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January/February 2023

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CHR HANSEN

Improving food & health

Healthy Hedonism

GNT identifies disruptive new color trend

GNT, the global supplier of plant-based EXBERRY colors, explored how today's consumers see color in the world of food and drink and beyond. The research revealed a powerful new trend shaped by Generation Z's desire to embrace joy and creativity while staying true to core values.

The new generation of consumers is radical, diverse, and digitally native – and it is rapidly changing global attitudes toward food and drink. Gen Z shoppers are committed to holistic wellness and are actively promoting environmental and social agendas through their purchases. At the same time, their devotion to social media means visual impact is more important than ever before.

This consumer behavior can be described as Healthy Hedonism. This ethos is now set to spark a global surge in demand for eye-catching products that are good for people and planet. From seductive healthy snacks to kaleidoscopic TikTok treats, the trend showcases a lifestyle that is playful, considered, and nourishing.

GNT's analysis found that it is already generating new directions in natural color. For example, cute soft-play pastel shades are being used to redefine what "healthy and sustainable" looks like. Bright, clashing color combinations can also enable brands to create virtuous products that satisfy the desire for creativity and self-expression.



For Gen Z shoppers, visual impact is more important than ever before (photo: GNT)

NEWS



Transfer of pallets from the AGV to the SSI Orbiter channel shuttle for storage at heights of up to 10 meters (photo: SSI Schäfer)

NEWS

Greater efficiency in the flow of goods

SSI Orbiter in Combination with AGVs

Fluctuating demand and a shortage of skilled workers pose mounting challenges for many companies. In order to translate multi-layered requirements into efficient logistics structures, companies need flexible logistics systems that work together perfectly. SSI Schaefer offers a solution in the form of an intelligent combination of space-saving pallet channel storage with an SSI Orbiter channel shuttle and automated guided vehicles (AGV) – a solution that also provides a gradual entry into automation. In parallel, the system guarantees 24/7 availability of goods, helping compensate for the ongoing labor shortage. Operators can start with a manually operated SSI Orbiter environment and then introduce a control system with manually operated ground conveyors, gradually integrating AGVs as needed.

The solution doesn't require a large initial investment – it can grow as the company develops, making it especially attractive for small and medium-sized enterprises. The turnkey combination of SSI Orbiters and AGVs is especially practical where SKU variance is low, particularly in the food and beverage industry. Manually operated bin stackers can be integrated flexibly to cover temporary peaks.

Milk market 2023

The art of finding the balance



Monika Wohlfarth
 CEO, Zentrale Milchmarkt
 Berichterstattung GmbH,
 ZMB, Berlin, Germany

It is always uncertain what a new year will bring. But at the beginning of 2023, the situation is particularly uncertain. 2022 was full of surprises and marked by the ongoing Corona pandemic, war in Ukraine, energy crisis, supply chain disruptions and input shortages, a sharp rise in inflation, rising interest rates, tightening political conditions and climate change. Some things eased towards the end of the year, but the challenges remain: the Corona pandemic has abated in Europe, but is spreading rapidly in China after the abandonment of the zero covid policy – with uncertain consequences for supply chains and demand for dairy products from the world's largest importer. Energy prices have softened significantly again, but remain and are likely to remain significantly higher than they have been in the past. Inflation has passed its peak, but will probably also remain comparatively high.

Consumers have changed their purchasing behaviour in 2022 under the influence of increasing cost of living and have turned more towards products in the entry price bracket – at the expense of higher-priced items such as branded products and organic products. The global market has also been buying more cautiously for some time. It remains to be seen whether this is a longer-term change in behaviour.

Above all, however, the year begins with high milk prices, the level of which was completely unimaginable just a year ago. This was preceded by massive increases in the prices of dairy products as a result of the external influences described above and falling milk production of all important exporters. Contrary to all expectations, the recently extraordinarily high revenues of milk producers are causing production in Europe to rise again – despite the higher production requirements, the lack of farm successors and significantly increased costs. The prices are so attractive that they are being taken. With demand at home and abroad somewhat subdued at the same time, supply is now more than sufficient again, even if no major stock is likely to have built up yet. In the meantime, commodity prices have fallen significantly again, while some long-term contracts have still increased in price.

Taking back milk prices is inevitable and finding the right pace is a major challenge. Large and rapid steps would have to be taken to slow down production again and bring the market back into balance. If dairy farmers do not row back production fast enough, the imbalance between supply and demand will increase. The whole price structure would then come under greater pressure – and more producers would quit. The current expansion of milk production is only the short-term answer to high milk prices. In the longer term, the various measures for more sustainability will bring milk supply back to the declining path of the past years and increase competition among dairies for the raw milk.

ENEMAC**Stainless half-shell metal bellows coupling EWR**

The EWR half-shell version made of stainless steel is new in the range of couplings specialist Enemac from Kleinwallstadt, Germany. The use of A4 or A2 stainless steels makes it suitable for use in demanding environments and in sterile or even acidic applications, as well as in the food sector.

With type EWR, the two lower halves of the hub can be removed and the coupling placed radially on the shaft ends. The hygienic design metal bellows coupling is available in 7 sizes for nominal torques of 10 Nm up to 1,200 Nm and for shaft diameters from 7 to 85 mm.



Enemac offers half-shell metal bellows coupling (photo: Enemac)

NEWS

CP KELCO / CHR. HANSEN**Ambient, plant-based “vegurts”**

CP Kelco and Chr. Hansen offer a collaboration combining their world-leading expertise and solutions to take consumer-friendly, shelf-stable, plant-based yogurt alternatives (“vegurts”) to the next level.

The collaboration demonstrates that production of nutritious and great-tasting, ambient, plant-based yogurt alternatives are possible for a variety of different plant bases. The result of this collaboration includes industrially validated prototypes of drinkable and spoonable vegurts with either oat, soy, pea, coconut or almond bases.

To date, a range of vegurt prototypes are available to food producers for tasting, and they have received positive feedback from select customers. The prototype recipes can be tweaked to meet specific requirements for sugar, protein, fat, texture and flavor.



CP Kelco and Chr. Hansen have jointly developed shelf-stable, plant-based yogurt alternatives (photo: Chr. Hansen)

NEWS

AMCOR**Ovenable flow pack**

Amcor has been awarded ‘Flexible Plastic Pack of the Year’ at the UK Packaging Awards 2022. The company has been recognised for its Amcor PrimeSeal Ovenable Flow Pack, a lightweight flow pack for cooking food in the oven, containing a 100% hermetic seal and self-venting technology, that meets consumers’ and brands’ demand for optimised, convenient and sustainable packaging.

To ensure confidence and convenience for consumers, the four-side gusset-shaped design of the pack helps to prolong product freshness, reduce the cooking time, and improve flavour when cooked.

The film on the ovenable flow pack also provides optimisation for brands. It has been developed to run at high speed in VFFS machines and allows brands to print directly on the film.

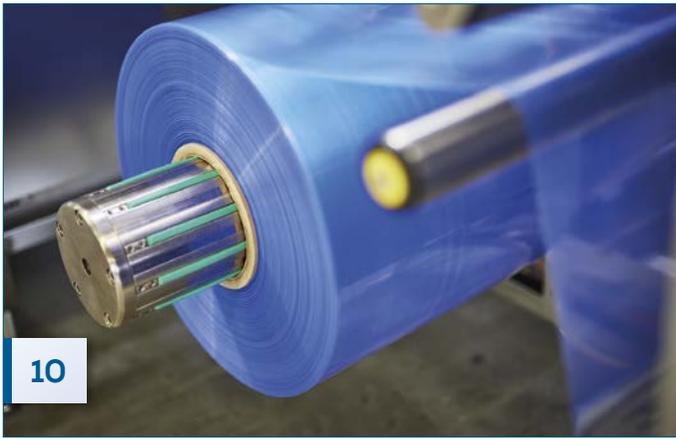


Amcor PrimeSeal Ovenable Flow Pack is a lightweight flow pack for cooking food in the oven (photo: Amcor)

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Consequence of the war

Ukrainian dairy industry in tatters

Since the beginning of the Russian invasion, Ukrainian dairy companies have had to deal with capacity destructions, labour and raw material shortage, as well as turmoil in the domestic market. Despite that, dairy plants managed to survive, rebuilt logistics schemes and even ramped up export supplies to Europe. Still, in the wake of blackouts, the outlook for the industry looks vague.

The entire country was stunned when the Russian troops crossed the Ukrainian borders on February 24, 22. Quite a few dairy plants did not open their doors that day, and even those that did were operating far from normal. However, the production disruptions have not entailed shortages in the market, as another consequence of the first days of the fights was a nosediving demand. Millions of Ukrainians fled to Europe, while those left saw their purchasing power plummeting.

The migration wave is expected to have a strange effect on the market statistics this year, as per capita dairy production in Ukraine is predicted to rise from 212 kg in 2021 to 229 kg in 2022, according to the Ukrainian union of dairy companies. This means that the Ukrainian population is shrinking faster than dairy production.

First days of shock

"For the dairy industry, the first days [of the Russian invasion] was a shock: several international companies shut down their plants, established logistics schemes for the delivery of raw materials were disrupted, and farmers had no idea what to do with raw milk," the press office of the dairy union reported, adding that some share of dairy plants suspended operation.

"Farmers changed supply schemes on the go, milk was delivered where the situation was permitting, and sometimes raw milk was dropped off free of charge," the press office added.



Ukraine is losing raw milk as 50,000 cows were killed

In addition, numerous milk farms and dairy plants ended up in the territories controlled by the Russian troops. In most cases, this meant that they were temporarily driven out of business. However, as the tides of the war changed and Russians retreated from around Kyiv, Chernihiv, Sumy and, several months later, Kharkiv, life started gradually returning to the Ukrainian dairy industry.

As of May 2022, 70% of Ukrainian dairy plants were up and running again. Most plants managed to rebuild their supply schemes, and some production capacities were relocated from the territories affected by hostilities.

Moreover, some dairy plants managed to boost export to Europe. In October 2022, Ukraine sold 9,000 tonnes of dairy products to foreign customers, 70% up compared with the same period of the previous year, the Ukrainian Club of Agricultural Business (UCAB) reported. Ukrainian cheese exports nearly tripled, reaching 1,300 tonnes, with most products being supplied to Poland, Moldova and Kazakhstan.

On the other hand, dairy imports totaled 4,400 tons in October, 58% lower than in the same period of the previous year,

UCAB estimated, adding that there are no conditions for growth in import supplies, given the current state of play in the Ukrainian market.

One million tons of milk less

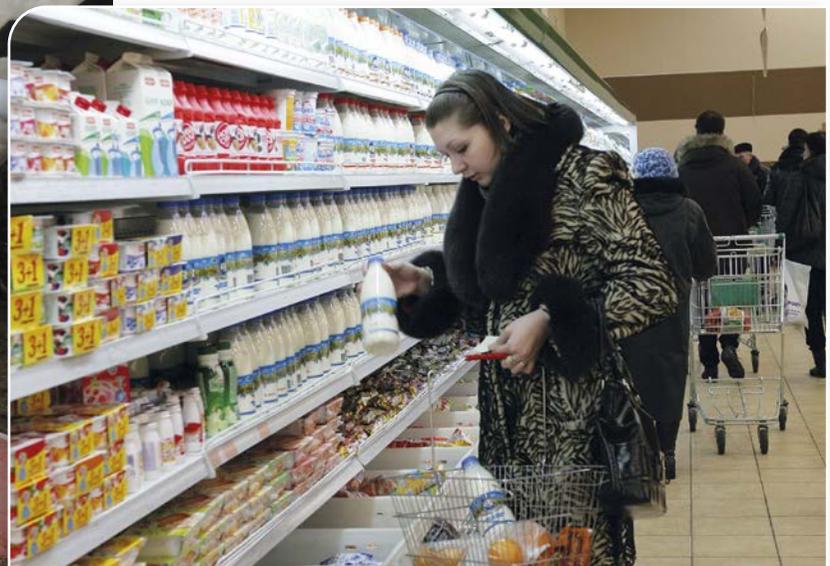
However, the war still takes a heavy toll on the Ukrainian dairy industry. Since the beginning of the full-fledged Russian invasion, Ukrainian farmers lost nearly 50,000 heads of cows, the dairy union reported, adding that only cattle at the industrial farms were counted. There is no understanding of how big the losses in the segment of the individual farms of the citizens could be.

Some animals were killed by shelling; others died in the midst of hostilities or from starvation after the farms were abandoned by their owners, who ran for their lives to the safer areas. Others were culled due to supply disruptions and growing uncertainty.

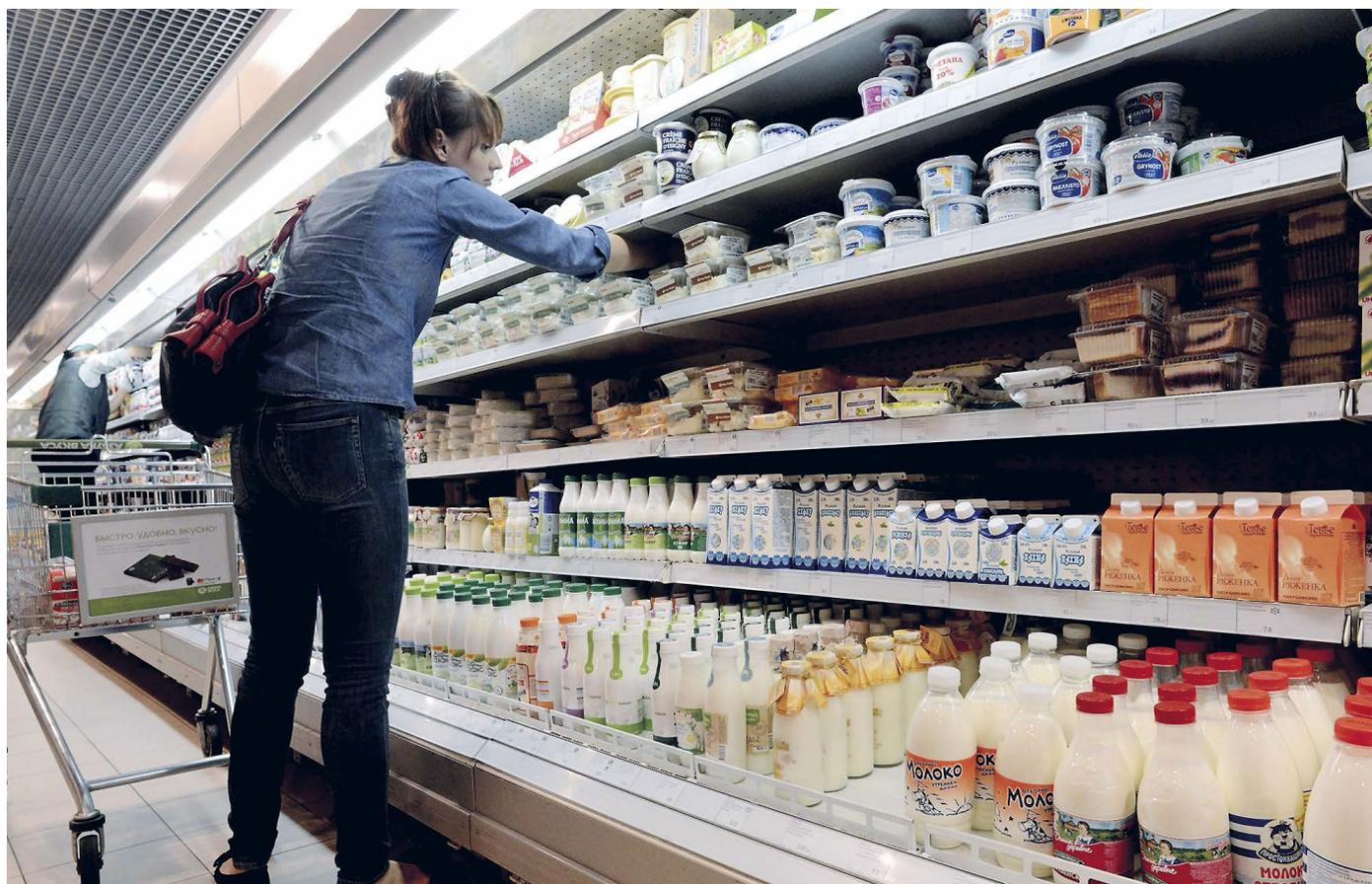
Not only did dairy farmers suffer losses from the Russian invasion. As of September 15, the Ukrainian Agricultural and Food Ministry estimated that the agricultural industry suffered direct losses of \$6.6 billion. Poultry and pork producers also sustained heavy damages, leaving alone grain farmers who found themselves between the hammer of skyrocketing costs and an anvil of the seaport blockade, which narrowed export opportunities and pushed the market into an oversupply crisis.

