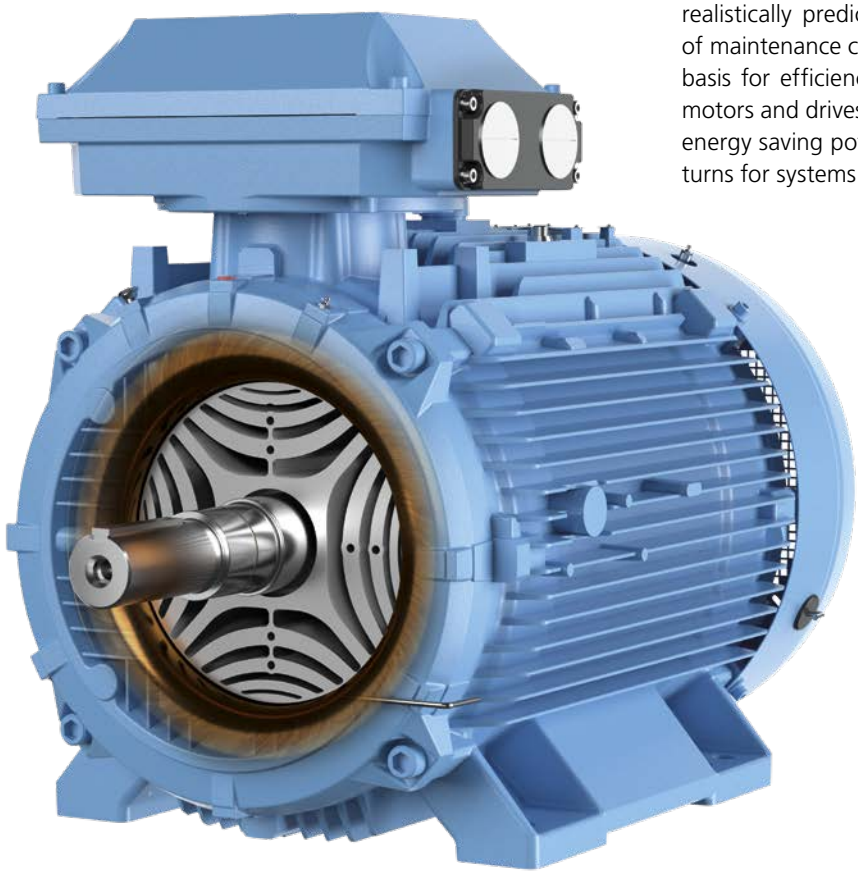
## Increase efficiency in partial load operation with variable speed drives

By using variable speed drives, applications in the partial load range can be operated more efficiently because they directly control the speed and torque of an electric motor. This eliminates the need for mechanical speed control and oversized motors. Instead, they can be controlled according to actual demands, so that applications can be operated with high efficiency at different speeds. This significantly improves the energy efficiency of entire production chains. ABB offers drives and control software that, combined with in-depth application know-how, optimize a wide range of processes in the food and beverage industry. This ensures that motor-driven applications such as compressors, pumps, extruders and conveyors run at the correct capacity at all times. As a rule, installing a variable speed drive can reduce energy consumption by 25 percent. Another advantage of drives is their precise speed control, which avoids wasting energy and raw materials during production. Maintaining the correct machine speed is very important in the food industry. For example, entire product batches may become unusable if the ingredients are mixed too quickly or too slowly. By ensuring the optimal mixing speed, variable speed drives help to minimize food waste and the corresponding energy consumption during production. In addition, a lower volume of waste reduces greenhouse gas emissions, which increases sustainability.

## Improving motor efficiency

In addition to drives, upgrading motors can also improve the overall efficiency of applications in the food and beverage industry. Currently, many motors used in the industry have an efficiency of IE3, IE2 or sometimes even IE1. ABB, on the other hand, offers synchronous reluctance motors with an efficiency of IE5. Since each IE class reduces losses by 20 percent, an upgrade offers considerable potential for energy and cost savings. In addition, some countries support modernization with tax breaks, government subsidies and other financial incentives.

In addition, electricity consumption and $CO_2$ emissions can be reduced with digital plug-and-play solutions. These collect application data and thus provide a detailed insight into the system status. By analyzing the information, cloud-based technologies can realistically predict potential downtime, optimizing the planning of maintenance cycles. The collected data also provides a valuable basis for efficiency improvements when specifically modernizing motors and drives. Advanced analysis tools can be used to identify energy saving potential, minimize waste and increase financial returns for systems and applications.



*The use of synchronous reluctance motors offers plenty of potential for energy and cost savings*

# Tetra Pak Ingredient Doser 4000 A3

## Reducing start-up waste by 67%

*Tetra Pak's new Ingredient Doser 4000 A3 (photo: Tetra Pak)*

Tetra Pak introduced the Tetra Pak Ingredient Doser 4000 A3. This next-generation solution offers more precise dosing of ice cream inclusions, reducing start-up waste by 67%, as well as optimising production efficiency.

The gourmet ice cream market is projected to grow by $13.96 billion at a 18.32% CAGR from 2023 to 2028, indicating that consumers are craving more than just classic flavours. With the rise of premiumisation and co-branded collaborations, ice cream manufacturers are developing innovative products using adventurous inclusions to stand out in this creative and fast-paced sector.

Whether it's oversized cookie pieces, sticky cherries or powdered spices, the Tetra Pak Ingredient Doser 4000 A3 is designed to deliver even distribution, so that every scoop delivers the intended flavour experience. This precise ingredient control from hopper to product makes it easier to control costs, and can handle both small, dry ingredients and large, sticky inclusions, up to 32mm in diameter. It also reaches the dosing set point three times faster than previous models – down from 45 to just 15 seconds – eliminating 30 seconds of waste.

The new doser is 3-A certified, meeting the gold standard of hygienic food equipment design. The motor offers 11% lower energy consumption than IE3 regulatory standard, and the direct drive of auger and agitator allows manufacturers to alter the capacity of the doser without changeovers, maximising uptime and cutting costs further. It is also versatile enough for other foods like peanut butter, cream cheese and mayonnaise, giving manufacturers the freedom to explore new possibilities beyond ice cream with this doser.

A series of sensors and automated algorithmic responses keeps it running at peak performance, which reduces downtime, waste and wear while maintaining product quality and an even distribution of inclusions. This digitalisation also provides manufacturers with real-time production insights from day one, enabling them to optimise production lines for a more efficient use of resources. These digital solutions are combined with new and improved operator interfaces and user-friendly design choices, aiming to provide an intuitive human-machine interface and an easy to clean and maintain doser for all operators.

# Why today's consumers choose dairy: Local, energizing, full of flavor

## Local Sourcing Enhances Trust in Dairy Products

Author: Kate Kehoe,
Marketing Manager at FMCG Gurus

This article is based on FMCG Gurus - Reinvigoration of Dairy - Global Report

According to FMCG Gurus, 81% of global consumers say they prefer brands that are both locally produced and made with locally sourced ingredients.

Over the past two years, there has been little shift in the number of consumers who value locality claims on dairy products. This suggests that the emphasis on locally produced dairy was not a temporary response to pandemic-era concerns over long supply chains or inconsistent quality. Rather, consumers consistently associate local products, especially those in highly perishable categories like dairy, with positive attributes such as freshness, safety, taste, and nutritional integrity.

Additionally, in a climate of economic instability, there is a strong emotional pull toward supporting domestic producers. Many consumers now want greater transparency around product origins, ethical production standards, and the working conditions of farmers. As such, dairy brands that clearly communicate their local roots and production values stand to earn deeper consumer loyalty.

## Dairy as a Morning Energy Boost

FMCG Gurus consumer insights shows that 42% of global consumers consume dairy in the morning for an energy boost.

For many, dairy products are an essential part of daily routines, whether consumed directly or used as ingredients in drinks, meals, and recipes. The primary motivation behind this habitual consumption is the perceived ability of dairy to deliver a natural and sustained energy boost. Consumers worldwide frequently deal with fatigue as they juggle busy schedules, financial stress, and lifestyle demands, all of which can disrupt sleep and lower energy levels.

At the same time, people increasingly assess their well-being based on how energetic and active they feel day-to-day. Given the skepticism surrounding conventional energy products, like sugary drinks or artificial boosters, dairy stands out as a more natural and trustworthy alternative. This creates an opportunity for brands to highlight how dairy snacks and beverages can provide steady or slow release energy.

## Taste and Nutrition Drive Dairy Choices

According to FMCG Gurus, 76% of global consumers say taste is the most crucial factor when choosing fresh dairy products.

When selecting dairy, taste consistently ranks as the top priority, even over price, a remarkable trend considering the financial strain many households currently face. Health-related benefits come in as the second most important consideration, reinforcing the dual expectation that dairy should deliver both indulgence and wellness.

This highlights a clear direction for product innovation: quality and enjoyment must not be sacrificed in pursuit of affordability. Consumers are willing to trade up for dairy products that offer both great flavor and nutritional value. Furthermore, many see dairy as a comfort food that allows for moments of indulgence without the guilt, thanks to the presence of essential micronutrients. Brands that can balance these demands are more likely to win consumer favor and loyalty in both everyday purchases and premium segments.

# From input to impact

## Helping mozzarella makers thrive through the global milk supply squeeze with MaxirenEVO

Author: Ardy van Erp, Business Director Cheese, dsm-firmenich


Cheesemaking has always been a balancing act; between texture and taste, art and science, speed and quality. As global demand for cheese continues to grow, that balance is coming under increasing pressure. Projections estimate global cheese consumption will reach 30 million metric tons by 2035, with a market value exceeding USD 208 billion. Meeting this demand depends on a reliable and abundant milk supply, but today, milk availability is under strain.

