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DAIRY

March/April 2023

magazine

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Dairy Technology Award

Deadline for applications 30 October 2023



Supported by the dairy trade publications IDM International Dairy Magazine and molkerei-industrie and the Society of German Dairy Engineers (Ahlemer Ingenieure), the Dairy Technology Award aims at highlighting successful innovations in dairy and food technology. The prize has been awarded since 2009 to companies in the dairy and supplying industry and relevant service providers.

The Dairy Technology Award focuses on processes, equipment, complete production units and problem solutions that are of benefit to the overall dairy industry.

Jury

Applications will be judged and awardees will be selected by a jury consisting of these renowned experts:

- » Prof. Dr.-Ing. Jörg Hinrichs, Dep. Soft Matter Science and Dairy Technology, University of Hohenheim
- » Dipl.-Ing. Klaus Schleiminger, KSI Engineering, Krefeld
- » Prof. Dr.-Ing. Saskia Schwermann, University of Applied Sciences and Arts Hannover, Faculty of Mechanical and Bioprocess Engineering
- » Prof. Dr.-Ing. Matthias Weiß, University of Applied Sciences and Arts Hannover, Faculty of Mechanical and Bioprocess Engineering

Awards will be made in these field

- » Process & Automation Technology
- » Packaging & Filling Technology
- » Environment & Sustainability Improvement (saving of energy and resources)
- » Process Management & IT
- » Logistics
- » Food Safety

How to apply

Only in digital form, a condensed application is requested first. It should include:

- a) Reason for application
- b) Description if company/innovator with a short portrayal of the applicant and ist professional background.
- c) Title of the application and area of development
- d) Description of the innovative project/the innovation on max. 3 pages A4 incl. illustration (photos, graphs, tables, sketches) centering on the special innovative development and, if applicable, quoting sources. (After checking, the jury might ask for further documentation or an on-site inspection)

Send applications to: Roland Sossna, Editor molkerei-industrie/IDM International Dairy Magazine, Email: sossna@blmedien.de. Questions will be answered by email or phone: +49 2590 94 37 20, +49 170 418 59 54 .

Awarding

The prize winning developments will be presented at the trade show Anuga FoodTec in March 2024.

Awardees will receive a certificate, the winning developments will be presented to an international readership in the magazines IDM International Dairy Magazine and molkerei-industrie as well as on Twitter and the websites international-dairy.com and moproweb.de.

Between market and socialism

Plummeting milk prices, emerging ideology



Roland Sossna
Editor IDM
International Dairy Magazine
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None of the elements in the dairy chain is solely to blame for the downturn of milk prices, which have now fallen significantly again. Rather, it was once again uncoordinated interaction, or to put it briefly: the market. We are simply facing a repeat of the developments seen in 2008 and 2013, when prices plummeted across the board after a relatively short but extremely wide upward swing.

The only difference in the 2022 bull market is that it took place in a highly inflationary environment in which the production costs for milk also rose to unprecedented heights. By summer 2022 at the latest, it must have become clear to all involved in the milk market that such high milk prices would not be sustainable in the long term. In fact, such extremely high prices were not desirable for any market participant, as they very quickly lead to a decline in consumption on the domestic market and to delayed or cancelled orders from export customers. At the same time, they stimulate production and lead directly to a surplus situation. But it looks like milk prices of around 60 eurocents, as recently in Germany, are now history – and are unlikely to return in the long term, if ever.

And already the small, aggressive clubs of milk producers are getting a tailwind again – as they always do when revenues decline. With demands for political intervention in the market mechanisms, new delivery volume regulation, etc., they are getting the ear of many a farmer. The fact that controlled economies and socialism have never worked is all too quickly forgotten when people start to worry about their livelihoods. In this respect, Roland Sossna fears that we could have another year full of unnecessary discussions.



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Food and Dairy Expo, Hyderabad

More than 8,500 visitors

The 2nd edition of Food and Dairy Expo, an International exhibition bringing together the stake holders in Food Products, Dairy Products, Processing and Packaging, Cold Chain, Machinery and Allied Industries onto one platform, was held at HITEX Exhibition Centre – Hyderabad from 3rd to 5th of February 2023.

This was the second edition of the Food Expo and Dairy Expo. Speaking at the inauguration ceremony of the event Shri Mohd Mahmood Ali Hon said that the expo plays a very vital role in bringing new technology and players at a single venue for the business establishments to interact and exchange knowledge and business. The event has seen a visitor turn out of more than 8,500 from across the country which included business heads, manufacturers, and end users. The visitors had a feel of the Dairy and Food Industry getting an opportunity to have one to one conversations with the marketing teams and getting hands on samples



(photo: Food and Dairy Expo)

that were on display. There has been a launch pad for many of the new players in the industry who were looking at penetrating the markets in the state of Telangana.