In the first ten months of 2022, Ukraine's raw milk production dropped by 920,000 tons or 12.4% on a year-to-year comparison, the dairy union estimated. Undoubtedly, by the end of the year, the production losses will cross the 1 million tons mark.

"Still, thanks to the efficient operation of dairy farms in safer regions and the relocation of livestock from the affected areas, it was possible to minimize the loss of industrial milk production," the dairy union said.



Ukraine expands export to Europe



War takes a heavy toll on Ukrainian dairy consumption

In January-October of 2022, Ukrainian industrial farms produced 2.185 million tons of milk, 5.2% less than in the previous year. Individual farms of the citizens, in turn, see their output plummeting 15.6% to 4.389 million tons. The dairy union explains that private farmers are not as flexible as industrial operations: they cannot remove their herds to safer territories and generally have fewer resources to weather the storm.

Before the Russian invasion, most dairy plants in Ukraine ran at 60% of their designed production performance, Arsen Didur, head of the Ukrainian dairy union, estimated. Things are far from perfect, but since some part of dairy plants suspended operation, those that stayed in business saw their capacity utilization ratio improving.

On the other hand, Ukrainian dairy plants sell 20% of their products through state tenders, 30% through their own channels, and 50% through retailers. One of the biggest problems for dairy plants is associated with delayed payments, as wholesalers find themselves in dire financial conditions and have difficulties maintaining operations.

"By sticking to this practice of non-payments, retailers create a severe problem. These non-payments lead to the fact that plants, in turn, cannot make timely settlements with raw materials suppliers and farmers, which leads to problems that prevent them from carrying out sowing and forage harvesting on time," Didur said.

Blackouts are the biggest threat

Since October 10, on top of other challenges, the Ukrainian dairy industry has had to deal with blackouts as Russia embarked on a new tactic of targeting critical infrastructure with missile and drone strikes. Russian attacks have crippled half of Ukraine's energy infrastructure, Hans Kluge, the WHO's regional director for Europe, said at a press conference in Kyiv in November, warning that the upcoming winter "will be about survival" for Ukrainians.

Didur warned that dairy processing plants suffer the most from the blackouts in the Ukrainian food industry since working with milk requires an uninterrupted power supply.

"Milk processing is a systemic and continuous process. Violation of technology will lead to higher prices and a shortage of goods", Didur said.

In the wake of power shortages, Ukrainian market operator Ukrenergo turns to scheduled outages. However, the schedules appear to be not very reliable, as every new strike making through the Ukrainian defences results in an emergency outage.

Didur admitted that due to unscheduled outages, dairy plants have already lost large stocks of raw materials and finished products. Some plants managed to establish backup power generation sources based on diesel generators. The

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price of dairy products manufactured using electricity from diesel generators, Didur said, will be higher.

Market players estimate that, on average, the price of electricity from diesel generation is by a factor of 2 to 4 times higher compared to that from the common energy grid. In addition, not all market players have already secured diesel generators. Currently, it takes from 3 to 5 weeks to get new generators from Europe.

Ukrenergo urges milk processing plants to reduce electricity consumption by up to 50%. But, according to Didur, such a reduction will entail a decrease in production volumes, a reduction in wages for employees, a decrease in tax revenues, and eventually, a shortage of Ukrainian dairy products on the market and a rise in imports.

The Ukrainian dairy union appealed to the government, asking for urgent assistance. Still, as the energy remains in short supply, there is no clarity on what the authorities can do to help.

"If the issue remains unresolved, the consequences for the industry could be devastating. Dairies will be forced to stop receiving milk, and milk producers, having no sales, will lose their livestock," Didur warned.

Ukraine is undoubtedly in the worst winter in its history. Under some scenarios, the continuing strikes on the energy infrastructure could trigger a new migration wave, driving millions more citizens to seek shelter in Europe. So far, most dairy plants in the country have coped with the crisis, but as the end of this conflict is nowhere in sight, there are no guarantees that the worst time for the industry has already passed.



SÜDPACK

Pure-Line packaging films

Pure-Line packaging films from SÜDPACK has innovative material structures setting standards in terms of functionality, processing capability and sustainability. Because the film manufacturer already offers a wide range of high-performance mono-materials with outstanding thermoforming properties for the production of recyclable PP-based packaging concepts in widths ranging from 200 to 400 µm.

Pure-Line is a series of innovative packaging films (photo: SÜDPACK)



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Cheese maturation in bags

Perfection requires expertise



It is only through maturation that cheese becomes what it is meant to be: a high-quality, natural product with a distinctive flavor, signature aroma and appetizing appearance. The dairy industry and small cheese dairies have benefited for more than 50 years from the strong partnership between SÜDPACK and MBM innovations, one that sets standards with its passion for cheese maturation and, most particularly, with its extensive expertise when it comes to maturation quality, product protection and shelf life. The shared objective of the two companies is to always offer customers an efficient, safe and forward-looking all-in-one solution in which the high-performance packaging materials are optimally designed for the packaging machines.

The histories of the two companies are closely linked: In the 1960s, Alfred Remmele developed a converting machine in his garage in Ochsenhausen to produce plastic bags that allowed for controlled atmosphere modification. The maturing bags soon formed the foundation on which SÜDPACK's developed to become a leading manufacturer of high-performance films for the packaging of food, technical products, medical goods and pharmaceuticals.

It was when trained dairy master Remmele started looking for a suitable vacuum packaging machine for his films for cheese maturation in 1971 that he met the company founder of MBM, Sebastian Mayer. Mayer went on to develop the VSM vacuum system and built the first semi-automatic vacuum packaging machine for cheese. While SÜDPACK invested heavily in modern technology, continuously expanded its portfolio of functional tubular films and advanced to become a specialist in maturing bags, MBM continued working at full speed on the optimization of its packaging machines. In 1986, the first VSM machine with automatic bagging (with a bag magazine) hit the market and was followed by the first fully automatic VSM machine with a feeding system for taped bags

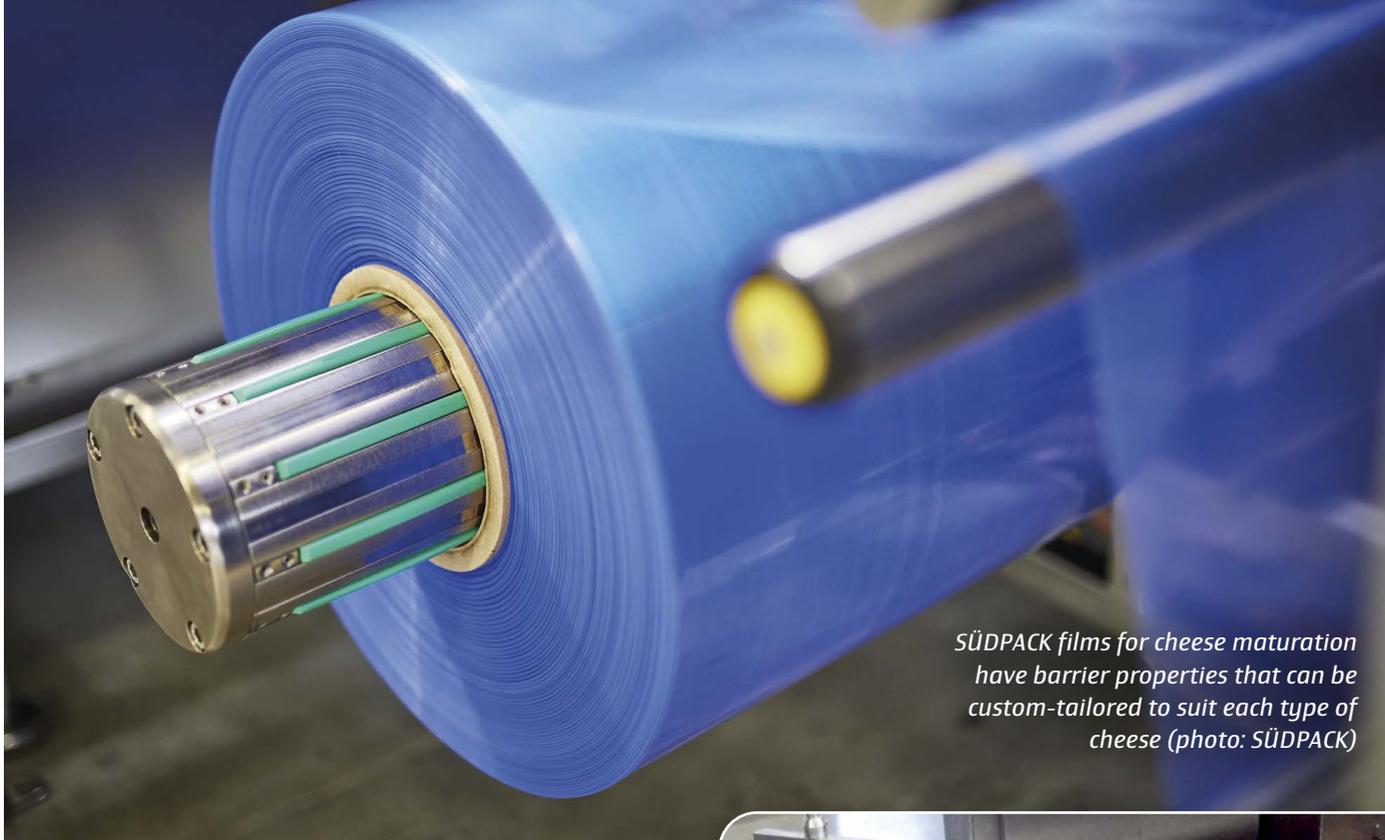
on a roll in 1997. Today, Europe's largest cheese dairies as well as renowned companies outside Europe, such as within the Americas, belong to the clientele of the machine manufacturer.

Unique machine technology for the perfect packaging results

The unique VSM vacuum system is the perfect choice for packaging cheese for maturation due to the special suction nozzles that allow for evacuation directly in the bag. This means the entire evacuation process is carried out under normal, atmospheric pressure without the need for a vacuum chamber. This guarantees a high-quality vacuum that is gentle on the product – which is not only advantageous for the sensitive product structure of cheese, but also leads to optimal maturation results. Types of cheese that form holes, such as Emmentaler or Tilsiter, benefit most particularly from the VSM system and mature with even hole formation and without edge holes. Many other types of cheese as well, such as Gouda or Jarlsberg, mature to the highest quality with the VSM system. Moreover, by packaging in an atmospheric vacuum in the maturing bags, the film thickness is the same for the entire product, which is another key advantage for even maturing conditions and a guarantee for safe handling and a high level of packaging safety.

An optimal high-performance film is the result of comprehensive expertise

The SÜDPACK films for cheese maturation are distinguished by an optimally designed film architecture with barrier properties that can be custom-tailored to suit each type of cheese. They have been specifically developed for types of cheese that mature during transportation and storage and that are meant to develop their full flavor after a maturation process that takes several months.



SÜDPACK films for cheese maturation have barrier properties that can be custom-tailored to suit each type of cheese (photo: SÜDPACK)

For both hard cheese and semi-hard cheese, the special films are equipped with an oxygen barrier so the cheese can develop its full flavor. At the same time, this optimally protects the cheese from the unwanted growth of yeast or mold. "Cheese is a very special product that requires the appropriate conditions for maturing and therefore the maximum level of know-how when it comes to film production. Moisture or temperature, for instance, influence the growth of bacteria. Take the popular Emmental cheese as an example, in which propionic acid bacteria are responsible for hole formation in the cheese and only become active at a certain temperature," explained Dieter Schmidberger, who in his position as Sales Manager at SÜDPACK is also responsible for the sale of the SÜDPACK/VSM system solution.

One of the most important advantages of the system solution is that no rind is formed during the maturation process. As a result, there is no need to remove a rind from the bag-ripened cheese before it is cut or grated. This makes it possible to use the entire piece of cheese and increases the yield. And when it comes to productivity and costs, this also offers significant advantages.

The high-quality tubular bags, bags on a roll and side-gusseted bags are produced by SÜDPACK on modern extrusion and converting machines. Due to decades of combined expertise, it is possible to perfectly design them to meet customers' needs in terms of format, size, barrier properties and printing. Furthermore, the close collaboration with MBM ensures that the packaging concept has been optimally tailored to and extensively tested on the partner's fully and semi-automatic packaging machines.

The demand for sustainable film solutions is growing
 SÜDPACK now offers a diversified portfolio of high-performance films to meet virtually any packaging requirement, one that always caters to the latest trends and is continuously expanded. The need



VSM vacuum system carries out the entire evacuation process under atmospheric pressure without the need for a vacuum chamber (photo: MBM)

for material-efficient and recyclable film solutions was also recognized very early on by the leader in technology and innovation, which means the company is also optimally prepared with its available production capacities. Dieter Schmidberger: "The demand is increasing significantly at the moment, particularly for PP and PE-based film concepts, because these structures are classified as recyclable in many countries. We have therefore set up our system capacity so we can maintain our leading position in all areas of both film and bag production as well as our performance standard as a highly reliable supplier in the market."

VSM machines are designed to save energy during the entire packaging process (photo: MBM)



Within the scope of its sustainability roadmap, SÜDPACK is also committed to a functioning circular economy in the market. With the company’s intelligent material management, which is now also certified according to ISCC Plus, reusable materials that are generated in film production can be systematically processed and reused in production. At the same time, SÜDPACK has been investing in the Carbolig technology for more than two years. Unique in the world, the process makes it possible to recover valuable pyrolysis oil from film structures that were otherwise non-recyclable by using chemical recycling on an industrial scale. This oil can in turn be used for producing films for even the most demanding applications, such as in the food industry.

“For us as a responsible family business, sustainability has many facets – and, most importantly, is thought of holistically. This is why in the development of our film solutions, we focus most particularly on achieving optimal product protection with the smallest possible footprint. Our goal: as little packaging as necessary, as much safety as possible. By using a broad variety of technologies, we can now already keep reusable materials in the loop,” said Dieter Schmidberger.

“Sustainability is key”

The major milk processors in particular are now relying increasingly on sustainable packaging concepts, which is boosting interest among smaller enterprises as well. The trend was also confirmed by Bernd Mayer, Managing Director of MBM: “There has indeed been a clear increase in inquiries. Moreover, companies now focus more on many aspects concerning sustainability when considering a supplier – and also check them. We are therefore constantly optimizing our machine concepts in terms of energy efficiency, resource conservation and, last but not least, packaging quality. After all, it is only a sealed package with a reliable welding seam that protects a product and helps avoid food waste.”