A combination of environmental, economic and demographic factors is reshaping the landscape for dairy producers. Climate change has begun to impact milk production through rising temperatures, increasing heat stress on dairy herds, and altering feed availability. A new study published in Science Advances reports that high-heat days can reduce milk yields by up to 10%, with effects lingering for more than a week. In the long term, average milk yields in key production regions may decline by up to 4% by mid-century if heat extremes become more common.

In parallel, milk production growth is stagnating in several regions due to economic constraints and shifting population patterns. At the 2025 Dairy Olympics, Laurence Rycken of the International Dairy Federation highlighted that the world could face a 30 million-ton shortfall in milk supply by 2030. This represents a serious challenge to the dairy industry's ability to scale production and maintain consistent product quality.

In this environment, efficiency in milk usage is no longer an operational preference but an economic and environmental necessity. For cheesemakers, this means extracting as much value as possible from every liter of milk while maintaining high standards of quality and food safety.

### Yield as a core business driver

Yield has traditionally been treated as a production metric, monitored and adjusted through incremental improvements in process parameters. Yield now plays a more central role in business performance and long-term resilience. The ability to consistently produce more cheese from the same volume of milk allows manufacturers to offset input cost volatility, manage supply risks, and reduce environmental impact.

Achieving these outcomes requires more than process control. It calls for precision tools that optimize every stage of cheesemaking production, starting with coagulation. Coagulants influence the structural integrity of the curd, its ability to retain moisture, and how much of the milk's solids ultimately remain in the finished product. As such, innovations in this area can have a measurable effect on overall efficiency.

photo: nastasiia_stock.adobe.com

## Coagulation innovation in practice

At the heart of yield optimization is the ability to convert more of each liter of milk into high-quality, finished cheese. This begins with coagulation – an enzymatic process that sets the foundation for curd structure, moisture retention, and downstream performance. Even small inefficiencies at this stage can have outsized impacts across production.

Maxiren®EVO, a next-generation fermentation-produced chymosin developed by dsm-firmenich, is designed to address these challenges with greater precision. By refining the enzymatic action on casein proteins, it promotes the formation of a stronger, more cohesive curd with minimal fragmentation. This contributes directly to higher yield – enabling up to 1.7% more cheese per liter of milk compared to other coagulants.

This performance is achieved through faster curd knitting and improved water-binding, resulting in lower fat and protein losses in the whey and fewer curd fines during cutting, stirring, and draining. In large-scale production, this adds up to significant product recovery over time and supports more efficient use of raw materials.

Equally important is MaxirenEVO's low proteolytic activity. Excessive protein breakdown during ripening can lead to off-flavors, inconsistent texture, and shortened shelf life. By limiting this enzymatic degradation, It helps maintain the intended flavor and structural characteristics of the cheese throughout its storage period.

A stronger curd also supports greater control during slicing, shredding, and packaging – reducing mechanical loss and helping ensure consistent weight, appearance, and portioning. In fact, MaxirenEVO can reduce cutting losses by 16%. This level of processing stability and reliability is particularly advantageous for manufacturers working across multiple product formats or meeting strict customer specifications.

In a production environment defined by tight margins and high variability, MaxirenEVO gives cheesemakers the ability to drive yield, safeguard quality, and improve operational reliability – starting from the very first step of the process.

## Environmental benefits of yield optimization

Improving yield is directly connected to sustainability outcomes. Increasing the proportion of milk solids that are converted into cheese reduces the volume of milk needed per kilogram of finished product. This contributes to lower resource intensity, as less feed, water, land, and energy are required per unit of cheese produced.

Curd losses during processing represent both a financial cost and an environmental burden. Every gram of protein or fat that ends up in the whey or as fines in the equipment contributes to waste. MaxirenEVO reduces these losses at the source by improving curd integrity, which supports higher conversion rates and lower waste volumes. It also supports energy efficiency. The curd structure it produces allows for greater flexibility in slicing schedules and facilitates more predictable aging processes, which can help reduce the energy footprint of storage and handling. These incremental gains contribute to broader environmental performance targets.

According to internal lifecycle analysis data from dsm-firmenich, MaxirenEVO can reduce the carbon emissions associated with cheesemaking by approximately 1.6% compared to commercially available fermentation-produced coagulants. While the figure may appear small in isolation, the impact is significant when applied across high-throughput operations.

Whey is another area where environmental and economic priorities align. When coagulants leave behind residual enzymatic activity, they can compromise whey quality, limiting its use in high-value applications. MaxirenEVO is inactivated during processing, preserving clean whey composition. This supports value streams and allows manufacturers to sell whey into additional markets, enabling greater use of dairy inputs.

dsm-firmenich's broader sourcing and manufacturing practices also contribute to sustainability. The company emphasizes responsible sourcing of raw materials and has expanded local production to reduce transportation emissions and strengthen regional supply resilience.

## Culture-driven synergies

While coagulation is a key step in yield optimization, it does not operate alone. Bacterial cultures play a central role in defining the texture, flavor, and acidification dynamics of the cheese. When used in combination with high-performance cultures, the benefits of an advanced coagulant can be further amplified.

Delvo®Cheese CP-500 is a culture system developed by dsm-firmenich to support faster, more consistent acidification. This results in improved moisture control and processing predictability. When paired with MaxirenEVO, the combination can enhance overall curd formation, helping to retain more solids and achieve a more uniform curd.

This pairing is particularly relevant in high-moisture cheese applications such as mozzarella. Here, moisture retention and melt characteristics are both critical quality attributes. The combination of MaxirenEVO and DelvoCheese CP-500 has been shown to deliver reliable stretch, clean melt, and a smooth, creamy flavor profile, without bitterness or off-notes. From a production standpoint, the culture–coagulant synergy improves yield while also supporting quality targets, reducing the need for trade-offs between efficiency and sensory performance.

## Meeting the challenges ahead

The pressures facing the global dairy sector are not expected to ease in the short term. Supply chain volatility, input cost inflation, and climate-related disruptions continue to challenge producers. At the same time, retailers and consumers are placing more emphasis on sustainability, transparency, and nutritional quality.

Cheesemakers who can align efficiency with environmental and sensory performance will be better positioned to meet these expectations. Technologies that support yield optimization are a practical way to advance these goals without requiring wholesale process changes or capital investment.

By improving moisture retention, enhancing curd integrity, and enabling greater shelf life stability,

MaxirenEVO supports operational consistency while reducing waste. When used in tandem with high-performing culture systems such as DelvoCheese CP-500, cheesemakers can capture even greater value from their existing milk supply. This approach reflects a shift in how dairy production must evolve: from focusing on throughput to emphasizing conversion efficiency, resource stewardship, and quality assurance.

## Building resilience into cheesemaking

In an era defined by constraints on natural resources, efficiency gains are essential. Yield improvement represents a straightforward, measurable way to reduce environmental impact, improve financial margins, and safeguard supply continuity.

The technologies available today enable cheesemakers to adapt to evolving conditions while continuing to meet consumer expectations. Coagulants and cultures are not only functional ingredients but enablers of broader operational strategies.

MaxirenEVO illustrates how precision enzyme technology can contribute to better outcomes across multiple dimensions of production. When integrated thoughtfully into cheesemaking workflows, it allows producers to make the most of each liter of milk, reduce avoidable losses, and improve product consistency.

As milk supply tightens and demands grow, this kind of innovation will be essential, not only to maintain profitability but to ensure the dairy industry can continue to deliver high-quality, nutritious products in a sustainable and responsible manner.

1 World cheese market analysis forecast, size, trends and insights. IndexBox July 2025 https://www.indexbox.io/blog/cheese-world-market-overview-2024-10/

2 Claire Palandri et al., High-frequency data reveal limits of adaptation to heat in animal agriculture. Sci. Adv.11,eadw4780(2025).DOI:10.1126/sciadv.adw4780

# Next generation condition monitoring

## Digitalization strategy of Alfa Laval

Alfa Laval launches Clariot, a next generation, AI-based condition monitoring solution, precision-built for hygienic process equipment to deliver more accurate analysis and support. Clariot monitors equipment and processes, providing actionable insights that enhance uptime and optimize resource efficiency. "We developed Clariot based on our extensive experience from more than 3,000 condition monitoring units already operating worldwide", says Torsten Pedersen, Commercial Head Condition Monitoring at Alfa Laval Fluid Handling. "With new hardware and software, we can now offer a complete digital handshake, tailored for use in demanding hygienic processes."

The solution provides 24/7 monitoring, alerts and diagnostics for pumps and other rotating equipment, e.g. agitators. The industry-intelligent solution proactively detects machine failures before they occur, maximizing performance, minimizing downtime and extending equipment lifespan.

### From insight to foresight

Clariot is an important next step in the digitalization strategy of Alfa Laval, where resource and operational efficiency align with the latest smart technologies. It is a standalone system, enabling maximum cybersecurity by operating independently from internal business-critical systems. Installation is simple, and Clariot is compatible with most pump brands.


*Clariot monitors equipment and processes, providing actionable insights that enhance uptime and optimize resource efficiency (photo: Alfa Laval)*

# Gemak has successfully completed “Project Dragon”

## New standards in UK whey processing

Gemak has successfully completed “Project Dragon” – a state-of-the-art whey, milk and cream processing with CIP units for South Caernarfon Creameries (SCC) in North Wales.

South Caernarfon Creameries, Wales’ oldest and largest farmer-owned dairy co-operative, with 160 farmer members supplying locally sourced Welsh milk, produces over 20 varieties of high-quality Welsh and British cheeses. embarked on a £15 million expansion plan to increase its cheese production capacity from 15,000 tons to 23,000 tons annually. Backed by a £5 million grant from the Welsh Government’s Food Business Investment Scheme, this investment aimed to bolster SCC’s resilience and competitiveness in the global market.