The 3rd edition of the event is planned to be held at Chennai from 24th to 26th November 2023 at Chennai Trade Centre, Chennai.

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Crema manufacturing site
in Villars-sur-Glâne, Switzerland
(photo: Crema, Stemutz Photo)

Wanted: Pioneering production process for powdered lactoferrin

Ambitious project develops spray drying process for high value milk protein

Valfoo is one of the leading family-owned suppliers of niche milk and whey products in Europe. Headquartered in Switzerland, and with a strong presence in Asia, the company works with key partner manufacturers, including well-known Swiss dairy producer, Crema SA, to develop sustainable processes for specialist dairy products including goat and sheep milk products, organic milk and dairy powders, whey proteins, yoghurt, butter, milk, cream, cheeses and lactose. In 2019, with an existing, successful global

dairy products business and an expanding product range, Valfoo's founders, brothers Daniel and Oliver Krayl set their sights on manufacturing the high value milk protein lactoferrin as a spray dried powder. They teamed up with Crema and GEA, Crema's key technology partner, with which the company has worked successfully in the past to develop pioneering processes. The aim was to develop and fine-tune a commercial process and to build a production plant for spray-dried lactoferrin at Crema's Villars-sur-Glâne site.

Valfoo, Crema and GEA were ideally positioned to work together on the spray dried lactoferrin project. As the second largest milk processing company in Switzerland, Crema has expertise in all aspects of dairy manufacturing, including the manufacture of advanced whey and milk protein powders. The company has also maintained a close relationship with GEA, spanning nearly 50 years, achieving a number of key technological milestones, such as the first installation of a GEA integrated filter dryer (IFD) in the market or the

introduction of the state-of-the-art GEA Cyclone Extra Efficiency (CEE) technology, as the first company in Europe.

Ambitious: Spray drying instead of freeze drying

“Generating a spray drying process for producing powdered lactoferrin was an ambitious project, and a bold move,” Daniel commented. “The whey protein lactoferrin is very heat sensitive, and so powdered lactoferrin has traditionally been manufactured using freeze drying techniques, which are less heat intensive than spray drying, but which are more costly.”

Despite the challenges, Valfoo, GEA and Cremo set themselves the task of devising, testing, and fine tuning a spray drying process that would be more effective than freeze drying, and which could generate high purity powdered lactoferrin with precisely defined physicochemical properties. “With Cremo on board as our manufacturing partner, in 2019 we approached GEA with the challenge of configuring spray drying equipment that could meet all of our requirements for producing lactoferrin with the required purity, functionality and other properties,” explained Daniel.

The partners were challenged with developing an entire process line – from extraction of the lactoferrin from liquid milk, through to the spray drying – that would avoid exposing the product to excess heat that could denature the protein, but which would also offer high efficiency, to keep product losses to a minimum. Developing a robust manufacturing process for spray dried lactoferrin was a significant achievement, the partners acknowledged.

Where the dream came alive

“Together with Cremo we had set up the wet line to isolate and purify liquid lactoferrin from milk, and we travelled to GEA’s test site at Copenhagen with a few milk bottles of lactoferrin, for initial tests,” Daniel said. “We worked with the GEA experts at the Copenhagen test site to set up the spray drying plant, including configuration of equipment features such as the spray dryer nozzle, and process parameters including inlet and outlet temperatures,” continued Oliver. “Achieving this was a major accomplishment, given the relatively small quantity of pure lactoferrin we had to work with.”

Crucial to success of the project was the size of the dryer. By using an optimally sized dryer it was possible to avoid subjecting the lactoferrin to excessive heat. The dryer size selected also minimized the amount of powder contacting with hot surfaces, which can occur when using smaller equipment.

So while it may previously have been assumed that the heat associated with any spray drying technology would destroy the

lactoferrin protein, as Daniel pointed out, “Actually, with the spray dryer from GEA, we don’t have this problem. There is no significant protein denaturation.”

The GEA solution ...

The spray drying process developed by GEA, Valfoo, and Cremo is carried out in a single-stage GEA VSD spray dryer size 12.5, which has a short drying time, and is configured using GEA CEE cyclones to achieve a high yield. Even though the new