The newly developed SÜDPACK films for cheese maturation, such as the PE-based XVE structure, also meet these sustainability requirements. On the one hand, it was possible to reduce the film thickness from 130 µm to 100 µm, which means a plastic savings of approximately 23 percent. On the other hand, the film is fully recyclable. And this is all without changing the functionalities of the film. The EAVAE structure, which SÜDPACK has further developed, principally aims to reduce the use of plastic. By modifying



Ingredients from bioconversion

Purecircle grows European stevia offering

NEWS



The EU Commission has published specifications authorising PureCircle by Ingredion’s range of stevia glycosides produced via bioconversion. As a result, PureCircle will be able to offer three ingredients from bioconversion – Reb D, Reb M and Reb AM – as well as its broad portfolio of stevia sweeteners and flavour modifiers from stevia leaf extract to food and beverage manufacturers across the European Union.

As stevia matures from seedling to full-grown plant, various stevia ingredients are formed. By adding enzymes to purified stevia leaf extract (Reb A), the maturation of Reb M is completed, just as the leaf does naturally. PureCircle’s bioconversion process mirrors the plant’s natural ingredient production process. This produces a non-GM stevia leaf ingredient with high sweetness quality, clean taste and none of the calories.

Stevia matures from seedling to full-grown plant (photo: Ingredion)

the formulation, it was possible to reduce the use of raw materials by 20 percent. Other types of film in the portfolio are also continuously developed. And the focus the whole time is on not changing the barrier properties, maturation results or technical suitability for the packaging process.

Packaging machines must be sustainable as well

The VSM machines have also been clearly designed to save energy during the entire packaging process: innovative, energy-efficient servomotors reduce the use of compressed air. Impulse welding makes continuously heated welding bars or plates unnecessary, which also reduces energy consumption. And thanks to the atmospheric vacuum system, smaller vacuum pumps can be installed while maintaining optimal packaging quality and achieving additional energy savings. Furthermore, VSM systems do not require any energy-intensive shrink or drying tunnels.

The machines also impress with their high vacuum quality and reliable, guaranteed wrinkle-free welding seams. This ensures that the package, even with moist or sensitive film, remains securely and tightly sealed. "This means we are not only able to contribute to an extended shelf life, which means less food waste is caused by premature spoilage – but also to savings in packaging material," commented Bernd Mayer.

The high-quality engineering and fabrication of the machines ultimately lead to a long service life. Many parts are made by the company itself, which improves the carbon footprint on a sustained basis. Thanks to their quick start feature, the machines can be used immediately and do not require any long, energy-intensive warm-up times. Moreover, consistent form retention during maturation (sharp corners for block goods) clearly contributes to optimal product processing. When the cheese blocks are sliced after maturation, there are no offcuts. Customers are able to slice up to three percent more of their goods.

The fact that efficiency and ease of use are not neglected despite the added sustainability is demonstrated by the latest machine developments, such as the VSM S-Line. The fully automated vacuum packaging machine with the tried and tested VSM system creates bags on its own by welding and cutting the film from the film tube during the packaging process before the cheese is bagged, evacuated and welded. "We offer a highly efficient all-in-one solution with bag production, bagging and a vacuum station that is distinguished by a high level of process reliability," explained Bernd Mayer.

The VSM5005-S with a film tube was presented by MBM for the first time during the open house that was held in late March in Augsburg. Renowned European dairy companies were able to experience live at the site in Augsburg that "perfect packaging results can only be ensured when high-quality packaging material is combined with mature technology," summarized Dieter Schmidberger and Bernd Mayer.



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*Periandros Garakis,
Managing Director Kremel S.A.*

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Modern label application with Gernep labellers



(photo: Zum Dorfkrog)

Quality as a way of life – the company Zum Dorfkrog from Neu Wulmstorf, Germany, works according to this philosophy on a daily basis. This brand became a household name almost 20 years ago with its "Sylter Salatfrische" salad dressing. Initially still produced in their own restaurant kitchen, the chef and proprietor of the restaurant, Thomas Hauschild, soon moved the manufacturing process to a modern production plant in the neighbouring area. Nowadays, Zum Dorfkrog not only manufactures a number of salad dressings, it also produces a range of desserts and sauces. It's trademark? Green and white labels.

To ensure that the labels continued to take centre stage, the need arose to update the machinery after almost two decades of intensive production. "Due to the fact that we have our own

agriculture, we also have our product quality in our own hands. To be able to offer the retail customer a perfect dessert on both a taste and visual level, we wanted to have a competent partner to support us when it came to our product packaging," Thomas Kazmierczak, the Deputy Production Manager explained. Zum Dorfkrog found just the right partner in the Bavarian labelling manufacturer Gernep. Gernep was a company Zum Dorfkrog was already familiar with. The food production company had already been labelling with Gernep equipment for ten years and was very happy with its machine technology and service. However today's demands on the labelling process cannot be compared to those of what used to be a small company and limited product range. Thus, both companies worked in close collaboration to develop a highly modern labeller that could best meet Zum Dorfkrog's needs.



Zum Dorfkrug dairy has installed a Gernep Soluta 9-1080 7SK SD labeller with seven self-adhesive label dispensers and a nominal speed of 6,000 containers per hour (photo: Gernep)

The objective was clear – the new labeller was to mainly handle pudding products and dessert sauces. The products are popular: sales have continually increased in recent years and, as a result, Zum Dorkruf is now also producing seasonal fruit jelly desserts to meet increasing demands. The hallmark of their dessert jars always was, and still remains, the green and white label. Each of the four different container shapes is decorated with three labels, as always: a front, back and lid label with tamper-evident seal. Gernep's solution for this was a Soluta 9-1080 7SK SD with seven self-adhesive label dispensers and a nominal speed of 6,000 containers per hour. The sophisticated machine is equipped with a non-stop function to ensure a smooth production process without long downtimes due to conversions. With the non-stop function,

if a label reel runs empty, a second labelling station is automatically triggered. This is why the labeller is also equipped with seven dispensers: four labelling stations for the front and back labels, and two labelling stations for the U-shaped tamper-evident seal. The seventh labelling station for a folded label is needed for special production units and, as a result, does not have a non-stop function. The decision to use self-adhesive labels was made after careful consideration. For, in line with company philosophy, Zum Dorfkrug products are intended to be used sustainably. On the website, you can find consumer tips and tricks on how to create lanterns, plant pots or vases. Self-adhesive labels are thus the ideal choice as they can be easily removed from the container without leaving any residue.

MULTIVAC New impetus for direct web printing

MULTIVAC Marking & Inspection has developed the DP 245, a new direct web printer for the X-line series of traysealers. The special feature: Although the high-performance model operates at a fixed working height, it automatically adjusts to possible differences in the height of finished packs.

The printing position on the pack can be easily and conveniently adjusted using handwheels, so that batch changes require only minimal downtime.

Variable data, such as the best-before date or a batch number, is printed with the MULTIVAC TIJ 10 using the thermal inkjet process. Printing heights of up to 12.7 mm can be achieved with one printing head, and even printing heights of up to 25.4 mm can be achieved by using a second printing head. The printer is fully integrated into the operating terminal of the traysealer. DP 245 is also available with IP65 protection.



The DP 24 is, a new direct web printer for the X-line series of traysealers (photo: MULTIVAC)

Clamping starwheels ensure a further increase in efficiency as they hold the containers in place throughout the entire labelling process (photo: Gernep)



Just before the containers leave the machine, three sensors check if each individual container has the correct number of labels (photo: Gernep)

Relations Officer, with conviction. Consequently, a great deal of technology was integrated in order to guarantee precise label application.

Just before the containers leave the machine, three sensors check if each individual container has the correct number of labels. Contrast sensors for glass containers check if the container is transparent, and can therefore detect if a label is missing. Through an integrated rejection system at the end of the labeller, the faulty container is automatically rejected to ensure that it does not end up on the supermarket shelves. But there is no need to worry as this does not mean that the dessert is subsequently discarded. The labels are simply removed and the container gets another chance to shine with a perfectly positioned label.

Efficient production with modern technology

The contract presented Gernep with a real challenge. Zum Dorfrug's highly mechanized production site required a similarly modern labeller with its own customised auxiliary units. The integration of the self-adhesive labellers for tamper-evident seals and folded labels required special adjustments to the machine guards in order to

meet the high safety standards. This resulted in a special machine structure that was not at all commonplace for Gernep.

However, for Zum Dorfrug, the label also plays a significant role in the marketing of their products. "The appealing glass packaging with our green and white labels is what gives our products their high-quality character," explained Sarah Lischick, Public

To design the production and type change-over procedures more efficiently, the self-adhesive labellers were not only designed to include a non-stop function. Adjusting motors were also installed. This additional option means that operators can now benefit from a number of advantages, such as faster change-over times, higher reproducibility and the ability to set parameters easily in the system. The method of operation is conceivably simple: each container type is saved in the machine with its own program and can be selected at the touch of a button. The labelling stations are automatically aligned to the saved values, meaning that the operator no longer needs to manually adjust the mechanical settings for the respective container diameter and application height for the individual products on the self-adhesive label dispenser.

Clamping starwheels ensure a further increase in efficiency as they hold the containers in place throughout the entire labelling process. Benefits to you? The operators save time during type change-overs as they can be employed for the flexible change-over of multiple container sizes. However, clamping starwheels are also very important for the application of tamper-evident seals. The container must be held in place and guided precisely in the infeed clamping starwheel. Together with special bottle plates, on which the containers are precision-centred, the seals can be rolled on along the sides without any visible label misalignment. (Photos)

During the machine development, Zum Dorfkrug placed great importance on efficient labelling and included quite a few additional features on the equipment to achieve precisely this. As a result, they should now be in a position to optimally deal with any increase in demand for their products.

Hand in hand to achieve success

The many years of collaboration already enjoyed between Gernep and Zum Dorfkrug also had a positive impact during the commissioning of such a complex machine. For product reasons, there was only a small

time frame available for machine adjustment. However, thanks to the trained service engineers, it was possible to integrate the new labeller in the bottling line in practically no time at all. For Gernep, this was a special project – not only because it is always rewarding to support a family-run company with sustainable products, but also because, from a design viewpoint, this is an exceptional labeller with many techni-

cal highlights. "We are really pleased that Zum Dorfkrug once again put its trust in us to work with them in achieving this extensive project," said Thomas Wieg, the Sales Manager responsible. For this food production company, the commissioning of the new label was one more step to complement the highly modern production site and continue supplying consumers with a product which is perfect in every way.

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Efficient heat: paying less for more steam

How Breitenburger Milchzentrale e. G. saves several hundred thousand euros a year with intelligent energy management and innovative process steam generation

Author: Stephan Müller, Siemens

These days, no one wants or is able to depend solely on fossil fuels. In response, many companies are modernizing their energy supply by relying on new technologies for their heating, cooling, and electricity using different, if possible renewable, energy sources – smart and flexibly controlled, based on price and demand. Breitenburger Milchzentrale e. G. (BMZ) demonstrates how this can be achieved with a comprehensive energy concept. Thanks to an efficient hybrid boiler for its process steam and with the help of a clever load management system, the dairy plant in northern Germany has saved around 300,000 euros in one year, partly by avoiding so-called electricity load peaks. The company's CO₂ consumption has also been drastically reduced. It's an example of an efficient and climate-friendly energy infrastructure suitable for the entire food industry.

Sustainability is part of BMZ's recipe for success: The company has produced and marketed milk cooperatively in the community of Breitenburg in northern Germany since 1879. In addition to foil-ripened cheese, barrel butter is one of BMZ's specialties. In total, the company processes more than 240 million kilograms of raw milk a year around the clock.

It's an energy-intensive process that depends on steam: To process the fresh milk, production needs steam for the heat exchangers. The taste of the products, their shelf life and quality ultimately depend on a reliable supply of steam to the dairy plant.

Analysis of energy consumption

In the past, the company relied on steam generated in a boiler fueled with natural gas and oil. Yet at some point, the plant's CO₂ emissions were no longer acceptable in Itzehoe. To tackle this problem, an energy data management system from Siemens has been continuously collecting BMZ's consumption data since 2012. In 2019, BMZ again asked Siemens for support. The goal: a comprehensive energy strategy to make production energy-efficient, sustainable, climate-friendly, flexible, and thus future-proof. "The collected data provided the basis for the modern energy concept," explains Stephan Müller in BMZ's production hall. He is an energy engineer and Siemens sales representative for the Itzehoe company.

Saving CO₂ with green power

Energy experts from Siemens proposed that BMZ install a hybrid steam boiler plant, integrated into an automated load management system and operated flexibly and in a climate-friendly manner using natural gas and electricity as energy sources. Using electricity from renewable sources to generate steam in the hybrid steam boiler rather than fossil fuels significantly reduces CO₂ emissions. By changing the source of energy and relying on energy savings from waste heat utilization, BMZ emits around 300 tons less CO₂ annually. Müller is convinced that "hybrid systems and intelligent energy management are the key to future-proof energy supplies in industry. This is especially true for energy-intensive and continuously producing companies such as BMZ, but also for others in the food industry – such as beverage producers."



More than 4,000 blocks of raw cheese come off the production line at Breitenburger Milchzentrale e. G. every day.



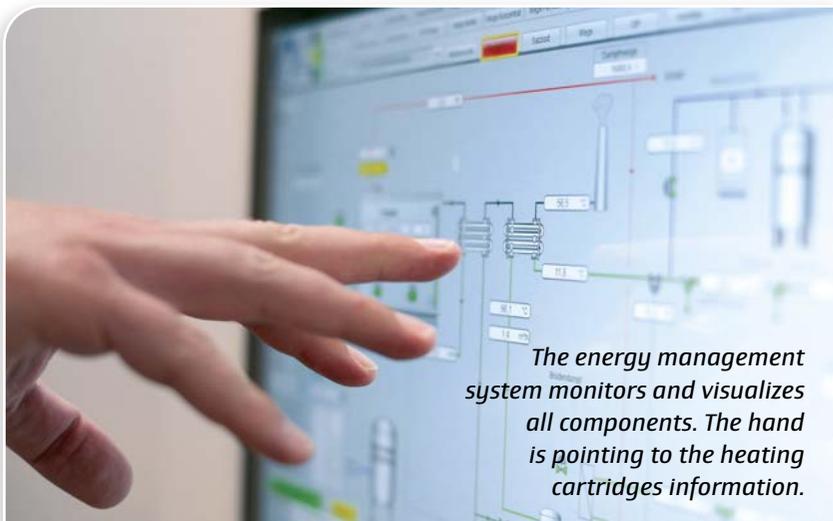
The hybrid boiler system from Siemens in use at Breitenburger Milchzentrale

Avoiding load peaks and saving grid fees

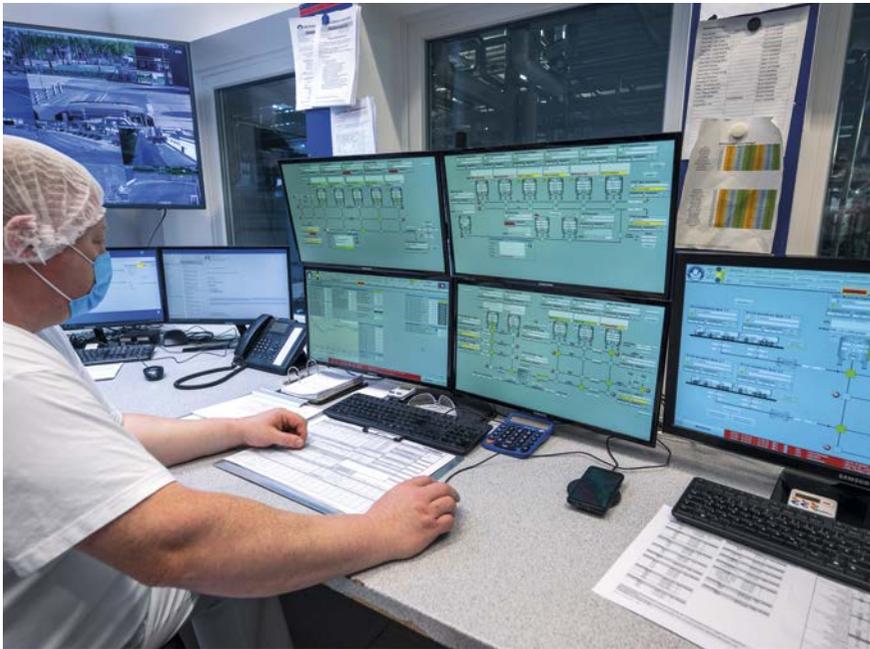
This is how the solution works: The Siemens control system keeps an eye on the plant's overall power consumption and automatically switches from electricity to gas operation or vice versa for the hybrid steam boiler when necessary. This substantially reduces the plant's electricity load peaks (see info box). The modern power-to-heat process smooths the company's electricity load profile so that it meets the criteria for intensive grid use. The highlight: Grid fee refunds of 250,000 euros per year for BMZ.