Alan Wyn-Jones, Managing Director of SCC, mentioned that “After a thorough tendering process, Gemak was chosen due to their ability to integrate into our existing processes and systems, lead times, quality and competitiveness.”

*Whey plant - outside (photos: Gemak)*

*Milk & cream unit*

*Whey plant*

*Cheese CIP unit*

## Advanced technology and sustainability

Besides leveraging its expertise in designing and manufacturing hygienic whey processing plant, the project also included a new milk and cream processing plant, storage silos, and a CIP unit for SCC's existing cheese plant. The facility boasts a processing capacity of 600 tonnes per day of milk and whey concentrate, making it one of the most advanced dairy processing plants in the UK. This technology ensures high product quality but also streamlines processes, reducing energy consumption, reduction in carbon footprint and optimising resource utilisation.

Andrew Lyons from Engineer IQ, who led the process project management, state, "The plant was designed to deliver optimal operational efficiency and sustainable solutions with stringent KPIs on waste levels, utility consumption, and operating costs."

Initially designed for net-zero water consumption on-site, the facility exceeded expectations, earning a "Net Zero Plus water" distinction by generating over 100,000 litres of high-quality clean water daily beyond what is recovered and reused on-site. Gemak also delivered a facility capable of processing whey at a rate of 30 tons per hour and producing whey concentrate from RO (HIRO) with an capability of 30% total solids – a first in the UK.

### Delivering tangible results

- Continuous run time
- Yield recovery per litre of whey and milk
- Process accuracy
- Waste reduction

# Alpi modernizes its lactose production

## Use of Flottweg decanters


Author: Julia Deliano, PR and Content Manager at Flottweg

To make their production more efficient while also improving their ecological footprint, Alpi, an Austrian milk drying plant, is modernizing its lactose process with the help of sophisticated Flottweg decanters. The result is a three-stage washing process that saves water, increases product yield and provides economic added value. Alpi and Flottweg have been partnering to improve processes for more than 25 years. The Flottweg decanters are the key technology used for the production of lactose at Alpi. Thanks to the expansion and modernization, the process is now significantly improved in both economic and ecological terms.

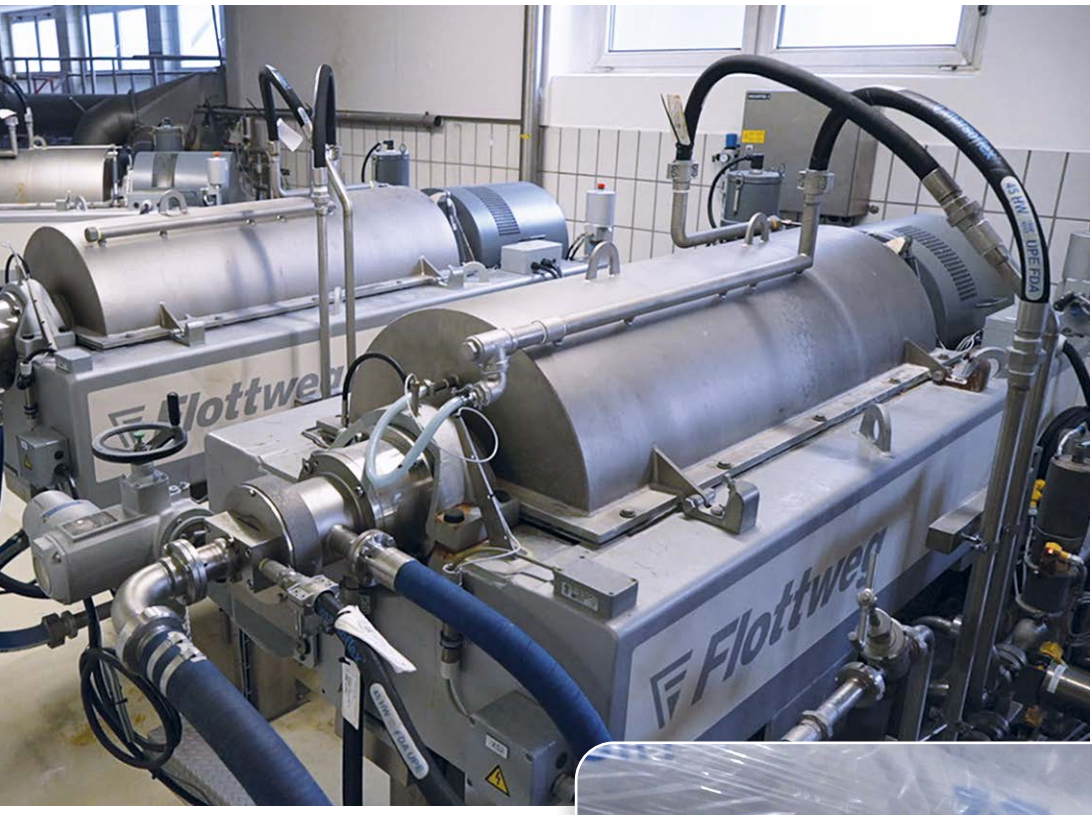
### Alpi's focus: Whey and lactose

Alpi is an Austrian dairy company that specializes in the processing of whey and the production of lactose. Alpi currently has around 50 employees and is the largest milk drying plant in Austria in terms of volume.

The focus of the business is very clear. "Our main product is sweet whey powder, most of which is used in the chocolate industry. The second most important product is lactose, i.e. milk sugar. We also produce partially desugared whey powder, which is largely used in the feed industry," explains Managing Director Karl Himsl. "In total, we produce 33,000 metric tons, of which over 20,000 tons are sweet whey powder, 7,000 tons are lactose and approximately 5 to 6,000 tons are partially desugared whey powder. We also sell whole milk powder, skimmed milk powder, casein and other by-products." Alpi adapts the powder–from fine to extra fine–individually to customer requirements.

### Three-stage lactose production process

For the production of lactose, Alpi receives whey from cheese dairies in Austria and Germany. This is then ripened and crystallized on site, considering various factors such as pH, temperature and composition. In general, the production of lactose involves a three-stage washing process. The first step in the process is separating the crystallized lactose from the parent solution. Cold water is fed in during washing to remove impurities, including protein, lactic acid and minerals. The last step in the process is the second wash, which is designed to produce the purest and best possible end product.




*The Flottweg decanters are the key technology used for the production of lactose at Alpi*

*Alpi offers different types of lactose*


Managing Director Himsl describes the manufacturing process at Alpi as follows: "The first decanter separates the product stream into sugar molasses and partially desugared whey powder, which is still liquid. At the second and third decanter, the sugar molasses is further washed and made increasingly solid. After the third decanter, the product goes directly to the fluidized bed dryer via an Alexander mill, where it is dried into a powder." The three-stage washing process is realized with Flottweg decanters.

It is particularly important for the production process that the lactose contains as little protein as possible. The protein must be separated out with the second phase, the partially desugared whey powder. For this reason, it is very important that the washing process functions consistently and that the separation process in the first decanter is already as efficient as possible.

In addition, Alpi processes different types of whey, which means that the process is always different. For Alpi, this makes the individual adaptability of the decanters particularly important. "With the Flottweg decanters, we can store different recipes, which helps us to ensure that our processes run perfectly and that the separation is exact," says Himsl. "Flexibility is crucial for us because we have to work with different types of whey in order to always get the perfect end product."

Technology/IT ¦ IDM

*"In total, we produce 33,000 metric tons, of which over 20,000 tons are sweet whey powder, 7,000 tons are lactose and approximately 5 to 6,000 tons are partially desugared whey powder. We also sell whole milk powder, skimmed milk powder, casein and other by-products."*

Karl Himsl, Managing Director

## A collaboration that has grown over time

The partnership between Alpi and Flottweg has grown ever stronger over the last quarter century. The company started with one decanter in 2000, and it eventually purchased a second one to enable a two-stage washing process. Since then, Alpi has been extremely satisfied with the collaboration, as well as the performance of the decanters. "It always works great, and we are impressed by the quality. The cooperation with Flottweg has always gone extremely well," says the managing director.

For this reason, Alpi eventually decided to update the process—together with Flottweg. Based on its positive experiences through the years, Alpi again decided to go with Flottweg. "In the end, we decided to buy three new decanters to keep up with the latest technology and to get the most out of our production. Alpi has decided to gradually replace its old decanters, as they are no longer state of the art."

In addition, the switch to the three-stage washing process has resulted in a further benefit for Alpi. "In the separation process, we now have much more protein in the higher-quality, partially desugared whey powder and much less in the lactose—just as we need it. This additional protein in the partially desugared component sells very well." This provides an added economic benefit for the company, since the higher-quality, partially desugared whey powder can be sold at a higher price.

When selecting the new decanters, Flottweg's expertise was also key. Alpi decided on a special type of material for one of the decanters. "When we switched to different varieties of acid whey, it became particularly important to have a very good separating decanter that could also handle a low pH value. During the planning phase, we received excellent advice from Flottweg. They recommended that the first separating decanter be made from the Super-Duplex material to handle the acid whey. For the

manufacturing process and for product safety, it was also crucial that the devices run reliably in the long term to avoid jeopardizing our production. This advice strengthened our relationship with Flottweg."

## Three-stage process ensures efficient product yield and quality as well as water savings

The decision to modernize the processes and install a further washing stage is yielding positive results at Alpi. Lactose production has doubled, while the number of staff involved has remained the same. The quality of the lactose has also improved as a result of the switch to the three-stage washing process with the Flottweg decanters.