For a resilient energy supply

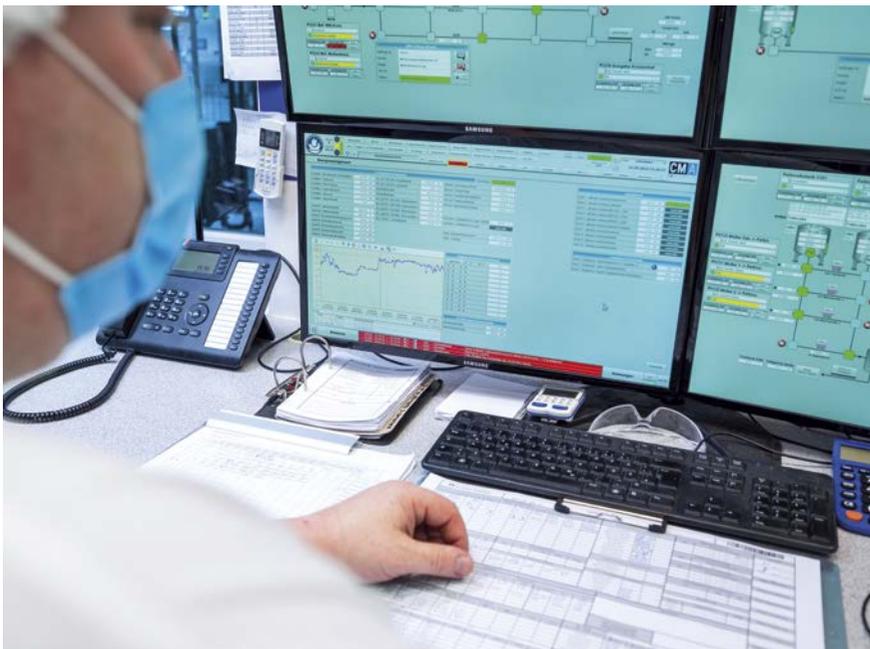
In addition, the new high-efficiency steam boiler plant and its peripherals save around 50,000 euros a year in energy costs, in part due to the boiler's 95-percent efficiency. The



The energy management system monitors and visualizes all components. The hand is pointing to the heating cartridges information.



In the control center, BMZ employees can control production based on load management forecasts and postpone starting production processes or switching on loads.



modernization also enables the use of waste heat from the exhaust gas to preheat the condensate and fresh water. In addition, radiation losses from the boiler are reduced. The new hybrid system also contributes to a more resilient energy supply. Heiko Junge, plant manager at Breitenburger Milchzentrale e. G., explains: "By using electric cartridge heaters for steam generation, we can now switch between two fuels. We don't have to rely solely on natural gas but can also generate steam to some extent with electricity, which brings us a bit closer to the goal of decarbonization."

Subsidies criteria met

BMZ's energy and emission reductions also earned investment subsidies totaling 200,000 euros from the Federal Funding for Energy Efficiency in Business (BAFA Module 4). Holger Schygulla, Managing Director, is convinced of the benefits: "We were able to modernize our old process steam generation and, thanks to the support of our partner Siemens, achieve a very good payback period of less than three years for the total investment. The load management works very well and we are very happy with it."

Why do peak loads drive the price of electricity?

One peculiarity of Germany's power system is important to understand: The country's power grid, already groaning due to fluctuating feed-ins of renewable energies, should not be burdened by further load peaks as far as possible. These can occur, for example, when power-intensive machines start up at the same time. To control this, distribution system operators sometimes charge high network or usage fees for peak consumption. In effect, a company's energy costs don't depend solely on its total electricity consumption, but also on its consumption in a given period of time (electricity

load profile). However, businesses can apply for an individual network fee and have charges reimbursed by the network operator (grid fee refunds) if they meet specific criteria. Put simply: The less the load on the power grid, the greater the reimbursement. It can thus be useful to switch on large electrical consumers with a time delay. Or ensure a consistent level of power consumption (intensive grid use) – in the case of BMZ, supported by intelligent load management. Many German companies already meet these criteria without knowing it.



The peak load management system shows in real time the kilowatt consumption of each boiler system component and visualizes the plant's power load profile. On this basis, electricity consumers in the plant can be switched on or off to avoid load peaks and maintain stable consumption levels – either manually or controlled by the system.



There is a video that shows energy management at Breitenburger Milchzentrale

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NEWS

Sidel will ease the switch to rPET (photo: Sidel)

SIDEL Hub dedicated to PET recycling

Sidel has opened a new hub dedicated to PET recycling. At its unique small-scale PET recycling pilot line in Octeville, France, Sidel will develop its understanding of PET recycling with the aim of giving comprehensive support to the market as it switches to greater use of recycled PET.

Sidel's new line will take raw material from industrial partners such as sorting facilities, recyclers and brand owners. It will then recreate and study all aspects of the process from bales to flakes including pellets ready to be injected into preform, injection and blow moulding.

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Packaging dairy products sustainably

With savings every step of the way

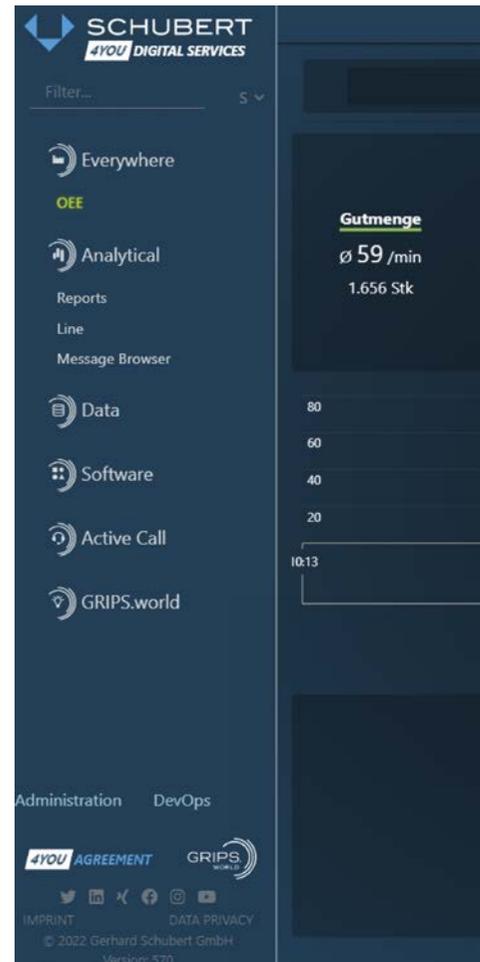
Is sustainability compatible with the goal of achieving maximum savings? Most definitely, according to the Gerhard Schubert packaging machine manufacturer from Crailsheim. The packaging market is facing major challenges: energy issues, finding skilled personnel, raw materials, supply chains – to mention just a few. The dairy sector is also dealing with its own unique requirements: Rapid perishability and low margins are making efficiency a top priority. Find out here how packaging machine manufacturer Schubert is tackling these challenges with its proprietary packaging and digitalisation solutions.

Fully recyclable, biodegradable, made from bio-based raw materials – the sustainability of packaging is being promoted with many different and at times confusing terms. A blindly holistic approach can quickly give way to pure ‘actionism’ – where good is often nothing more than well-intentioned. It is easy to lose sight of the fact that not only packaging, but also efficient processes and avoiding rejects make a significant contribution to sustainability. Unfortunately, this reality is more difficult to market and stands out less on the supermarket shelf. It is, however, indispensable to successful business.

Success through efficiency

Packaging large quantities quickly and cost-effectively, working in limited spaces and under strict hygienic conditions, ensuring a high degree of flexibility, complying with specific shelf dimensions and legal requirements – when it comes to packaging dairy products, these requirements only represent the tip of the iceberg. It is more important than ever to have a clear strategy for managing complex processes. And this is precisely where Schubert comes into its own. Its state-of-the-art case packers and packaging lines can be perfectly integrated into existing processes, while process control and monitoring via advanced technology and robotics ensure maximum flexibility and minimum waste – even with rapid assortment

With its Digital CARE Services, Schubert provides support in analysis, evaluation and troubleshooting to ensure optimum machine performance and availability. (photo: Gerhard Schubert GmbH)



and packaging changes. The use of cardboard and paper as the materials of choice for secondary and tertiary packaging enables solutions that can be as environmentally friendly and sustainable as they are cost-effective.

The Yakult success story

The producer of the Yakult probiotic beverage sells its product in packs of 6 or 8 bottles which used to be shrink-wrapped in film. For the European market, a decision was made in favour of a sustainable raw material for secondary packaging. There were also many other requirements for the packaging line: exceptional performance and high product throughput, low space requirements and integration into the existing space as well as into existing processes, flexible format options and quick changeovers, as well as the option of inserting a customer information leaflet into the packs.

By combining several F2 robots, four Transmodul sections and image processing systems, Schubert succeeded in implementing the required high-level performance in a very confined space. The line packs 720 Yakult bottles per minute into cardboard boxes and



Schubert developed an entirely new sales tray for Yakult that does not require shrink film and is optimised for automated packaging processes. (photo: Gerhard Schubert GmbH)

then into tertiary packaging – in a single operation and without interruption. Thanks to the line's high flexibility, it is possible to switch between boxes of 6 and 8 quickly and easily. Optionally, the robots can also insert leaflets into the outer packaging entirely automatically. The solution's specially developed packaging geometry minimises the use of adhesives.

Digitalisation solutions for the packaging process

Industry 4.0 is also key when it comes to sustainable packaging: Fully digitalised packaging solutions can help increase efficiencies in all areas. Modern production systems generate vast amounts of data which can be quickly exploited with the right expertise and technology. Transparent machines provide indicators for optimising existing processes and enable predictive maintenance. Unplanned downtimes and the waste of perishable products can be reduced to a minimum.

To achieve this, however, manufacturers need to understand exactly how to select, process and use the right information sourced from the multitude of available raw data. Data is fundamental to optimisation, but it takes meaningful evaluation to



The case packers and packing lines from Schubert can be perfectly integrated into existing processes, as shown here in the Jermi cheese manufacturer's facilities. (photo: Gerhard Schubert GmbH)



achieve the desired results – for example, more efficiency, quality and sustainability. Making profitable use of digitalisation solutions and all the available data is not as straightforward as it may seem. Having access to an experienced team of experts who not only bring proven tools to the table, but also many new approaches and ideas, is indispensable. With its Digital CARE Services, Schubert supports the analysis, evaluation and troubleshooting required to ensure optimum machine performance and availability.

Another advantage of digitalisation is the high degree of flexibility it enables. Picking tasks, for instance, can be fully automated with the help of state-of-the-art camera technology, robotics and smart algorithms. The ever-changing combinations of products of different versions in secondary and tertiary packaging, for example, can be integrated into the actual process with Schubert solutions. mixed programming is easily handled directly via the control panel, with self-explanatory symbols and colour codes. This virtually eliminates errors, reduces rejects and rework to almost zero, and also lightens the load for hard-to-find skilled personnel.

The Heinrichsthaler success story

The long-established Heinrichsthaler dairy from Saxony is one of the leading manufacturers of cheese specialities, including oven-ready cheese and Grilltaler barbecue rounds. In the secondary packaging of the barbecue rounds, the sleeves for wrapping the thin, soft thermoformed trays were often incorrectly applied using conventional, linear packaging technology. Rejects, reworking and losses throughout the process were inevitable. The search was on for a compact, efficient and precise cartoner.

Here too, Schubert was able to quickly develop and implement an ideal solution: Decoupling the individual packaging steps now makes the line independent and

With the help of special robot technology from Schubert, Grilltaler barbecue cheese rounds packaged in soft, thin thermoformed trays at Heinrichsthaler are efficiently and accurately surrounded with a cardboard sleeve. (photo: Gerhard Schubert GmbH)

yet perfectly integrated into the specific process cycle. This saves space while ensuring maximum process reliability. With the help of defined breaking edges on the cardboard boxes and a format tool modelled on the human hand, the Grilltaler barbecue rounds are now efficiently and accurately packed into a cardboard sleeve. Thanks to the line's outstanding flexibility, new formats can also be processed precisely and flawlessly in the future.

Digitalisation and modern robot technology not only make Schubert's packaging machines efficient and powerful, they also ensure a future-proof investment and a significant contribution to sustainability on many different levels.

100% compatible with CEFLEX

Krehalon offers CE materials for shrink wrapping

Krehalon CE materials consist of polyolefins and EVOH (photo: Krehalon)



With its CE-materials, Krehalon is fully prepared for the circular economy. CE stands for Circular Economy and Krehalon CE-materials are developed according to CEFLEX* guidelines.

"PVC and derivatives like PVDC are cheap, but harmful for the recycling process," explains Werner Rist, Sales Manager DACH at Krehalon and, as dairy and cheese expert, responsible for all development projects worldwide for cheese packaging. "And when these packaging materials go into thermal recycling, they produce toxins that have to be filtered out at great expense." In fact, legislative initiatives are underway in the EU as well as internationally that will ban PVDC & Co. In Australia, implementation starts as early as 2023, in the EU things are still open, but a similar step is expected for 2025 - 2030.

The Krehalon CE materials consist of Polyolefins and EVOH. The latter material makes up less than 5%, easily recyclable polyolefins contribute over 90% to the packaging films. CE materials are produced

as shrink bags, Formshrink® films for thermoforming and Flovac™ films. Compared to conventional packaging with thicknesses of up to 350 µm, CE materials (80 - 90 µm) are characterised by a much thinner film thickness, with savings of up to 80% in some cases. The films can be even thinner, as Mr Rist reports, thicknesses of only 40 µm have already been successfully tested.

The barrier against oxygen is achieved by an EVOH layer. The CE materials are multilayered. This requires a relatively complex manufacturing process, which reflects additional cost compared to non-recyclable films. The puncture resistance of the films is excellent despite their low thickness; only products with very sharp and hard edges such as Parmigiano require a slightly thicker film.

As far as appearance is concerned, CE films have a somewhat matt surface, but are excellent for printing. Their shrinkability is superior in comparison, resulting in an attractive product presentation. The high formability of the material contributes significantly to this.

Krehalon

Krehalon is a manufacturer and distributor of high-quality, PVDC-free, flexible barrier shrink films and pouches. The products are specifically designed for cheese. Recently, Krehalon has expanded its portfolio to include solutions for alternative products. In Germany, Krehalon is one of the top 3 suppliers of flexible packaging.

Solutions are offered for all relevant applications of heat shrinkable packaging:

- » SBR shrink bag replacement is a portfolio for automated processes
- » Formshrink® stands for thermoforming films
- » Flovac™ – films are heat shrinkable films to run on Flowrap lines
- » ML40 is the name given to multilayer shrink bags available in various barrier thicknesses.

Customers have the option of printing individual designs directly onto Krehalon films, as an in-house 10-colour flexo printer is available. Krehalon also handles pre-press in-house.