What's more, water consumption has been significantly reduced. "Thanks partly to the three new decanters from Flottweg, we now need much less wash water in the process. We save about 50 percent of the water we used previously. This water also must be evaporated later," explains Himsl. "In the past, the syrup came out of the decanter with 5 to 6% dry matter, and now it comes out with 14 to 17% dry matter. The partially desugared molasses was previously 22% dry matter, and now it yields 36 to 39% dry matter. Now we save not only water but also energy, as the product now comes out of the decanters with much higher dry matter, which helps us to save on thickening costs." These were important steps for Alpi to minimize its carbon footprint and embrace the all-important topic of sustainability in its operations. For this reason, Alpi has received funding from the Austrian Federal Ministry for Climate Action, as these improvements have been classified as innovative.

## Service

Alpi has received positive experiences with Flottweg's service. Through the past 25 years, the service aspect of the partnership has always run smoothly and without issue. Due to the perishable nature of the whey and the 24/7 production, it is of great importance to Alpi that all processes function reliably and without unexpected stoppages. With the Flottweg decanters, Alpi has found a partner that meets these requirements and enables it to produce around the clock.To optimize maintenance times, Alpi also decided to purchase a spare rotor. "Previously we had to schedule one or two days for maintenance. Now we can replace the rotor in about an hour and a half and the process can resume quickly," explains Himsl. This shorter maintenance interval means that production can now be restarted on site more quickly.

# Scope for product diversity

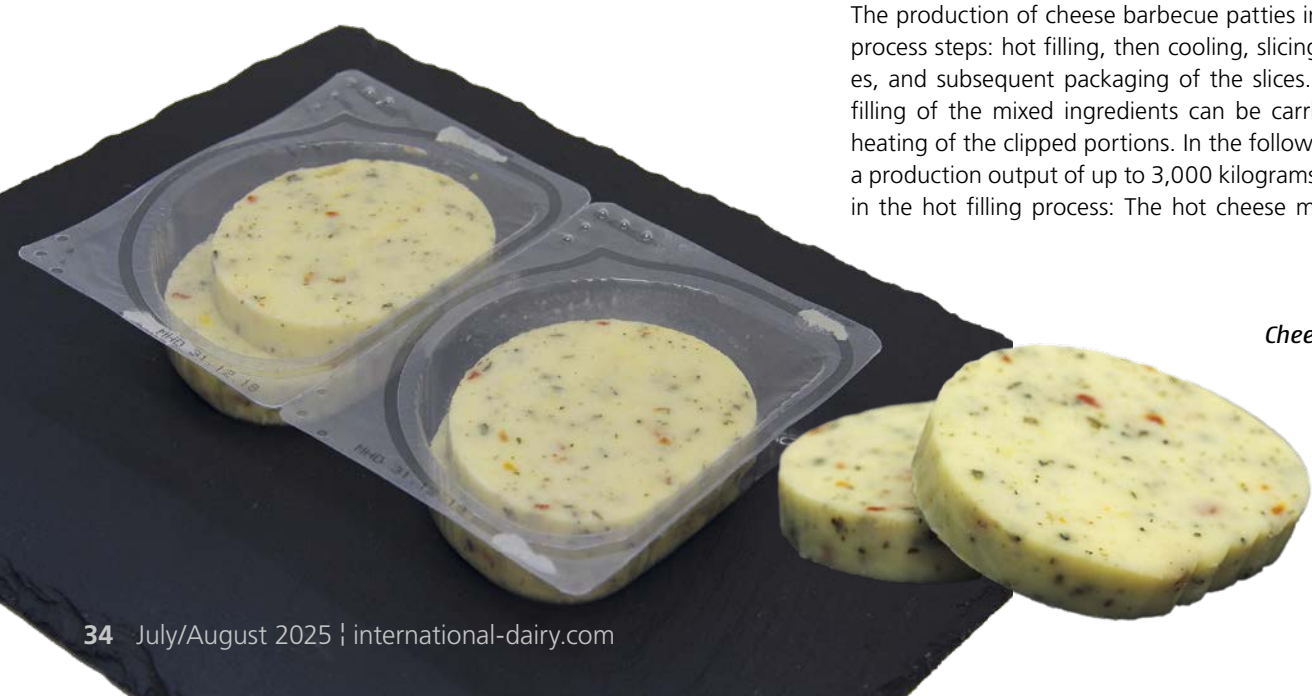
## Production of cheese products for the barbecue season


*VF 800 vacuum filling machine with IFC-interface and clipping machine (photos: Handtmann)*

A popular convenience product is the well-loved barbecue and baked cheese patties. In an efficient and hygienic production process, the cheese mass is portioned, clipped and sliced. The production of barbecue cheese patties can be done using cold or hot filling. A wide range of products can be achieved through recipe variations. The system technology consists of Handtmann's mixing/heating technology for product preparation, a vacuum filing machine, and a clipping machine for the processing step.

### Application and process example from practice:

The production of cheese barbecue patties involves the following process steps: hot filling, then cooling, slicing into individual pieces, and subsequent packaging of the slices. Alternatively, a cold filling of the mixed ingredients can be carried out, followed by heating of the clipped portions. In the following process example, a production output of up to 3,000 kilograms per hour is achieved in the hot filling process: The hot cheese mass is conveyed at a



*Cheese barbecue patties portioned, sliced and packaged*

high filling temperature and portioned via the VF 800 vacuum filler and clipped in lengths of 600 mm, a portion diameter of 85 mm, and portion sizes of 3,200 grams in artificial casing (casing design: gathered slugs, casing length 35 meters), and sliced into 40 gram pieces. The stated production output is achieved with an average casing changeover time of 15 seconds and a filling interval of 270 milliseconds.

## Digital interface solution for an integrated portioning and clipping process

Handtmann products cover a sub-segment of the overall process of cheese production. A multitude of machine manufacturers is involved in the upstream and downstream process to produce a product that is ready for sale. A trend is emerging here to digitise the entire production process across all machine manufacturers. To this end, Handtmann has developed interfaces for connecting to Handtmann machines. With regard to the portioning and clipping process, the patented Handtmann Intelligent Filler Clipper (IFC) interface solution demonstrates the advantages of synchronised and intelligent machine communication in conjunction with a Poly-clip clipper. The IFC interface adds an Ethernet data coupling to the standard sequence control of the production process via reciprocal signals. This facilitates real time communication between the machines. Product and filling settings are automatically transferred between the filling machine and the clipper and status information is exchanged. This makes operating the system considerably easier. After the product data has been entered in the clipper, the VF 800 automatically calculates the optimum filling and portioning parameters. They are transferred to the clipper where the basic data for safely starting the filling process is calculated. If the operator changes the filling capacity while the system is running, the overall process is automatically adapted. Furthermore, a significant increase in performance is achieved through this digital networking. In addition to simplified operation and increased process reliability, the intelligent networking of the machines also leads to less wear and an up to 10% increase in portioning capacity. This is achieved by means of synchronisation and controlled overlapping of the portioning and clipping cycles in both machines. Due to cycle overlapping, maximum acceleration and deceleration of the vacuum filler and clipper drives (which leads to increased wear) is avoided and higher output is attained.

## **Tetra Pak** *New edition of the Dairy Processing Handbook*

Tetra Pak announced the launch of the 2025 edition of the Dairy Processing Handbook, a landmark resource that has been guiding the industry for 40 years. This updated edition is packed with the latest technical insights and industry trends, making it an indispensable tool for dairy professionals and students alike.

The updated edition is a comprehensive resource tailored for industry professionals, academics and students. Featuring more than 600 illustrations and over 460 pages of content authored by 35 experts from across Tetra Pak, the Dairy Processing Handbook is a definitive resource for dairy professionals and the broader food processing industry. The book also features a chapter on the Primary Production of Milk, authored by experts from DeLaval.

The 2025 handbook features comprehensive updates across all existing chapters and introduces four entirely new chapters. Among them, a new chapter on "Mixing Technology" offers the latest expertise to optimise production efficiency and ensure consistent results that meet consumer expectations across milk, yoghurt, cheese and ice cream products. Mixing is a core technology for food supplements and nutrition, and with nearly three-quarters (74%) of consumers interested in purchasing products with specific health claims,this emerging segment is generating increased attention from food and beverage producers.

In response to rising health awareness and increasing demand for dietary alternatives, the 2025 edition also includes a new chapter on "Lactose-Free Dairy Products." With the lactose-free dairy market projected to grow at 7.12% (CAGR from 2023 to 2033),this edition addresses a fast-expanding segment reshaping consumer expectations and product development.

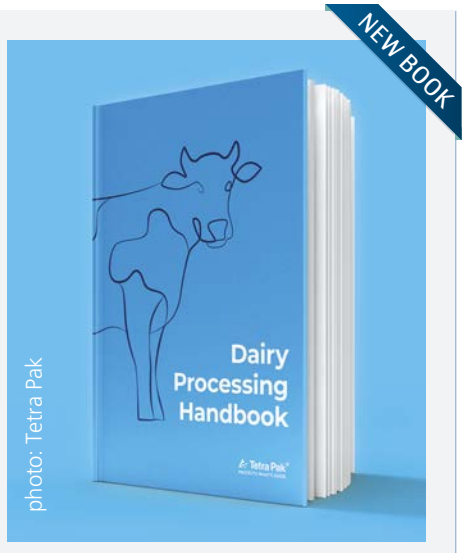


photo: Tetra Pak

Meanwhile, a new chapter on "Sustainability in Dairy Processing" provides essential insights to help producers transition towards more sustainable operations. With dairy production accounting for 2.7% of total anthropogenic greenhouse gas emissions, sustainable transformation is both a responsibility and an opportunity for the industry.

# Top tends in dairy automation

## New processing technology developments

Dairy processing equipment consists of equipment used to make the most of various milk properties to prepare a diverse range of dairy products such as processed milk, fresh dairy products, butter & buttermilk, cheese, milk powder, and protein ingredients; many different processes have been developed by industry. Dairy product manufacturing involves various processes such as pasteurization, homogenization, filtration, drying, and separation. To enable these processes, dairy processors use equipment such as pasteurizers, homogenizers, separators, evaporators & dryers, membrane filtration equipment, mixers & blenders, and other equipment such as churning equipment, crystallizers, chillers, silos, cutters, and cheese vats. With technological advancements in the dairy sector, milk is largely processed to be used in the manufacture of various ingredients and products. Globally, these products and ingredients have varied applications in health & nutrition. Factors such as the adoption of energy- efficient technologies to enhance process efficiency have significantly fueled the dairy processing equipment market. Technological innovations utilize new ideas, technology, and scientific concepts in different ways to create unique dairy equipment and processes. The changing consumer tastes have resulted in the launch of new dairy products such as Greek yogurt. To meet the challenges in manufacturing these dairy products, dairy equipment manufacturers are introducing newer equipment and technologies for dairy processors. Dairy processors are adopting new technologies and machinery that can be easily integrated into the production line and can be continuously integrated from one piece of equipment to another

New processing technology developments present dairy processors with the flexibility of choosing machines that can package products with a wide range of functions-filtrations, packing, mixing, boiling, freezing, or cooling. Multifunctional machines, such as machines with integrated software adaptations, can handle a variety of operations that reduce the time to produce end products, thereby enhancing process efficiency. Furthermore, the globalization of the dairy industry has spurred cross-border trade and technological innovation. As a result, the demand for advanced processing equipment is escalating to meet the growing worldwide appetite for dairy products. Health and wellness trends steer consumers toward processed dairy products that align with nutritional preferences, driving investments in equipment that facilitate value addition. Additionally, concerns about the risks associated with unpasteurized milk are pushing dairy processors to invest in cutting- edge equipment to enhance product safety and quality. The industry is also experiencing a shift towards standardized product quality and an increasing demand for extended shelf life, prompting the adoption of advanced processing technologies.

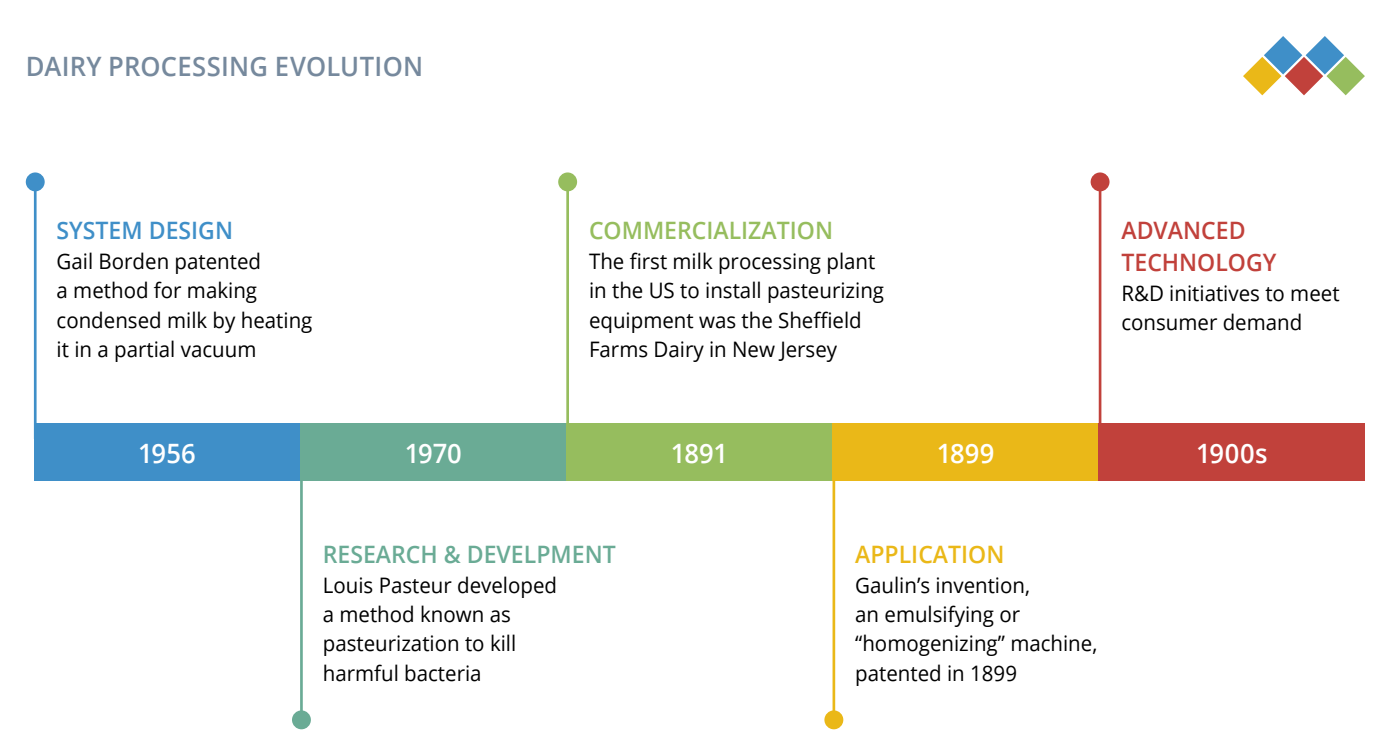
Other factors fueling the growth of the dairy processing equipment market are the rise in demand for dairy products, an increase in automation offered by technology providers, and the abolition of milk quotas in the European Union. The abolishment of the milk quota allowed manufacturers to process milk and other dairy products in abundant quantities. Other opportunities in the market are the support provided by government bodies in terms of funding for SMEs and startups, expansion of product lines for

emerging applications, and an increase in the variety of carbonated dairy-based beverages. The growing emphasis on environmental sustainability is another opportunity, with companies focusing on eco-friendly and energy-efficient equipment to align with evolving consumer preferences. However, factors such as high capital investments and increased consumer inclination toward dairy alternatives create challenges for market growth. Also, a significant restraint is the high energy costs associated with the energy-intensive nature of dairy processing. This poses financial challenges for businesses, requiring them to seek innovative solutions to balance operational efficiency with cost considerations. According to MarketsandMarkets the dairy processing equipment market is projected to to reach USD 14,436.2 million by 2028.

The dairy industry has developed and implemented various processes to prepare butter, cheese, yogurt, cream, and other dairy products. These processes have been designed to utilize various properties of milk to manufacture products with different tastes and nutritional profiles. These processes include pasteurization, homogenization, filtration, evaporation, mixing, and separation.

DAIRY PROCESSING EQUIPMENT MARKET: MARKET MAP


*Source: Secondary Research, Primary Interviews, Industry Journals, Related Research Publications, Press Releases, and MarketsandMarkets Analysis*




*Source: Press Releases, Magazines, Industry Journals, and MarketsandMarkets Analysis*

With technological advancements in the dairy sector, milk is largely processed to manufacture various ingredients and products. Globally, these products and ingredients have varied applications in health and nutrition. These products primarily provide consumers with nutrients that safeguard their health and make up for any deficient nutrients. Additionally, concerns surrounding contamination risks associated with raw milk have led to increased investments in advanced equipment, ensuring the safety and quality of final products. The influence of Western dietary patterns, particularly the rising demand for cheese and butter, has extended to Asian and African countries, further propelling market growth. Furthermore, the standardization of product quality and safety standards drives manufacturers to upgrade their processing equipment to meet evolving regulatory requirements. Despite the positive momentum, the industry faces significant challenges. Escalating energy costs pose a substantial hurdle for dairy processors, impacting operational costs and profit margins. Moreover, health risks associated with certain dairy products, such as whey protein, have prompted regulatory scrutiny and raised consumer concerns. Also, high capital investment remains a formidable challenge for both established players and new entrants in the dairy processing equipment market. Modernization and compliance with evolving industry standards require substantial upfront expenditures, acting as a barrier to entry for smaller businesses. The growing demand for dairy alternatives also presents a challenge, necessitating manufacturers to innovate and adapt to changing consumer preferences. Amid these challenges, the dairy processing equipment market offers substantial opportunities. The industry is seeing a growing emphasis on environmental and sustainability concerns, providing avenues for manufacturers to develop eco-friendly and energy-efficient equipment. Government and non-government bodies increasingly provide investments and funding support, foster research and development within the dairy processing sector, and create opportunities for technological advancements and market expansion.

The adoption of automation in dairy processing is driven by the need for increased efficiency, hygiene maintenance, and cost- effectiveness. The dairy sector faces challenges related to manual labor, hygiene concerns, and the need for precise operations. Automated systems, including robotic arms and smart processing technologies, address these issues by offering streamlined production processes. Automated milking systems, for instance, alleviate the labor-intensive nature of milking, contributing to higher production rates and improved overall hygiene.

Additionally, automation aids in reducing labor costs, ensuring worker safety, and enabling easy and efficient transportation within processing plants.

Different types of automation, such as fixed automation, programmable automation, and flexible automation, cater to the diverse needs of dairy processing operations. These technologies facilitate tasks such as cleaning, sorting, blending, and packaging dairy products. The use of articulated robots, delta robots, and SCARA robots for packaging and palletizing operations ensures accuracy and speed, contributing to the quality and durability of dairy products. As the dairy processing equipment market continues to evolve, the integration of automation and robotics emerges as a critical factor in meeting the growing demand for dairy products while maintaining high standards of efficiency and hygiene.