* The multinational Circular Economy for Flexible Packaging (CEFLEX) initiative is supported by around 180 companies, associations and organisations from the flexible packaging sector and aims to create a 100% circular economy for flexible packaging in Europe by 2025.

Exoskeletons at Bergader

"Almost like Ironman"

They look futuristic, like in an action film: Exoskeletons are lifting aids worn on the body that support the musculoskeletal system when moving loads. South German Bergader cheese dairy has been providing its employees with exoskeletons since December 2021. The response has been extremely positive.

In a cheese dairy, work is physically hard. During the actual cheese production and later in the packaging. Many hundreds of times per shift, pallets or hordes of cheese have to be filled, lifted and carried there, mostly by hand. "Wherever we cannot automate processes or facilitate them with technical lifting aids, lifting and carrying is still manual work and correspondingly strenuous," explains plant manager Heinrich Wolfertstetter. "And that's where exoskeletons really are a great relief," continues Simon Wildner. He is responsible for the "cheese dairy 1" area and is considered the "exo-man" of the first hour at Bergader. As a supervisor, he wanted to know exactly how these lifting aids, which look a bit like a cross between a climbing harness and a back protector, work and tested the first models himself. "It almost makes you feel like Ironman's little brother," he says with a smile. "Our owner and managing director Felix Kress came up with the idea of trying out exoskeletons in 2021, and we looked at various models from different manufacturers and tested them for a while in a pilot group. The feedback from the employees was very good. In the meantime, a total of eleven of these body-own lifting aids are in use at our company: in the cheese dairy and in packaging. The wearers are more than satisfied," says Sabine Ortbauer, health manager at Bergader.

One of them is Manuel Kroiß, who has been working in packaging at Bergader for ten years and was hooked on his personal lifting aid right from the start. "I think the thing is great," he says. "I used to be totally exhausted in the evening and often had back pain. That's gotten a lot better since I started wearing my exoskeleton." And he does that consistently, usually for

eight hours throughout the shift. "Manuel also goes to the canteen with it," smiles Sabine Ortbauer. The passive exoskeletons used can be unbuckled very quickly in the chest area, one click and they sit so loosely that you can move comfortably with them and also sit down.

Making the right choice

Basically, there are two types of exoskeletons: passive and active. In the passive versions, for example, spring or rubber systems store the body's own forces and return them during the lifting process. They have an assisting effect, for example during activities in ergonomically unfavourable postures – which at Bergader mainly include palletising or moving the pieces of cheese during ripening. Active exoskeletons, on the other hand, function via force-generating components such as electric motors or pneumatic drives. "Whether and which exoskeleton is suitable for a workplace always depends on the general conditions there. In the Bergader case, active exoskeletons were not recommended because of the humidity, hygiene requirements and workplace conditions. They are also much heavier and many times more expensive than passive models," explains Stephan Huis, ergonomics expert at the BGN. He welcomes the use of these body-mounted lifting aids at Bergader, but warns in general not to regard them as a panacea. "In occupational safety, the TOP principle must always apply. Exoskeletons are personal aids and are suitable as a supplementary measure, especially at workplaces where all technical and organisational possibilities have been exhausted. Likewise, they can be used as a transitional solution until a technical solution is possible at the affected workplace, and also ensure improved posture at work," says Stephan Huis.





Manuel Kroiß has been working in packaging for ten years. He wears his exoskeleton for eight hours and is more than happy with it (photos: BGN)

All in all, it is very important to him to thoroughly prepare the use of exoskeletons in companies. "The support provided by exoskeletons is limited to certain movements and postures. If you don't have a close eye on all activities, they can even have a counterproductive effect in the worst case." For the ergonomics expert, exoskeletons therefore naturally belong in the risk assessment of the respective workplace. In addition, their effectiveness must be checked again and again, even in the long term.

Just one piece of the puzzle

"The use of our exoskeletons is, of course, only one building block, a piece of the puzzle, so to speak, on the way to ergonomically optimised workplaces. Wherever possible, we first of all optimise the work processes and use technical lifting aids such as height-adjustable lifting tables, ride-on lift trucks, high-lift trucks, presenters and height-adjustable conveyor belts," explains plant manager Wolfertstetter. "The exoskeletons are a long-term investment in the health of our employees and we want to increase their number. Of course, the colleagues who are still young today benefit most and in the long term from this physical relief." Health manager Sabine Ortbauer adds: "We really take the health of our employees very seriously and want everyone to be able to retire healthy and fit. This is a matter close to our hearts and is anchored in the management."

For this reason, the company has been offering its staff very different health-promoting programmes since 2012. "These include flexible working time models, job sharing, flexible shift patterns and the company's own kindergarten," Ortbauer lists. She is particularly proud of the company's own health lounge with six vibration plates, fascia rollers, gymnastics mats and drinking water dispensers, which everyone can use, and the

possibility for all employees to get an appointment with a partner physiotherapist within a short time. "Normally you have to wait a long time for that. With us, it's quick and the first complaints are treated promptly. This helps to prevent serious and long-lasting complaints."

Manuel Kroiß also takes advantage of some of these offers and could not have imagined going home in the evening without back pain and muscle tension a few years ago. "I can only say: without my exoskeleton, my back would probably ache a lot more often. So I'm really grateful to my employer for making this possible." He smiles, turns around and goes back to his palletising workstation, where many hundreds of boxes full of cheese still need to be moved by the end of the shift.



Managing director and owner Felix Kress and Maximilian Datz, head of packaging, show how it's done: Those who want to can loosen their muscles on a vibration plate during working hours (photo: BGN)



Bergader

Pleased with the positive feedback from the workforce: Head of Cheese Factory 1 Simon Wildner, Plant Manager Heinrich Wolfertstetter, Health Manager Sabine Ortbauer and BGN Supervisor Christine Lorang (from left to right). (photo: BGN)

With an annual turnover of about €250 million, Bergader is the German market leader in the blue cheese category. 38,000 tons of cheese are produced each year, including 19,000 tons of soft cheese, 10,000 tons of blue cheese and 8,500 tons of semi-hard cheese. 750 employees work at two production sites in Germany and one distribution site in Italy. 325 million kg of milk are processed.

ALFA LAVAL

Application & Innovation Centre boosts productivity

Faced with a tight construction time frame, a leading soft drink manufacturer asked Alfa Laval to select equipment for a new mixing processing line. After analyzing the shear-sensitive syrup formulation and testing mixing equipment under actual operating conditions, our experts found the Alfa Laval Rotary Jet Mixer delivered superior performance compared with conventional agitators.

Installing the right equipment ensures more uptime, higher productivity and yields, and sustainable cost savings. The Application & Innovation Centre determined the Rotary Jet Mixer reduced mixing time from 20 minutes using their conventional agitators to just two minutes while ensuring the formulation's structural integrity.



Alfa Laval's Application & Innovation Centre helps to increase productivity (photo: Alfa Laval)

NEWS

FMCG Gurus

Top Ten Trends in 2023

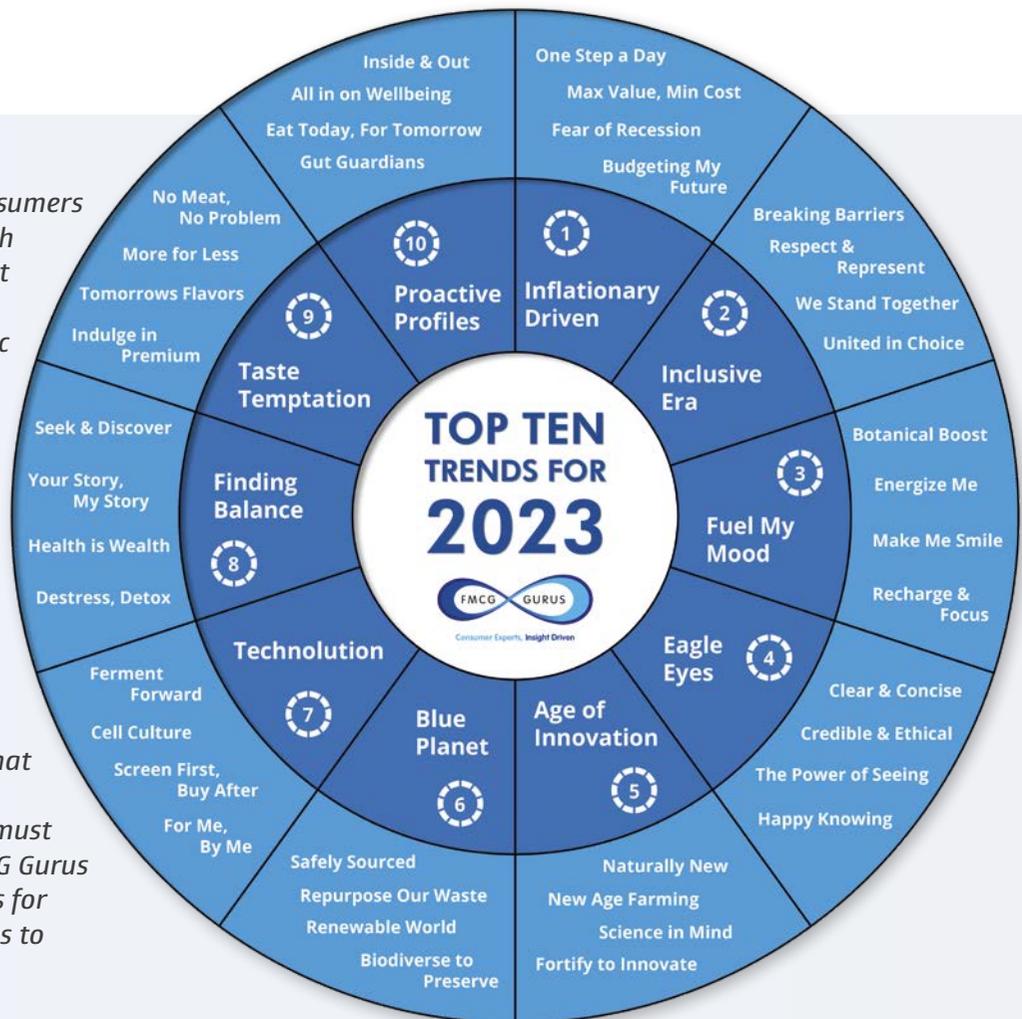


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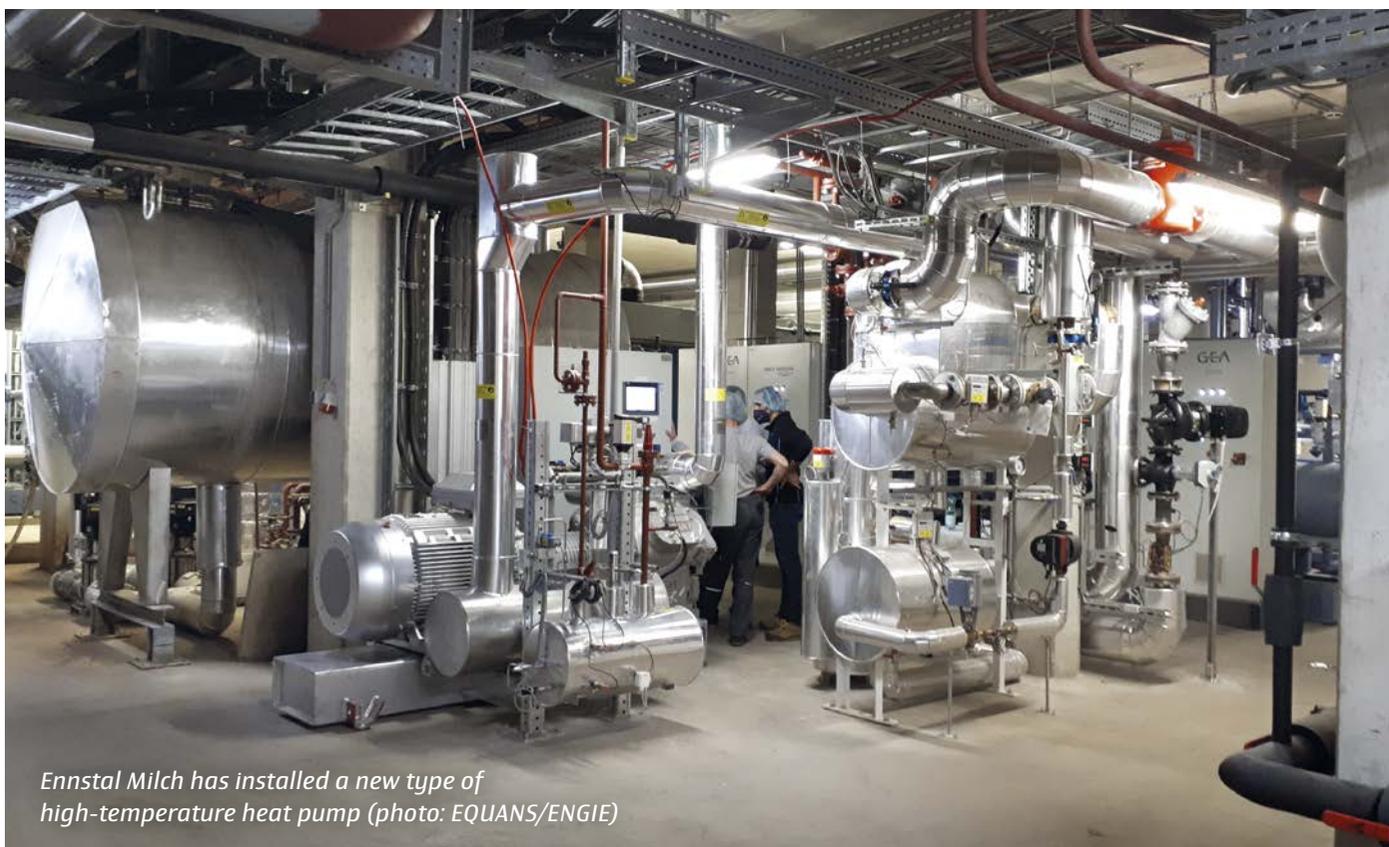
Consumer Experts, Insight Driven

For the third year in a row, consumers will enter the New Year in a high state of uncertainty. This time it is not worry over the course of the pandemic, but the economic downturn and rising cost of living that people are facing. This result in consumers wanting to continue to seek out products that satisfy various needs, while at the same time, engaging in recessionary shopping habits and being more attentive to value. The key implication of this is that consumers will be reluctant to give up products that they deem essential and small luxuries but at the same time, must be more mindful of spend. FMCG Gurus has launched its Top Ten Trends for 2023, highlighting opportunities to enhance perceptions of value.



Ennstal Milk

Saving greenhouse gas emissions



Ennstal Milch has installed a new type of high-temperature heat pump (photo: EQUANS/ENGIE)

Ennstal Milch relies on an innovative high-temperature heat pump technology from Austria. Until now, it was only possible to heat process waste heat up to 80° Celsius. With the new high-temperature heat pump from EQUANS/ENGIE, the temperature of up to 95° Celsius required for certain processes can be achieved. "The UPGRADER 95°, the new product from EQUANS in Lauterach, Vorarlberg, fully met our requirements to reach temperatures of up to 95° Celsius with its slogan 'tailor made heat pump solutions'," confirms Harald Steinlechner, Managing Director of Ennstal Milch.

Savings in energy consumption

Steinlechner continues: "In our company, we reduce emissions by 650,000 kg of CO₂ per year compared to gas firing. The use of the high-temperature heat pump also has a cost-saving effect. We expect the investment to pay for itself in less than five years."