## Enzyme-based Cleaning in Place (CIP) in dairy processing

Sustainable Cleaning-in-Place (CIP) has emerged as a crucial strategy in the global dairy processing industry, particularly for cleaning processing lines, equipment, and storage facilities like milk silos. Traditional CIP methods involve thermal treatments and non- biodegradable chemicals, posing sustainability challenges due to the need for appropriate neutralization before disposal. To address these concerns, there is a growing shift towards adopting enzyme-based CIP solutions. Enzymes offer numerous advantages, including reduced water usage, lower operating temperatures leading to energy savings, shorter cleaning times, and lower costs for wastewater treatment. Their natural derivation, ease of neutralization, and the absence of hazardous waste products make enzymes an environmentally friendly alternative. While current enzyme applications in CIP are more prevalent in membrane cleaning, there is a promising potential for wider adoption in cheese industries. However, this transition requires comprehensive studies on cost-effectiveness, process control (inactivation kinetics), reusability of enzyme solutions, and potential residual activity's impact on subsequent product batches. By addressing these factors, the dairy processing industry can pave the way for more sustainable and energy-efficient cleaning solutions, aligning with the global push towards environmentally conscious practices in food production.

NEWS

**ELOPAK**

## Opening of the first U.S. carton plant

Elopak has opened its first ever U.S. carton converting plant in Little Rock, Arkansas. The state-of-the-art factory costs USD 100 million and will produce Pure-Pak® cartons for liquid dairy products, juices, plant-based drinks, and liquid eggs.


Said Thomas Körmendi, Elopak CEO: "Demand for our low-carbon, sustainable cartons in North America has been growing at an unprecedented rate for several years. This new factory will serve both new and existing customers across the United States, reaching millions of Americans every day."

The company first announced plans to build a U.S. production plant in June 2023 and construction started in March 2024, taking just under a year to complete. In September 2024, Elopak announced it was bringing forward plans to add a second production line at the plant after initial capacity sold out before the factory even opened. This line will be fully operational in 2026 and will contribute a further USD 110 million in annual revenue.

Elopak selected the Port of Little Rock for its new factory owing to the site's unrivalled connections to road and rail transportation, as well as proximity to the city's airport. The factory employs 100 people who will create top quality cartons. All carton folding, scoring, packing and loading is 100% automated, improving efficiency and optimising employee safety. Like all Elopak plants, the factory will use 100% renewable electricity.

# Efficient cleaning for tanks with agitators

## GEA Direct Sprayer DS 25

*The Direct Sprayer is flush-mounted to the tank wall and seamlessly integrated into the cleaning system*

With the GEA Direct Sprayer DS 25, GEA introduces a solution for industrial tank cleaning in the food and beverage industry, specifically designed for tanks with rotating installations. The patented spray technology effectively removes residues from the undersides of agitators, pipes, and flow breakers. A case study from yogurt production shows that this method cuts water use by 84.5% and shortens cleaning time by 87.5% compared to traditional tank flooding.

### Targeted cleaning

Strict hygiene standards, contamination prevention, and resource efficiency are key challenges in food and beverage production. However, cleaning tanks with internal installations poses a particular challenge: the undersides of agitator blades often remain in the spray shadow and are not adequately cleaned by conventional methods. The most common solution has been to completely flood the tank with cleaning liquid – a resource-intensive and time-consuming process.

The Direct Sprayer DS 25 sprays directly onto the undersides of the agitator blades while ensuring that the agitator mechanics remain unaffected. The cleaner is flush-mounted into the tank wall and can be positioned flexibly, ensuring full coverage inside the tank. The patented valve disc only opens when activated, ensuring an even distribution of the cleaning fluid. Since the valve plate opens inward, it does not interfere with the agitator.

### Maximum spray power and reach

The mechanically powerful full-cone spray targets the undersides of the agitators and efficiently removes residues. "Unlike alternative retractable cleaners, which often have a hollow cone or operate with a fan spray, our spray pattern is a true full cone," explains Jana Zimpel, Product Sales Manager for Cleaning Technology at GEA.

With a spray force of up to five kilograms, the GEA Direct Sprayer DS 25 effectively removes even tough residues.

Conventional cleaning systems often operate at lower forces, requiring longer exposure times or additional chemicals. The full-cone spray of the DS 25 cleans more efficiently while reducing resource consumption. With a cleaning range of up to five meters, the full-cone spray is also suitable for large tanks and reaches areas that previous solutions often left uncleaned.

## Case study: Yogurt production

A real-world example from yogurt production highlights the potential of the GEA Direct Sprayer DS 25. A typical tank in this industry is six meters high with a diameter of three meters and contains agitator blades arranged on three levels up to four meters above the tank floor. The conventional cleaning method involves flooding the tank with caustic solution and using rotation to clean the surfaces. This process, including flooding, circulation, and draining, takes two hours and consumes 29 cubic meters of cleaning liquid.

With the new Direct Sprayer DS 25, one cleaner per agitator blade level is integrated into the tank wall. This targeted cleaning approach drastically reduces fluid consumption to just 4.5 cubic meters, while the cleaning time shrinks to 15 minutes – an 84.5% reduction in water use and an 87.5% decrease in cleaning time.

"This time saving can be directly used for additional production capacity," explains Zimpel. "In yogurt production, for example, this means more batches per day or faster recipe changes without compromising efficiency."

## Versatile applications

The GEA Direct Sprayer DS 25 has been developed for use in the beverage, food, dairy, pharmaceutical, and home and personal care industries. It is particularly advantageous in production environments with frequent recipe changes, strict hygiene standards, and demanding cleaning requirements. The system delivers fast, efficient cleaning while minimizing water use and keeping production running smoothly. It can also be easily integrated into existing systems.

*GEA has developed the Direct Sprayer DS 25 as a water- and time-efficient solution*

*GEA Direct Sprayer DS 25 delivering powerful cleaning performance with five kilograms of spray force and a full-cone jet reaching up to five meters (photos: GEA)*

# Resilience meets transparency

## How the dairy industry can ensure quality and resilience through smart supply chain management

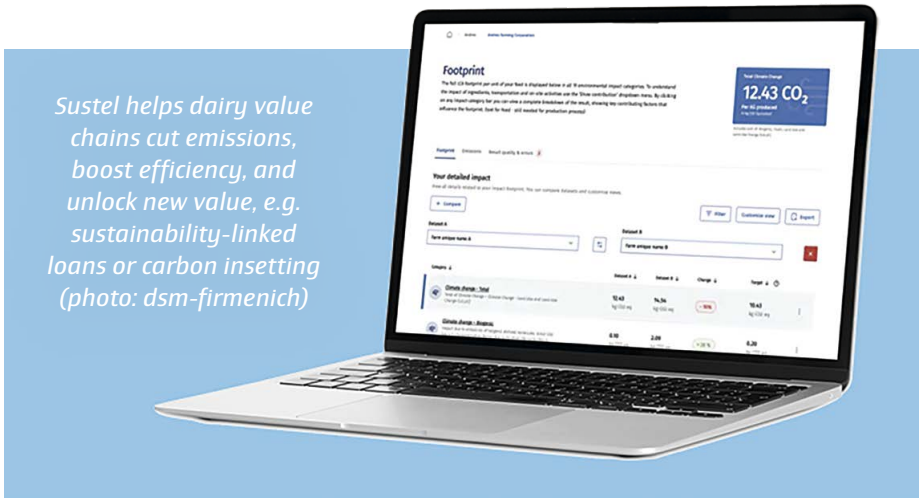
Authors:
Corinne Bonadei, Head of Precision Services, and
Silvia Sonneveld, Head of Vitamins Unit at dsm-firmenich Animal Nutrition & Health

The new UK-US trade agreement promises to expand agricultural market access, paving the way for deeper commercial ties between the two countries. Valued at an estimated $5 billion, the deal includes $250 million in agricultural products, opening up significant commercial opportunities across the food sector. While elements such as hormone-treated beef have reignited debate, the broader issue at stake is not individual products, but the resilience of our food supply chains.

As global trade evolves, the agri-food sector must look beyond short-term gains and focus on building transparent, adaptable systems that can uphold quality, meet consumer expectations, and withstand disruption. Environmental standards, food safety, and animal welfare remain core pillars in shaping that future.

### Future-proofing animal nutrition

Three major forces are reshaping the global agriculture sector: geopolitical instability, climate change, and increasingly conscious consumers. These factors are placing increasing strain on existing food production methods, and to stay ahead, or at least keep pace, the food production industry must rethink current strategies on resilient supply chains, looking towards more innovative production methods and adapting to new demands. Embracing digital innovation is central to this shift.




*Sustel helps dairy value chains cut emissions, boost efficiency, and unlock new value, e.g. sustainability-linked loans or carbon insetting (photo: dsm-firmenich)*

The advancement of machine learning is changing the way real-time data analytics can anticipate demand, simulate risk scenarios, flag vulnerabilities, and recommend alternative sourcing or transport routes, empowering faster, more informed decisions across the supply chain. The UK-US trade agreement highlights the growing need for international cooperation and strategic agility to maintain continuity in an unpredictable world. dsm-firmenich Animal Nutrition & Health, is committed to advancing sustainable, high-quality food production through innovation and responsibility.

Technology and sustainability must go hand in hand to help the industry address environmental challenges and supply chain resilience while maintaining public trust.


*FarmTell is a precision livestock management platform to improve farm operations (photo: dsm-firmenich)*

The company's Precision Service, Sustell™, provides lifecycle assessments to measure the environmental footprint of dairy, beef and other species while opening new value streams that empower actors within a supply chain to monetize their progress towards meeting sustainability targets (e.g. SBTi, ESG).

Meanwhile, FarmTell Milk™ is an app designed to optimize dairy farm operations by integrating farm operations and financial management into a single, user-friendly platform, offering real-time easy and actionable insights into dairy operations, from herd health to performance metrics, supporting consistent product quality and operational efficiency.

Together, these Precision Services help strengthen the food supply chain, driving smarter, more sustainable outcomes for producers and consumers alike.