UPGRADER 95°

The UPGRADER 95° is a symbiosis of proven hardware, innovative components, coordinated software and individual integration into existing systems. The overall system beats conventional heat pumps hands down, according to the manufacturer EQUANS. More than 70 years of refrigeration and heating technology know-how have gone into this solution. The following points in particular stand out:

- » Up to 95°C water outlet temperature possible
- » Ammonia (NH₃) as an environmentally friendly (GWP=0) and natural refrigerant, which enables the highest COPs (economic efficiency) on top.
- » For existing NH₃ refrigeration systems, a direct hot gas tap for the Upgrader 95° is possible (add-on module); in this way, good COPs and thus cost advantages can be created for our customers.

Three integration modules are offered for existing plant systems:

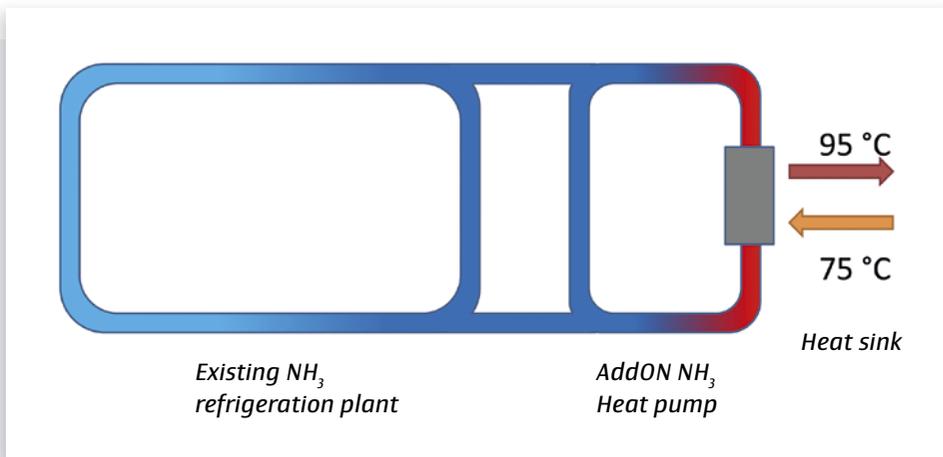


Figure 1:

Add-on means the direct integration of the heat pump into an NH₃ refrigeration system in order to tap the waste heat directly in the refrigeration circuit and to operate a heat pump with high efficiency with little space requirement and low investment costs. The prerequisite for this is an existing refrigeration system with the refrigerant ammonia.

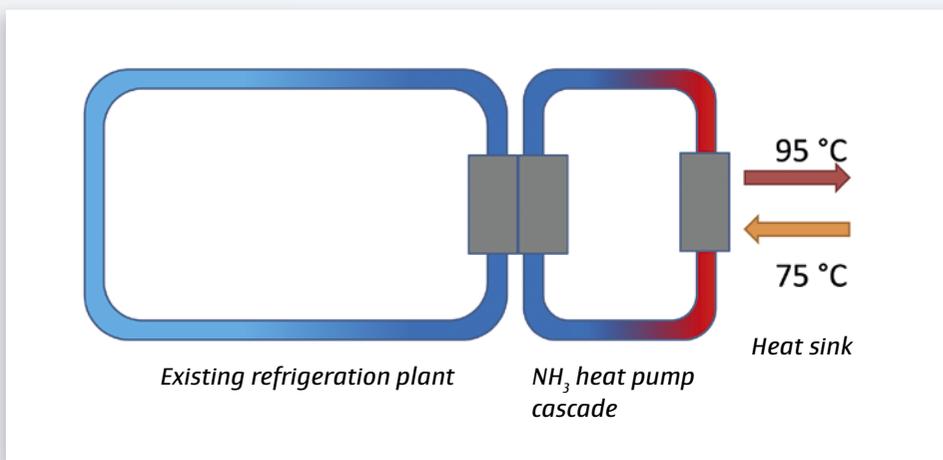


Figure 2:

Cascade offers the possibility of tapping the heat of an existing refrigeration system independently of the existing refrigerant. A separate NH₃ heat pump circuit is set up, which taps the energy of the existing refrigeration system by means of a cascade heat exchanger.

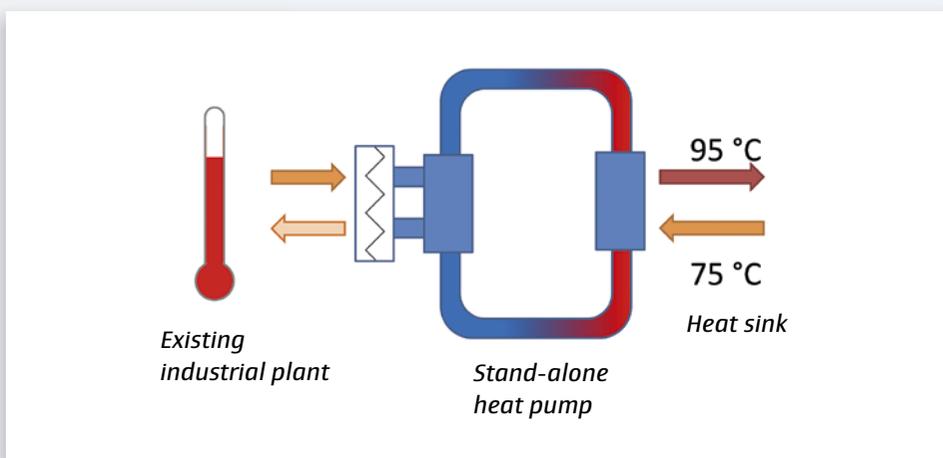


Figure 3:

Stand-alone is used as a separate heat pump wherever waste heat is already available in the form of heat transfer fluid.

Ammonia as refrigerant

Ammonia is an almost ideal refrigerant: it is environmentally friendly, contributes neither to global warming nor damages the ozone layer. Its excellent thermodynamic properties result in particular economic efficiency.

"UPGRADER 95° saves fossil fuels, thus drastically reducing CO₂ emissions, and at the same time reduces costs, which enables

us to secure significant competitive advantages for our customers in the market. All advantages that are not offset by any disadvantages," emphasises Philipp Baumgartner, Managing Director of ENGIE Refrigeration. Baumgartner sees the greatest potential for cost savings and emission reductions of greenhouse gases in industrial companies, especially from the pharmaceutical, beverage and food industries.

A trade fair for everyone

An overview of interpack 2023, 4 – 10 May, Düsseldorf, Germany



Lost in the exhibition halls? Not at interpack. In order to help visitors find everything they are looking for, the fully booked interpack 2023 features a concept for the halls that is based on clear focal points for each industry.

No other industry trade fair can compare when it comes to representing the global market in its entire variety and scope. interpack will again offer the packaging and related process industry the biggest international overview of the market, thereby more than earning its motto “simply unique”. To help visitors not get lost in 18 trade fair halls, the halls feature a custom concept based on the core target groups food, beverages, confectionery and baked goods, pharmaceutical products, cosmetics, non-food and industrial goods.

Around 2,700 companies from around the world will meet in Düsseldorf from 4 -10 May, 2023, to present cutting edge technologies and packaging trends from along the entire value chain, demonstrate chances for growth and respond to the challenges of the industry.

The food sector is among the most favoured target groups of visitors to interpack (photo: Messe Düsseldorf)

Food, beverages, non-food and industrial goods

The food sector is among the most favoured target groups of visitors to interpack, and this shows in the breadth of their presentation. The global demand for packaged foods is increasing. In saturated markets with strong incomes, conscious consumption and consumer behaviour also shifts towards sustainability, regional produce, organic food or fair trade, and this includes packaging. Like the current challenges posed by energy management and conservation of resources, this causes a process of transformation within the sector. A similar observation can be made for beverages and non-food products, which are presented together with the

food sector in halls 5 and 6, as well as in 11 and 14. Around 20 percent of visitors to interpack are especially interested in solutions for industrial goods. These, too, are to be found in the same halls.

Starting in hall 5, there is a focus on the food sector and big names like Multivac Sepp Haggenmüller, Ulma Packaging, Weber Maschinenbau and Fuji Machinery. In hall 6, for example, Fawema, Coesia, Syntegon Technology or Duravant present their innovations in many areas of application for processing & packaging.

Halls 11 and 14, which are ideally suitable for a walk, will host exhibitors like Omori Machinery, Mettler-Toledo (hall 11), Extend Great International and Haver & Boecker (hall 12), KHS, Krones, Aetna Group, Sidel and ProMach (hall 13), as well as Gerhard Schubert Verpackungsmaschinen, Ishida Europe Limited, Loesch-Hastamat and tna solutions (hall 14). In hall 13, there is a special focus on bottling and packaging solutions for the beverages sector.

Packaging materials and packaging

Halls 7 and 7a, 8a, 9 and 10 of interpack are of the highest importance for the sector. This is where visitors can view at least a third of all exhibitors with all their materials and their finished packaging products. This presentation, which is not only for users, of packaging, packaging materials and packaging aids is already the largest packaging trade fair in the world. This also makes interpack unique. Here is where all packaging materials are represented and there is an especially high number of innovations in the field of sustainability and conservation of resources, for example in using new materials, sustainable raw materials, or increasing the amount of recyclates used in packaging.

Exhibitors in this area are numerous and international – among others, you can visit Sappi Europe, Sonoco, Mayr Melnhof Packaging, Berry Global, Schütz GmbH, the S.I.T. Group or Seda International Packaging.

Labelling, marking, finishing

Inform, decorate, customise – packaging carries information. How to implement this for different products and requirements, is presented by the exhibitors in halls 8a and 8b. Here, there are machines for labelling and marking technology, for example at Bluhm Systeme, Langguth, Domino Printing Sciences, Videojet Technologies, Herma or Possehl. This offer is completed by solutions from packaging production and integrated packaging printing. Here you can visit companies like Starlinger, Totani, Fujifilm Europe, the Brückner Group or HP Germany.

Components

“Every part counts” is the motto of the components trade fair, which takes place parallel to interpack as its own event. This is where you find companies offering technology for drives, control units and sensors, products for industrial imaging, handling technology, industrial software and communication as well as comprehensive automation systems for the packaging industry. There

are also machine parts, components and equipment, peripheral devices as well as components and aids for packaging. Among the exhibitors are, e.g., Pilz, Gimatic, Igus, Voestalpine Edelstahl and Mädler. The temporary hall 18, situated between halls 10 and 16, makes the trade fair accessible from a central location, and visitors to interpack have direct access to the components fair and vice-versa.

IFF

CHOOZIT VINTAGE for Consistent Flavors and Textures

IFF has launched CHOOZIT VINTAGE in the U.S. and Canadian markets. CHOOZIT VINTAGE will help cheddar cheese manufacturers overcome undesirable flavor development during aging to streamline cheesemaking processes and achieve the consistent flavors and textures that consumers love.

Aged cheddar cheese production can prove challenging with common issues such as bitterness, gas and crystal formation, color and textural defects can prevent manufacturers from maximizing process efficiency and improvement, cheese yield and whey quality. This makes it difficult to ensure high product standards that meet the expectations of increasingly discerning cheddar cheese consumers. In addition, when manufacturers try to differentiate their products with added functionalities, they face issues with savory flavor profiles and shelf-keeping qualities.

CHOOZIT VINTAGE is part of a high-performing starter culture range featuring seven rotations of blended mesophilic and thermophilic direct-to-vat cultures for producing great-quality, American-style cheddar. It provides robustness against phages for optimal lactic acid bacteria action to meet every cheesemaking need.



CHOOZIT VINTAGE improves cheddar ripening (photo: IFF)

NEWS

Hardware becomes secondary

ProLeiT focuses on system openness in an ,agnostic' approach

ProLeiT has been part of the Schneider Electric group for some time. This has significantly strengthened the position of the automation specialist from Herzogenaurach in Germany. IDM met ProLeiT Managing Director Friedrich Richter and Esin Gül, Global Head of Sales and Marketing, at drinktec in Munich for a background discussion.

IDM: ProLeiT was founded by former Siemens employees at the time and initially focused on the automation of breweries. What does the business model look like today?

Richter: From the beginning, ProLeiT wanted to be independent. Over this period, we worked to have a software compatible with all established platforms such as Siemens, Rockwell Automation and of course Schneider Electric. We are in much closer contact

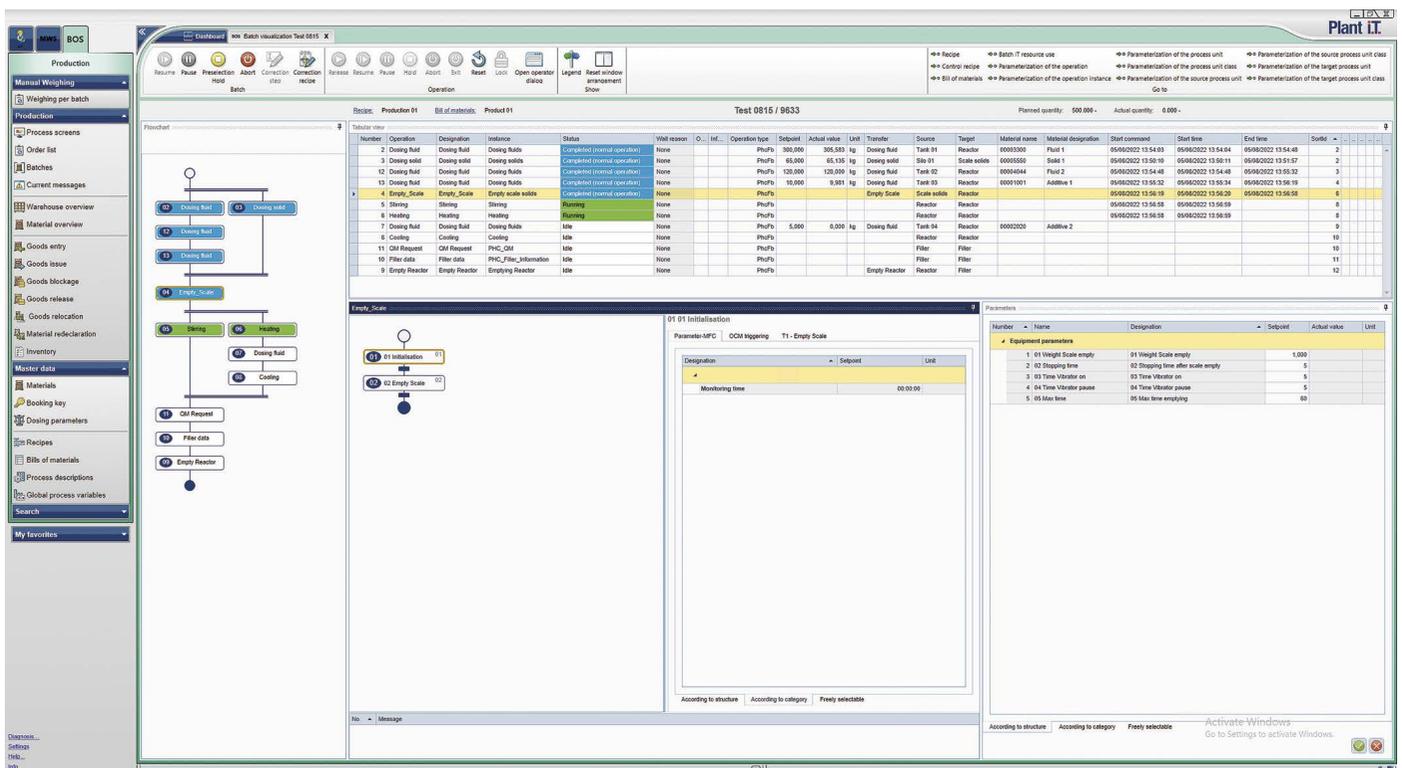
with our customers than the "big players" and have completely re-developed our software. Process Control, MES and more recently Batch management are our core competencies, which gives us a much better entry point, especially in the chemical, pharmaceutical and life science industries.

Gül: Nevertheless, we do not forget our roots. ProLeiT controls the production of 25% of the world's beer production, and the dairy industry is still our second most important customer sector.