## The hidden role of micronutrients

While it is essential to highlight technological advancements in the modern agri-food industry, we must not overlook the essential role that essential vitamins and carotenoids play in supporting livestock health, performance, and food quality.

In cattle, for example, vitamins such as A, B3, D, E and beta-carotene are the building blocks of healthy animals and essential for the development of every aspect of the lifecycle, from fertility to wellbeing.

- Vitamin A supports vision, reproduction, immunity and growth, ensuring cattle are in great health.,
- Vitamin B3 proper functioning of the metabolism supporting energy supply and immunity function, supporting milk productivity.
- Vitamin D3 supports bone development, limiting the complications of muscle weakness.
- Vitamin E provides an immune system modulation, which can decrease the risk of udder infections and clinical mastitis.
- Beta carotene increases fertility.

In modern farm systems, micronutrient supplementation is essential to support proper functioning of the animal and to minimize the risk of issues with reproduction, health and growth. When delivered as part of animal feed, these vitamins support optimal nutrition, boosting disease resilience, improving growth efficiency – enhancing the quality, shelf life, and nutritional value of the final food products.

## Resilience meets transparency

Traceability and risk mitigation are now just as vital to agri-food systems as sustainability itself.

With increasing visibility across the supply chain, producers can monitor farming practices in real time, identifying issues from animal health to potential disruptions, while reinforcing trust among today's more conscious consumers.

At the same time, diversifying supply sources and adopting digital tools helps mitigate risk through data analytics coupled with artificial intelligence, protecting continuity in the face of challenges like extreme weather or geopolitical instability.

Together, these elements form a foundational framework for a food system that is more reliable, adaptable, and secure. In a world that demands safe, sustainable food, this approach helps safeguard standards while opening up new opportunities for innovation.

By embracing strategic agility and next-generation technologies, we can build resilient supply chains and connecting farm to fork with confidence by feeding the world without costing the earth.

# Updating dairy classics in Pure-Pak

## Luxlait partners with Elopak

*Luxlait´s popular dairy range: freshly packaged in Pure-Pak*


Luxlait has switched several of Luxembourg's dairy classics into Pure-Pak® including fresh milk, chocolate milk, creams and fermented products.

Founded in 1894, the cooperative farmer-owned dairy today processes 500,000 litres of milk per day for 480 products. Luxembourgers grow up with Luxlait products, and its range of timeless classic products such as milk, creams, yogurts, cheeses, butter and ice creams.

This packaging shift follows the installation of a new filling line featuring an ultra-hygienic Shikoku S-PSF70UCe M21 machine by Elopak at Luxlait's state-of-the-art processing plant in Roost, near to Bissen in central Luxembourg. The new line is now producing a wide range of Luxlait's popular dairy products for Luxembourg consumers in Pure-Pak Sense cartons with the wave feature and PureTwistFlip 37i screw cap and Pure-Pak Classic cartons with easy opening.

For Luxlait the operation of the new filling machine ensures greater ease of use and efficiency. "This investment aligns with our commitment to optimize production processes whilst maintaining high-quality packaging," explains Gilles Gerard, CEO, Luxlait.

## 46% reduced plastic usage for 1 litre cartons

The move to Pure-Pak cartons has reduced the use of plastic materials used in Luxlait packaging. Eco-responsibility is at the heart of Luxlait's values and the dairy is investing in the latest technologies in its aim for carbon neutrality by 2050.

"Sustainability was a key factor, as the new packaging allows for a high reduction in plastic compared to our old milk packaging," continues Gerard. "Differentiation was also an advantage with the Wave feature offering better shelf visibility and more space for communication."

The products span across both the Luxlait brand and retailer brands and are filled in 250ml Pure-Pak Classic cartons with easy opening, plus 330ml Pure-Pak Classic, 500ml and one litre Pure-Pak Sense cartons with the wave feature. Organic fresh milk products also feature cartons with natural brown board for more enhanced sustainability reflecting natural bio-values.

"With the introduction of the new Elopak packaging, we have achieved a 46% reduction in plastic usage for our 1L cartons, as well as similar reductions across other formats. This represents a meaningful step towards reducing our environmental footprint while maintaining product integrity," adds Gerard.

## 100% Luxembourg – full traceability

With its factory exactly in the middle of the country Luxlait is a 100% Luxembourg company. This allows shortened collection routes with an average distance of 15km to each farm enabling full traceability and Luxlait to have one of the lowest carbon footprints in Europe at 0.004 km per litre of milk.

Luxlait and Elopak worked as one team for the installation of the latest filling machine technology from Shikoku. "This was a complex project with a lot of equipment to be installed," explains Bert Lohuis, Market Area Director Global Accounts, Benelux, UK & Ireland Elopak. "Together we made adjustments and modifications to the factory to improve space utilization and logistics, creating the flexibilities and efficiencies needed for filling such a wide range of different products."

The first Luxlait products in Pure-Pak cartons were on shelf in Luxembourg in late 2024 with more rolling out across 2025.



*photos: Luxlait*

# New recyclable barrier paper launched

## Reliable protection against temperature and humidity differences


Delfort is launching a recyclable barrier paper that reliably protects food during transport and storage with significant temperature and humidity differences. The combined oxygen, water vapor, and grease barrier maintains its functionality in the temperature range of -18 to +38 °C (-0.4 to + 100 °F).

Food is exposed to highly diverse environmental conditions along its journey: From packing at the manufacturer to delivery in a refrigerated truck, storage on supermarket shelves, and transport by consumers, temperatures and humidity often vary considerably. The period after purchase, for example, during hot summers, can be a particularly stressful period for packaged food. delfort has developed thinbarrier 303 to cope with these changing temperatures.

Under normal conditions, the oxygen barrier allows significantly less than ten grams per square meter per day to pass through. This prevents oxidation over a long period, which can cause fats and oils to become rancid. Furthermore, the fresh aroma and flavour of the foods are preserved. The water vapor barrier also allows less than ten grams per square meter per day to pass through, in both directions. It prevents refrigerated goods such as cheese from drying out. At the same time, it prevents powdered contents such as cocoa or cappuccino mix from clumping due to moisture penetration and prevents cookies from losing their crispness.

*"The strong barrier properties of thinbarrier 303 against water vapor are maintained even when refrigerated at four degrees Celsius and are even stable when deep-freezing at -18 degrees Celsius"*

Peter Hackl, Head of Packaging at delfort

The grease barrier's strength is particularly evident under heat. It prevents fats and oils contained in the food from escaping from the packaging. This maintains product quality and hygiene, and the appearance of packaged foods. This is crucial for cheese and chocolate, among other things.

Added Hackl: "The grease barrier remains stable even at temperatures up to 38 degrees Celsius. And it contains none of the per- and polyfluoroalkyl compounds (PFAS) that were often used in the past."

According to the company, thinbarrier 303 is easy and reliable to use and Its seal strength of 8 N/15 mm ensures secure containment of foods. Furthermore, the high seal strength prevents packaging with thinbarrier 303 from tearing during filling, transport, or handling. The heat seal also remains stable under the demanding climate conditions described above. The paper is also suitable for a variety of vertical and horizontal packaging machines.

Despite its strong barrier properties and high stability, thinbarrier 303 is lighter than comparable barrier papers. At the same time, recyclability is ensured: thinbarrier 303 meets the criteria of the standardised test methodology of the Confederation of European Paper Industries (CEPI).


***delfort is launching a recyclable barrier paper that reliably protects food during transport and storage with significant temperature and humidity differences (photo: delfort)***

# Shift to alu-layer-free aseptic cartons


*Hochwald, is at the forefront of the move towards aseptic carton packaging without aluminum layer as it launches UHT milk in SIG cartons with SIG Terra Alu-free packaging material (photo: SIG)*

As SIG experiences a shift and demand towards aseptic cartons without aluminum layer, Hochwald, one of the leading dairies in Europe, is at the forefront of this move as it launches UHT milk in SIG cartons without aluminum layer. Using the packaging material SIG Terra Alu-free further reduces the already low carbon footprint of SIG standard packaging material by up to 34%*.

SIG was the first in its industry to launch a packaging material without an aluminum layer for aseptic carton packs and SIG customers have now filled more than 3.6 billion liters of food in alu layer-free aseptic cartons from SIG. The company has used this broad expertise and experience to constantly expand its SIG Terra portfolio of sustainable packaging innovations. With the choice of SIG Terra Alu-free, Hochwald sets an example of enabling consumers to make a more sustainable choice, including reducing $CO_2$e emissions by simplifying the carton's material structure. The environmental advantages are clearly communicated to consumers on the outside of the carton pack.

SIG Terra Alu-free packaging material is made from up to 82% FSCTM-certified renewable paperboard, with ultra-thin polymer layers to protect food and beverage products over long periods of time, without the need for refrigeration.

Volker Kölsch, Head of Procurement at Hochwald: "We're committed to reducing carbon emissions by at least 50% within ten years, as we continuously strive to protect the environment. Our partnership with SIG is a building block in achieving this goal – by using SIG Terra Alu-free packaging material for our UHT milk products in SIG MidiBloc and SIG SlimlineBloc carton packs, the renewable share of the packaging is increased, and $CO_2$e emissions are significantly reduced, as no aluminum layer is used.

Both SIG and Hochwald have joined the Science Based Targets initiative (SBTi) and have their sustainability targets SBTi approved. This includes SIG's commitment to reaching net-zero greenhouse gas emissions across its value chain by 2050.