IDM: What is new about your batch management?

Richter: We call it Batch Orchestration System, BOS for short. Users no longer have to program, they parameterize today. BOS works with any hardware and offers the customer much more

BOS shows the batch list that needs to be processed (Fig.: ProLeiT)





ProLeiT Managing Director Friedrich Richter and Esin Gül, Global Head of Sales and Marketing: Our Batch Orchestration System works with any hardware (photo: IDM)

flexibility than previous solutions as well as completely new possibilities for optimization. We achieve system independence by inserting an intermediate IT layer between the PLC and the server. The investment pays off for the customer within a maximum of two years.

IDM: Quite a few people say that integration is the motto of this time when it comes to automation solutions. Do you see it the same way?

Richter: On one hand yes, we have to look at the processes from start to finish and ensure even more integration from ERP level to the shop floor closing the IT-OT gap. Especially in line management and material handling, there is still a lot of potential for op-

timization. With the current energy crisis, ProLeiT can help reduce the customers' footprint and advance sustainability. We are driving these developments forward together with Schneider Electric.

Gül: On the other hand, we focus heavily on system openness. Our solutions also work with competitor platforms so that customers are not forced to convert, a concept we share with our parent company. Our open architecture allows us to integrate hardware and software at the customer's site and to dissolve the closed shops that exist there. After all, you have to realise that switching to a new platform is a huge investment, bringing additional downtimes and that needs additional training for the staff. In the meantime, hardware has almost become a secondary matter. Today, automation is a matter of software.

Compensating for food price increases Economical stabilising systems

Quite apart from high inflation and exploding energy prices, the volatile availability and price fluctuations on raw materials markets are a huge challenge for the food industry. New solutions are needed in order to respond to consumers' shrinking budgets. Hydrosol, specialist in stabilising and texturing systems, is working hard to find ways to reduce cost-driving raw materials in stabilising systems, as well as to develop new systems on this basis.

One example is ice cream. Locust bean gum is a familiar ingredient here thanks to its many functional properties. Prices have dropped back down a little bit after a huge jump in the spring, but locust bean gum still costs four times what it did a year or two ago. Other galactomannans like tara gum can often produce the desired properties in ice cream when combined with other ingredients like carrageenan. You need to make adjustments with care, in order to reduce or entirely replace locust bean gums.



New stabilising solutions are needed in order to respond to consumers' shrinking budgets (photo: Hydrosol)

Demand remains strong

Dairy trade volumes are not pressured by record price levels

Driven by lower yields in Europe's main producing countries at the beginning of the year, continued increases in input costs and a growing demand, dairy prices have reached record highs in recent months. In this article, the Amsterdam-based business intelligence company A-INSIGHTS quantifies trends in the dairy sector using global dairy trade data.

Trade prices for dairy ingredients rise steeply, specially for high-fat products

Total dairy trade volume remained relatively stable in the 12-month period ending August 2022 compared to the same period a year earlier (-0.9%), but there is a clear shift in volume between product categories. Trade volumes for cheese, consumer dairy, and butter and milk fats are up 2-4%, while trade volumes for cream and milk powder are down 2.7% and 6.8%, respectively. The sharp decline in trade volumes for milk powder is mainly caused by lower volumes of whole milk powders, where an interaction with butter is evident: as a result of the 40% price increase of butter, producers increased the share of raw milk used for butter production.

The average trade price for the 12-month period ending in August increased by 22% compared with the same period a year prior, but when August 2022 is compared with August 2021, the average price increase is 35%. This indicates continued price increases, especially for high-fat dairy ingredients such as butter and cream, where trade prices rose 61% and 45% in August, respectively.

China's lockdown induced economic slowdown drives 25% decrease of dairy imports

After dairy product imports rose significantly between September 2020 and August 2021, China's strict COVID policy and the subsequent economic slowdown caused the country's dairy imports to drop 25% in volume. Roughly half of China's dairy imports are milk powders, whose imports fell by 29%. Despite the sharp drop in volume, the value of dairy exports to China remained relatively stable (-3%) due to increased trade prices. Besides the large intra-community trade of Germany and the Netherlands, the stable imports of the UK stand out. After the Brexit, the country has maintained its dairy imports and is importing significant quantities of consumer dairy from Ireland and other European suppliers.



Figure 1. Year-over-year volume and price development per product category, 12 months ending in August

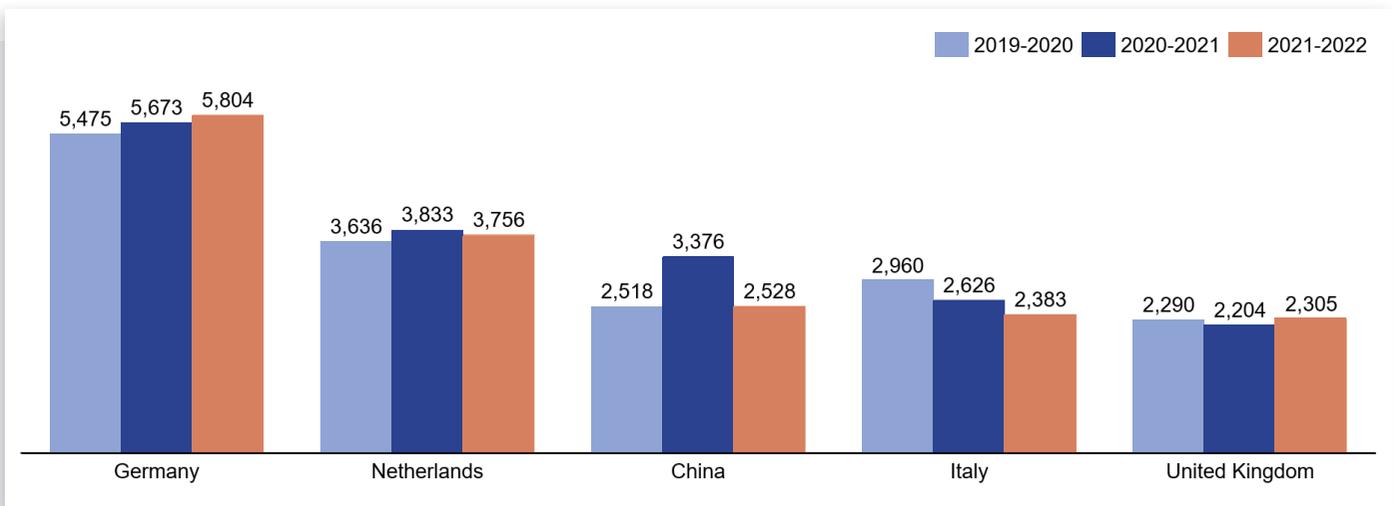


Figure 2. Top 5 importers, trade volume in thousand tonnes, rolling 12 month periods ending in August

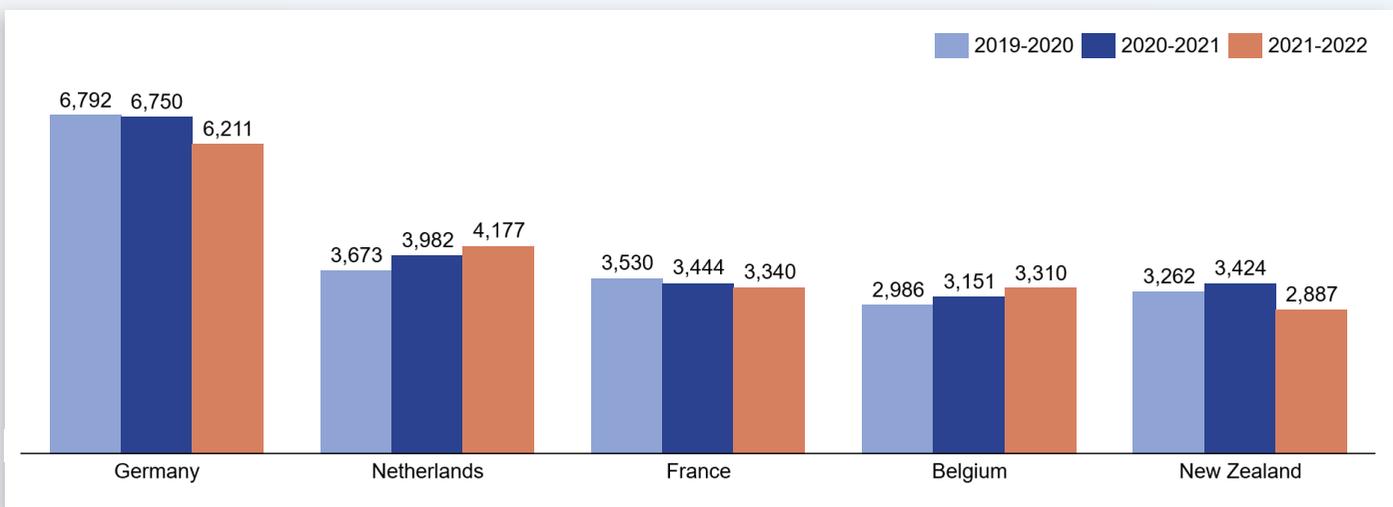


Figure 3. Top 5 exporters, trade volume in thousand tonnes, rolling 12 month periods ending in August

Germany and New Zealand hurt most by reduced imports from China, Netherlands continues to increase dairy exports

The share of the five largest exporters of dairy products in total dairy trade fell from 51.2% to 49.6%, mainly due to reduced exports from Germany and New Zealand. Both countries suffer from reduced demand from China, in the case of Germany mainly in the form of cream, for New Zealand in almost all product categories, but especially in milk powders. At the same time, the Netherlands and Belgium are managing to continue their positive volume trends, with the Netherlands increasing volume in all major product categories and Belgium increasing its exports of cream to Germany and the Netherlands.

Despite volume pressures for Germany and New Zealand, the value of exports is increasing for all countries as a result of strong price increases in recent months. This increase is greatest for the Netherlands, which combines a 4.6% increase in volume with a 19.7% increase in the average trading price, increasing the value

of its dairy exports by 25.6%. Both Germany (+19.9%) and New Zealand (+12.1%) are unable to achieve a similar increase in value due to lower export volumes.

Prices to remain at high levels, fuelled by energy prices and regulatory pressure

Dairy prices are unlikely to return to pre-pandemic levels soon: energy prices remain record high, new EU fertilizer regulations and ongoing supply chain problems mean that costs remain high for both farmers and processors. This is reflected in dairy prices, which have continued to rise in key EU producer countries. Milk prices in New Zealand have fallen slightly in recent months, but remain well above previous years' levels.

The EU expects its Green Deal policy to reduce raw milk production in the EU by 10%. If the price increase after a 1-2% drop in production in the first half of 2022 is any indication, it seems more likely that the market has to get used to the current price level rather than wait for a price normalization.

There is still a lot to do

Three questions to the Parmigiano Reggiano producers' association



(photo: Consorzio del Formaggio Parmigiano Reggiano)

Riccardo Deserti, Consorzio del Formaggio Parmigiano Reggiano: Even in the long term, higher production costs should not be passed on to consumers (photo: Consorzio del Formaggio Parmigiano Reggiano)



Parmigiano Reggiano is often called the king of cheeses. But even this Italian speciality cannot escape the general development of the economy, the business cycle and the energy supply situation. IDM spoke to Riccardo Deserti, General Director of the Consorzio del Formaggio Parmigiano Reggiano since 2012.

IDM: How badly has Parmigiano Reggiano production been affected by the drought in northern Italy? How much less cheese was produced in 2022?

Deserti: The Parmigiano Reggiano Consortium includes all recognised producers within the protected area of origin. The cheese dairies have to meet strict requirements for the production of our cheese with protected designation of origin. These include the exclusive use of milk from farms located in the defined area. The drought can be a problem especially for these farms that supply milk to the cheese dairies.

The drought indirectly affects the production process of Parmigiano Reggiano, but does not cause any non-solvable problems. We would like to emphasise that the production of Parmigiano Reggiano is currently not at risk.

Our specifications give clear rules to the dairy farmers: The cattle's diet is based exclusively on vegetable feeds containing cereals such as barley, wheat and maize. The feed is mostly dried and already stored in the barn.

Currently, there is no direct risk for cheese production, as the dairies already store the dried fodder of the cattle and thus ensure continued supply. If the drought continues, it is possible

that the lack of water will affect the feed supply. In the long run, the drought and higher energy costs can lead to an increase in production costs.

IDM: We are seeing food price inflation all over the world, including Italy. How does the Consorzio deal with cost/price increases? Will sales not decrease when people save and give up high-priced products?

Deserti: The Consorzio is not currently experiencing any direct product cost increases, with the exception of investments in best practices and in the promotion of renewable energy sources in the production process, such as the use of photovoltaics or the use of biogas.

At the moment, no increase in average wholesale prices can be seen. And even in the long term, higher production costs are not to be passed on to consumers.

IDM: How will the export strategy for Parmigiano Reggiano be adapted to the new circumstances? Keywords: weakness of the euro, logistical bottlenecks, inflation.

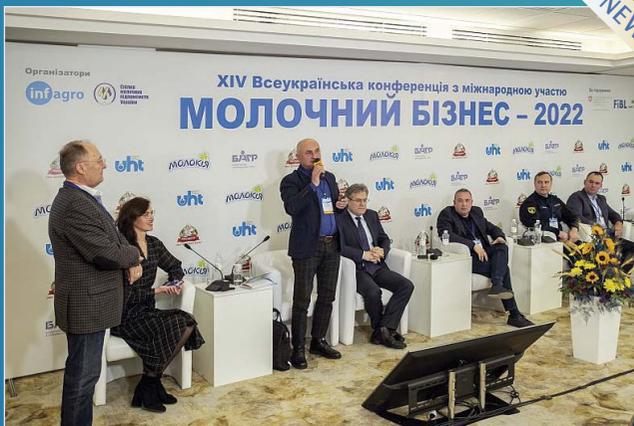
Deserti: We at the Parmigiano Reggiano Consortium see no reason for concern at the moment. Nevertheless, we are constantly working on a medium- to long-term strategy and are not only focusing on markets where exports already play an important role. We are also paying special attention to the countries where there is still a lot to do: These include Australia, Central and South America and other regions of the world.

UKRAINE

DAIRY BUSINESS 2022 congress

For the first time in 14 years of holding the conference, the Ukrainian congress event DAIRY BUSINESS was held during a war on 1 December 2022. During the conference sessions delegates have mentioned the losses in every session – the losses of milk producers, who were directly affected by shelling and are still in the occupied territory, and the losses of milk processors – there became 38 fewer dairies in Ukraine...

Vadym Chagarovsky, Head of the Dairy Union of Ukraine, said that after the end of the war, it will be necessary to focus on the growth of livestock and volume of milk production, which allow engaging the part of the processing capacities which are currently in reserve mode. At the same time, he emphasized that modernization of dairy enterprises is needed. Chagarovsky also emphasized the need to protect the domestic market, change marketing strategies and use membrane technologies. Speaking on dairy exports, on behalf of Ukrainian dairy he expressed gratitude for the timely decision of the European Union to



DAIRY BUSINESS, a congress during war time in Kyiv (photo: Antonenko)

cancel tariffs and duties on import of Ukrainian goods to EU countries. This, in fact, saved the Ukrainian dairy industry, where due to hostilities and the migration of several million consumers there appeared a surplus of raw milk and, accordingly, the threat of dairy livestock destruction.

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Getting ahead in the low-sugar rush



Author: Delphine Forejt, Category Development Manager for Dairy at Tate & Lyle Europe, looks at the challenges the dairy industry faces in meeting consumer demand for low and no sugar products



Many people are taking steps to reduce their sugar intake; for example in the UK research shows that 57% of adults are making this change¹. This is impacting their buying habits when it comes to dairy products.

According to our recent European Dairy Consumption Trends report, one-third of people aged between 18 and 35 in Europe expressed concerns about sugar content in dairy products². The report also revealed that 34% of consumers aged between 18 and 35 perceive dairy products as containing too much sugar³. As a result, reducing sugar content is key to dairy producers attracting, or wanting to attract a wider demographic of consumers.

Sweeteners have long been used as an alternative to sugar in 'healthier' products across a number of markets, Europe in particular. But it is not always a simple case of substituting sweeteners for sugars – manufacturers may need to completely reformulate their product recipes, which can pose a number of taste and technical challenges.

Achieving the right taste profile

While health is a key focus, more European consumers ranked flavour (49%) as a key consideration when purchasing dairy products than nutritional information (32%)⁴. This means achieving taste parity between the original product and the sugar-reduced alternative should be at the forefront of any reformulation.

Manufacturers will need to consider several factors, ranging from the impact of sweeteners on the flavour intensity of products, to the different 'time profiles' of the sweeteners, balancing up front sweetness and linger. This can be complex, but at Tate & Lyle our team of experts are helping manufacturers find bespoke sweetening solutions that ensure their products maintain the taste consumers love.

In formulations, like ice creams and sweet desserts, it may be necessary to use multiple sweeteners. This is because using high amounts of one type of sweetener can result in the clean sweetness of taste being lost, and even leave a slightly 'off' taste that can be detrimental to the overall taste of the product. Combining different sweeteners can enhance the level of sweetness without impacting on taste.

Naturally sourced sweeteners

When given the choice, many of us are looking for food that contains more natural ingredients⁵. When it comes to naturally sourced sweeteners, right across the globe about half of consumers consider these ingredients to be 'healthy'⁶.

This has led to a growth in popularity of sweeteners from natural sources. This includes stevia, which is already a popular choice for manufacturers and consumers alike – research has shown that 27% of consumers feel stevia is something they can enjoy without feeling guilty⁷.

Our toolbox of sweeteners includes a range of stevia sweeteners that can be used to reduce the calorie and sugar content of products to make them more attractive to health-conscious consumers while maintaining great taste.

In addition, some stevia products can also be used as flavours with modifying properties, which means they increase some aspects of a flavour profile or even reduce unwanted flavour notes. For example, our stevia-based natural flavourings, such as ZOLESSE Natural Flavours and NATROSE Flavor 2.0, can be used alone or in combination with sweeteners to improve overall flavour quality, and reduce bitterness and linger, helping manufacturers to achieve the exact taste they need.



Total sensory experience

When reducing or removing sugar it is not just the taste that needs to be compensated for – manufacturers must think about the total sensory experience. Sweeteners are generally used in lower quantities than sucrose, which can impact texture and mouthfeel.

To address this, manufacturers can combine sweeteners with fibres and starches, which build back body when ingredients that provide these functions have been removed. For example, our CLARIA functional Clean-Label starches and PROMITOR Soluble Fibre can help manufacturers replicate the mouthfeel and texture of their products when sugar has been removed to give consumers the same sensory experience.

- 1 Mintel, 'Attitudes Towards Sugars & Sweeteners UK - 2021'
- 2 Tate & Lyle proprietary research "European Dairy Consumption Trends" (March 2022). 1,554 consumers (aged between 18-65)- 'younger consumers' defined as 18-35 years old; older consumers 35+.
- 3 Tate & Lyle proprietary research "European Dairy Consumption Trends" (March 2022). 1,554 consumers (aged between 18-65)- 'younger consumers' defined as 18-35 years old; older consumers 35+.
- 4 Tate & Lyle proprietary research "European Dairy Consumption Trends" (March 2022). 1,554 consumers
- 5 GlobalData's 2021 Q2 global consumer survey
- 6 FMCG Gurus: Sugar and Sweeteners in 2022

We recently worked on a new formulation for a blueberry-flavoured yoghurt with no added sugar and high protein content, using a combination of our OPTIMIZER STEVIA 2.1 and INTESSE STEVIA 2.0 sweeteners, and PROMITOR Soluble Fibre. As well as delivering on low calorie content, we were also able to achieve a balanced sweetness, clean taste profile and increased mouthfeel.

Using fibres can also address more holistic health concerns. With more than twice the digestive tolerance of inulin, PROMITOR Soluble Fibre can have a positive impact on digestive health*, which is a growing focus for many – 57% of US consumers want to increase their fibre intake, rising to 84% in Mexico and 82% in Brazil⁸.

Creating a bespoke solution

There is not a one-size-fits-all solution for reducing sugar. A bespoke approach is required for each individual manufacturer and product to perfectly match

their taste and texture requirements. We also know there are variations across different markets. At Tate & Lyle we have a team of experts on the ground who understand and appreciate the varying demands across different markets and can provide relevant insight into local trends and guidance on how to stay ahead in the changing landscape.

For those that can find the right balance, there are significant opportunities to grow their sales. To make the most of these it's important for manufacturers to get ahead of the game by being prepared to adapt and innovate. The result? Achieving the right formula to deliver on consumer expectations when it comes to both health and, importantly, taste.

- 7 Tate & Lyle proprietary research "European Dairy Consumption Trends" (March 2022). 1,554 consumers (aged between 18-65)- 'younger consumers' defined as 18-35 years old; older consumers 35+.
- 8 Health and Wellness Across the Globe. 2021, The Harman Group, Inc.

* The applicability of label claims, health claims and the regulatory and intellectual property status of our ingredients varies per country/region. You should obtain your own advice regarding all legal and regulatory aspects of our ingredients and their usage in your own products to determine suitability for their particular purposes, claims, freedom to operate, labeling or specific applications in any particular jurisdiction.

Dolomites Milk

Specialist for regional quality products

With Dolomites Milk, South Tyrol has had its own drying plant since the end of 2019. The joint venture was made possible by the two South Tyrolean companies Loacker and Milchhof Brixen (BRIMI). The family-owned company Loacker, the world's leading wafer producer, focuses on regionality and vertical integration for its most important raw materials. In addition to hazelnuts, cocoa and vanilla, milk and whey powder are the key raw materials. In Milchhof Brixen, they found the ideal partner for the joint venture, with a focus on regionality and sustainability. Vintl was chosen as the location, which is in the immediate vicinity of Milchhof Brixen and between the two Loacker production plants.

Dolomites Milk is designed to produce 15,000 tons of powder per year, around a third of which goes to Loacker. The processing raw materials, milk and whey, come mainly from contractual partners in the Alpine region, which means that the company does not need to collect its own milk and can concentrate entirely on its core business. As a subsidiary of Loacker, Dolomites Milk has a very lean structure with around 30 employees. Administrative activities are handled by the parent company.

State-of-the-art technology

Dolomites Milk is equipped with state-of-the-art technology. The entire process was built by well-known European suppliers, with great emphasis on food safety. Environmental aspects are also very much in focus, with the aim of using the available resources as sparingly as possible. For this purpose, energy recovery systems were in-

stalled and, for example, river water was used for cooling.

There is a high degree of automation, so that continuous operation can be guaranteed with very few employees. The dried powder is loaded into silo trucks for Loacker and other customers on a large scale; depending on customer requirements, it is also filled into BigBags or 25 kg bags using fully automated filling systems.

Ulrich Marcher, Managing Director of Dolomites Milk since the beginning of 2022: "We focus strongly on saving resources. Heat recovery and reuse of water are at the top of the agenda in our operation. The main energy source is gas, but in view of current developments we are of course considering whether energy sources from biomass could be an alternative in the future."

Goals and vision

For Loacker, it was important from the outset that the semi-finished products produced by Dolomites Milk meet kosher, halal and NON GMO standards and come from the Alpine region. For the focused markets of infant nutrition and confectionery, the highest and continuous product quality, effective hygiene concepts and food safety are paramount, which Dolomites Milk meets through the latest plant technology and appropriate process design.

Marcher has a clear vision for the coming years. "At the moment, after an initial build-up and growth phase, we are already running the plant at full capacity, with stable processes and the highest product quality. We want to become even more ef-



*Dolomites Milk Shooting 2021 (23)
(photo: Dolomites Milk)*



ficient and competitive and focus on specialised products with the highest quality standards. In doing so, the refinement of raw materials is carried out with a focus on regionality, both in raw material procurement and in sales." We continue to strive for trusting partnerships with our customers and suppliers and have the best possible refinement of high quality raw materials as a long-term goal.



Managing Director Ulrich Marcher: "We focus strongly on saving resources"
(photo: Dolomites Milk)

VISION

Unsere Vision ist es, unseren Kunden ein sorgfältig hergestelltes, hochwertiges Nischenprodukt aus Milch und Molke ohne Gentechnik aus Südtirol und dem angrenzenden Alpenraum zu liefern. Gemeinsam mit unseren Kunden entwickeln wir maßgeschneiderte Produkte und passen sie flexibel an ihre spezifischen und individuellen Bedürfnisse an.



Advertising



1 Dolomites Milk can produce 15,000 tons of milk powder per year.
(photo: Dolomites Milk)

2 The semi-finished products produced by Dolomites Milk comply with kosher, halal and NON GMO standards. (photo: Dolomites Milk)



Worldwide trading

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Used machines:

Separators, Bactofuges

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Brands: Alfa Laval, Tetra Therm, Tetra TBA, GEA

Also complete dairy factories

Milk in EU schools: building healthy eating habits for life

Similar to the 'Special Milk Program' in the U.S., the European Union school scheme aims to promote healthy diets by supporting the distribution of milk, fruits and vegetables to millions of children, in a context where unhealthy eating habits are worryingly increasing.



Milk and dairy products provide a wide range of essential vitamins and minerals that are vital for our overall health throughout all stages of life. As a primary source of calcium, phosphorus, potassium, vitamin B2, B12 and iodine, milk and dairy products are especially relevant in the diets of children and adolescents, contributing to their physical and cognitive development.

During childhood and adolescence, bones need high-quality protein and calcium to grow and develop healthily and also to maintain bone health later in life. Both nutrients are naturally abundant in dairy products like milk, cheese and yoghurt.

Nutrients in dairy are also important for muscles. High-quality proteins in milk and dairy foods contain many essential amino acids and bioactive peptides, which may have specific effects on growth and contribute to muscle growth and maintenance.

Many observational studies also suggest a positive association between dairy intake and dental health. Particularly, cheese and yoghurt consumption leads to less dental caries in children.

Related to cardiovascular risks, scientific data shows that higher dairy intake in early life is associated with lower blood pressure in middle childhood or early adolescence. There is also a positive

association between yoghurt consumption, including flavoured ones, and diet quality and metabolic profile in children.

According to the Food and Agriculture Organization (FAO) of the United Nations, healthy diets that include milk and dairy products are generally the most calcium-rich option to prevent negative health effects linked to calcium deficiency, with a 250 ml glass of milk providing around 57 % of the recommended daily calcium intake.

However, the consumption of milk in Europe does not meet international or national nutritional recommendations, what raises concerns over the correct health development of children and adolescents. Even though the European recommendations of dairy consumption suggest 3 to 4 servings of dairy for children, many kids fail to meet these nutritional requirements – a trend that is on the rise right now with the ongoing food inflation.

Decrease in dairy consumption might prompt rising micronutrient deficiencies in children

Children's overall milk intake is decreasing and it is often replaced by potentially nutrient-poor, energy-dense foods and beverages.

The latest data show that milk and dairy consumption is declining among youngsters: since 1965, milk consumption has

decreased by 74%, while the consumption of soft drinks has increased by 118% since 1965.

This worrying trend is putting at risk the healthy development of children, adolescents, and future generations. Nutrient-rich foods such as dairy are important for a balanced and healthy diet, and replacing them with nutrient-poor and calorie-dense foods and drinks leads to an increase in energy intake and to a decrease in calcium intake.

Many children and adolescents do not reach the dietary recommendations for dairy, what can cause insufficient intakes of nutrients such as calcium, selenium, and iodine. Together with nutrient deficiencies, inadequate milk and dairy consumption can negatively impact calcium absorption, contributing to bone loss later in life.

In addition, studies show a rise in childhood obesity coinciding with a decline in dairy consumption and an increase in sweetened nutrient-poor beverage consumption.

EU school scheme: time to release its full potential

In this context, the EU school scheme was initiated to counteract the proliferation of unhealthy diets among children by funding the distribution of milk, fruits, and vegetables, while increasing education on the importance of a balanced diet in schools across the European Union, encouraging this way the younger generations to develop and follow a healthy diet and lifestyle.

The EU school scheme also has the objective of reconnecting children to agriculture by funding farm visits, organizing theme days, cooking workshops and educational activities across EU member states.

Applicable since 2017, the EU school scheme combines two previous schemes, the school fruit and vegetables scheme and the school milk scheme, under one single legal framework.

Currently, the legal framework for the EU school scheme is under revision, so we have an excellent opportunity ahead of us to uncork its full potential and promote healthier eating habits among children, in line with international and national nutritional recommendations. As EDA, we are in constant communication with EU lawmakers to ensure the smooth running of the new scheme, and we welcome the prominent place of milk.

Some non-dairy companies have put all steam into their lobbying engines to try to convince the European Union to integrate fortified plant-based drinks in the school scheme. However, it goes without saying that plant-based beverages cannot be compared to milk and dairy when it comes to their nutritional value, even when fortified.

Besides, as acknowledged by the European Food Safety Authority in its 'Scientific opinion on dietary reference values for protein,' animal-sourced proteins such as milk proteins are of a 10% to 30% higher biological quality than plant-sourced proteins. In

addition, dairy protein provides all the essential amino acids needed by the human body. These are provided naturally in one ingredient, while plant-based proteins often do not contain the right proportions or sometimes even lack certain essential amino acids.

The updated scheme is expected to be unveiled in the upcoming months, and we trust that the European institutions will continue to support, promote and facilitate good healthy eating habits among children, where milk and dairy play an essential role.



Arla Foods Ingredients has developed a solution that allows the creation of fermented drinks that are both clear and high in protein (photo: AFI)

AFI

Fermented drinks both clear and high in protein

Arla Foods Ingredients has developed a solution that allows the creation of fermented drinks that are both clear and high in protein – an innovation in the healthy beverage space.

As demonstrated by the continuing popularity of kombucha, drinking yoghurts and clear protein drinks, there is high demand for novel ready-to-drink products. Recent innovations include fermented protein beverages, which offer synergistic health benefits because protein supports the growth and viability of probiotics.

The new solution, which is based on 100% whey-based hydrolysates Lacprodan HYDRO.365 and Nutrilac FO-8571, opens up new ways to give fermented protein beverages a twist. Because it significantly minimizes cloudiness and sedimentation, it can be used to create high-protein fermented beverages that are just as clear as alternatives without protein.

Manufacturers can use it with thermophilic cultures for fermented drinks, or mesophilic cultures for kombucha-style beverages, both of which are high in probiotics – meeting a key consumer need – and lactose-free. They can also be produced on a standard yoghurt processing line.

Cheese Cutting Machines



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Cheese Technology



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When it comes to plant and cell-based alternatives for dairy products – we all look to ISRAEL for innovative solutions.

The latest developments on this topic will be presented at the 3rd edition of the international conference on the importance of plant and cell-based alternatives for dairy products on April 19, 2023. Experts from the leading startups from Israel will give a first-hand account of the status of their work at this virtual event.

(<https://www.muva.de/seminare/details/konferenz-pflanzliche-alternativen>)

Following companies will participate:

- » YOFIX
- » else Nutrition
- » Wilk
- » REMILK
- » Imagindairy

The organizers, muva kempten GmbH and Herbertz Dairy Food are also preparing a larger presence event with a foyer exhibition and the possibility to taste products extensively for June 13 and 14, 2023 in Kempten.

NEWS



(photo: Grundfos)

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(photo: GEA)

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