* based on an independent ISO-compliant life-cycle assessment for SIG SlimlineBloc in Germany – IFEU LCA: CB-100734c: https://go.sig.biz/l/251992/2024-06-07/7rbypt/251992/1717755640TqYU2PTn/SIG_Terra_Alu_free_and_SIG_Terra_Alu_free_Forest_based_polymers_and_SI.pdf

# Fortified dairy products market

## USD 160 billion expected by 2032

photo: AI-generated by CatGPT/Sora

According to market research firm DataIntelo, the global fortified dairy products market size was valued at approximately USD 90 billion in 2023 and is poised to reach an impressive USD 160 billion by 2032, expanding at a compound annual growth rate (CAGR) of around 6.5% during the forecast period. This growth trajectory is largely driven by increasing consumer awareness regarding nutritional fortification and its role in enhancing health benefits in daily diets.

The fortified dairy products market is witnessing robust growth globally, driven by the rising demand for nutrient-enriched food products, increasing health awareness, and government initiatives to combat malnutrition. Fortified dairy products, which include milk, cheese, yogurt, and butter enhanced with essential vitamins and minerals such as Vitamin D, Vitamin A, calcium, and iron, are gaining prominence as consumers seek functional foods that support overall well-being.

### Key drivers of the market

» Rising health consciousness:
Modern consumers are increasingly aware of the importance of micronutrients in disease prevention and long-term health. Fortified dairy products offer a convenient and effective way to incorporate essential nutrients into the daily diet.

» Government initiatives and regulations:
Many governments are mandating or encouraging food fortification programs to address public health concerns like rickets, anaemia, and osteoporosis. These initiatives create a favourable regulatory landscape for fortified dairy producers.

» Expanding middle class and urbanization:
Rapid urbanisation and the expansion of the middle-class population in emerging economies are increasing the demand for convenient and health-oriented food options, including fortified dairy products.

» Growing demand among children and elderly:
Fortified dairy products are particularly popular among children, pregnant women, and the elderly, who are more susceptible to nutrient deficiencies. Paediatric and geriatric nutrition segments significantly contribute to market growth.

While the market shows significant promise, it also faces challenges such as:

» High production costs and technological requirements
» Limited consumer awareness in rural areas
» Regulatory complexities regarding food fortification levels

However, ongoing research and innovation in nutrient bioavailability, improved shelf stability, and taste enhancement are opening new opportunities. Collaborations between governments, NGOs, and private companies are also helping in expanding market reach and consumer education.

The fortified dairy products market is poised for continued expansion, supported by a strong demand for functional nutrition and enhanced lifestyle choices. As the global population grows more health-conscious and as technology enables more effective nutrient delivery, fortified dairy will play an essential role in the future of global food security and health promotion.

Companies that focus on innovation, transparency in labelling, and strategic partnerships will be best positioned to capitalise on this evolving market landscape.

# Milk packed in stick packs

## Euromilk relies on consumer-friendly packaging


*"We are very satisfied with the consumer friendly packaging solution this machine offers for our UHT milk"*

Tibor Balogh, CEO of Euromilk

The market for aseptic stick packs continues to grow rapidly. They are extremely easy for consumers to handle and manufacturers benefit from lower material costs. Compared to conventional portion cups for UHT milk, they can reduce a manufacturer's packaging material requirements by up to 50% – the carbon footprint is greatly improved and the impact on the environment is reduced.

In addition, stick pack packaging has a positive effect on transport volume (50% more packaging for the same packaging volume compared to portion cups) and transport weight. Additionally the stick packs can be packed in decorative boxes and presented accordingly in the supermarket. These are the reasons why Slovakia's dairy company has chosen this consumer-friendly packaging from IMA Hassia. The implementation of the system up to commissioning took approximately 12 months.

### 36,000 stick packs per hour

The machine runs in 2-shift operation with 12 lanes and produces 36,000 stick packs per hour. The maximum output is 43,200 stick packs per hour.

The machine sterilizes the flat foil on all sides using active packaging degermination (germs eradicated >log 5) and feeds it into the sterile area. Cutters then notch the foil in strips through to the seal layer.

The packaging is subsequently formed into duplex stick packs under sterile conditions using a special forming shoulder and then sealed on three sides. Lastly the stick packs are filled with UHT milk, also in the sterile area, using dosing equipment specific to the product. The sticks have a perforated tear-off edge and are easy to open.

*The stick packs are packed in decorative boxes and presented accordingly in the supermarket (photos: IMA Hassia).*


## Additional formats planned

Different kind of UHT milk: whole milk, semi skimmed milk, lactose free milk, and coffee cream are sold under the name 'MINIMILK'. The latest product innovation is a plant-based oat drink in this variant under the name 'MINIOAT'. All varieties are packaged in a 10 ml format; the manufacturer plans to expand the range to include a 7 ml format as well. To broaden market opportunities, the dairy company has also initiated the Halal certification process. The practical stick packs are an ideal solution for offices, hotels, cafés, fast-food chains, trains and buses as well as on-the-go. It will come in handy at conferences, events and all types of social occasions where warm drinks are being served with no refrigeration options available.

"We are very satisfied with the consumer friendly packaging solution this machine offers for our UHT milk" reported Tibor Balogh, CEO of Euromilk.

Currently, another project is being planned at Euromilk for a cup filling machine from another company within the IMA Dairy & Food Group.

### Euromilk

EUROMILK, a.s. was founded in 1964 and converted into a joint-stock company in 2001. Since its founding, it has continued a long tradition of agricultural production in southern Slovakia. The company is involved in the processing of raw milk as well as the production and distribution of dairy products. The product portfolio, marketed under the brands 'Euromilk' and 'Kukonia', includes UHT milk, cream, butter, quark, fermented dairy products, and milk powder pudding.

*The packaging is formed into duplex stick packs under sterile conditions using a special forming shoulder and sealed on three sides.*

# Recognising dairy's difference

## Why the EU livestock strategy must reflect what sets milk and dairy apart

Author:
Alexander Anton, secretary general of EDA

### A strategic shift, finally acknowledged

The launch of the EU Competitiveness Compass sets a new course: competitiveness as the guiding principle across all EU policies. Within this doctrine, the Vision for Agriculture and Food 2040 and its Livestock Workstream aim to shape a forward-looking strategy for Europe's agri-food economy.

Commissioner Hansen's May 2025 launch confirmed that the EU recognises the need for a livestock strategy based on diversity, not uniformity. The Commission's call for targeted, territorial solutions is a step in the right direction. But this must go further. Dairy is not just territorially diverse – it is structurally different from other livestock sectors. It requires a dedicated strategic pathway within the broader livestock framework.

### Dairy: the strong pillar of EU livestock

Milk and dairy are produced in all 27 Member States. With around 550 000 dairy farmers and over 300 000 employees in 12 000 processing sites, dairy is the economic backbone of rural Europe. It is the only livestock sector in the EU that is more than self-sufficient and delivers a consistent trade surplus.

This performance is rooted in a strong and resilient structure: farmer-owned cooperatives and family-owned companies. Our model is local in presence, global in reach, and built for long-term value creation. Dairy is not only a vital part of agriculture. It is Europe's most competitive and socially rooted livestock sector.

## Dairy is different. Policy must reflect that

Too often, livestock is approached as a single file. But dairy operates on a completely different scale and model than other parts of the livestock industry. It relies on long production cycles, capital-intensive infrastructure, and a deep diversity of farming systems – from alpine pastures to highly specialised lowland dairies.

That economic and structural distinction must guide policy thinking. To be effective, the EU livestock strategy needs a dairy-specific roadmap that reflects this difference and reinforces the sector's unique role.

## Competitiveness under pressure

The European dairy sector has remained competitive despite high energy and labour costs, a demanding regulatory framework and volatile markets. That margin is narrowing. Global competitors are closing the gap in quality, scale and access while facing fewer constraints.

If Europe wants to retain its global leadership in dairy, it must enable value creation across the chain. The European Competitiveness Fund should serve as a strategic lever, supporting innovation, digitalisation and profitability on farm and in processing.

photo: AI-generated by ChatGPT/Sora_IDM

## Sustainability, already delivered

Environmental progress in dairy is not a promise. It is already happening. The Dairy Product Environmental Footprint (DPEF) provides a science-based, operational tool covering 17 indicators. It reflects the territorial and company-specific realities of milk production across Europe and is already used by processors and supply chains.

If the European Commission wants to set new sustainability benchmarks, it must prioritise sector-led tools like our DPEF. Reinventing reporting frameworks only adds cost. The dairy sector has done the work. Now we need policy alignment.

## Recognition must lead to action

The European dairy sector is ready to contribute to a competitive, sustainable and resilient EU food system. But this requires more than rhetorical recognition. It calls for tailored policy, aligned investment support, and full integration of dairy's distinct role into the livestock strategy.

One size does not fit all – our structural difference must shape the policy. If the EU gets this right, dairy will continue to deliver for our Union, for our rural communities and for the next generation.

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NEWS

## FrieslandCampina
### Reaching agreement to sell Romanian operations

Royal FrieslandCampina N.V. has reached an agreement to sell its operations in Romania to Bonafarm Group, including the leading local brand Napolact and the production facilities in Cluj-Napoca and Târgu Mureș.The decision follows a strategic review of FrieslandCampina's activities in Romania and aligns with the strategy of the Business Group Europe to focus on core markets, high value-added growth segments, synergies across the company and markets where the milk from FrieslandCampina member dairy farmers can be optimally valorised. Although the Romanian operational company holds a leading position in the local dairy market, its activities offer limited synergy with the Europe portfolio and do not contribute to the valorisation of FrieslandCampina member milk. With Bonafarm Group as the new owner, the Romanian business is in capable hands.

photo: Emmi

Emmi introduces new rapid test system
**Analytics**

photo: littlehandstocks_stock.adobe.com

Natural food colors for dairy products
**Ingedients**


photo: Baladna/GEA

GEA mandated to build world's largest integrated dairy facility in Algeria
**Technology/IT**


photo: IDM

Plant based dairy alternatives
**Special Supplement**

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