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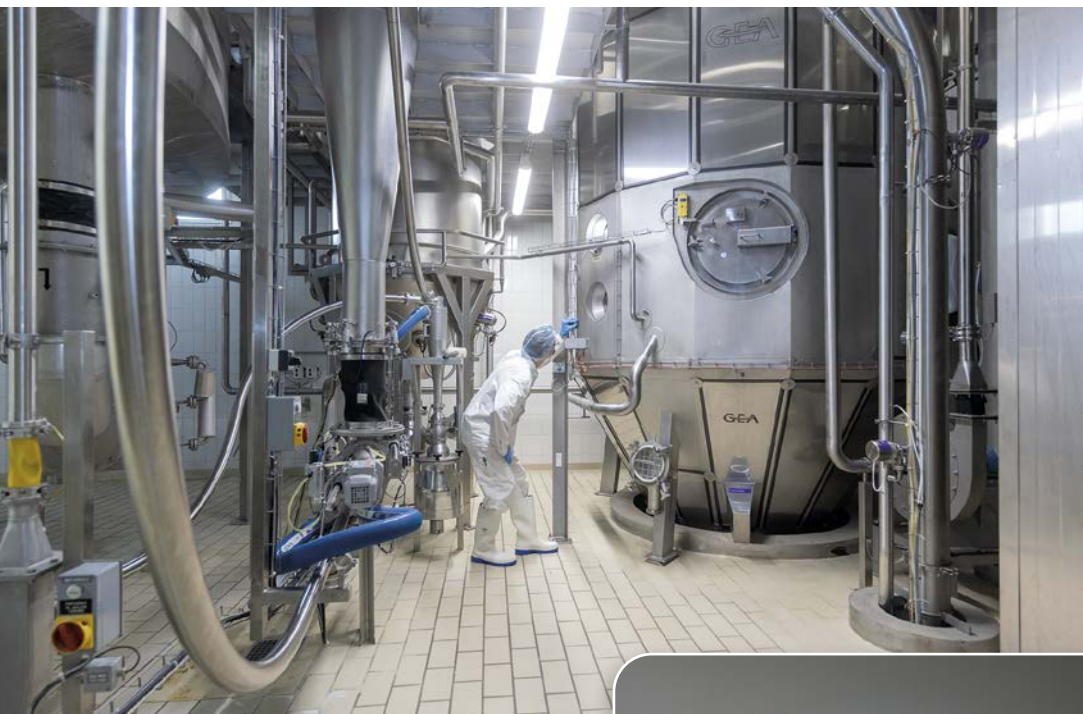


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The spray drying process is carried out in a single-stage GEA VSD spray dryer size 12.5, which has a short drying time, and is configured using GEA CEE cyclones to achieve a high yield (photo: Cremo, Stemutz Photo)

Valfoo cofounder Oliver Krayl (left) and Cremo Plant Manager Edgar Fasel (photo: Valfoo, Cremo, Stemutz Photo)

lactoferrin spray dryer is smaller than the other spray dryers at Cremo, it offers the same features that fulfil industrial food process plant requirements.

“The spray dryer we now have is actually a perfect size for our product and has been optimized with respect to features such as the falling height of the powder that comes out of the dryer, the pressure, the nozzle design, and inlet and outlet heat,” Daniel noted. “Fine tuning these parameters helps to ensure reproducible processing to achieve the exact spray drying effects required, and so generate the highly defined particle size distribution and properties.”

Faultless operation ...

Having completed, in 2020, the end-to-end process set up, from milk treatment through to spray dried lactoferrin powder packaging at the Cremo facility, Valfoo subsequently carried out some additional testing and fine tuning of the overall process. After the spray dryer was installed at Cremo, the processes had to be defined on site by the specialists from Cremo and GEA. The plant has been in operation



faultlessly since Spring 2022, currently generating 10.000 kg lactoferrin per year, with the possibility to ramp up production to 25.000 kg. “Importantly, the GEA spray drying plant gives us plenty of scope to grow and expand,” Oliver noted.

“Developing a production process that makes it possible to manufacture high purity, functional lactoferrin using spray drying technology has hinged on the combined industry, process, product and engineering expertise of Cremo, Valfoo and GEA, working in partnership,” said Edgar Fasel, at Cremo. “We already had in place the physical infrastructure and process know-

how, and were confident that GEA could configure a spray drying solution that would generate a high quality powder with the desired characteristics. The final plant meets all of our expectations.”

“Achieving the goal of this important project with our long term partner Cremo SA and Valfoo AG has been a perfect example of great team work,” said Johnny Bonke, Dairy Application Knowledge Manager, GEA. “From the very first test experiences in the GEA test facility, all three companies have worked closely together developing the plant setup and operating conditions, first in pilot scale, and then



Spray dried lactoferrin powder from the Cremo site (photo: Cremo, Stemutz Photo)

confirming all the test results for the commercial plant. We at GEA will continue to provide ongoing support to Valfoo and Cremo, growing the production of Swiss lactoferrin using our proven technologies.”

With successful achievement and completion of the lactoferrin project in 2021, Valfoo and Cremo became the first in Switzerland to establish an industrial process for generating lactoferrin powder using spray drying technology. The plant is today fully operational at the Cremo facility, and daily produces around 65 kg of lactoferrin powder that is marketed by Valfoo to manufacturers of infant and adult nutritional powders and health supplements, globally.

The plus points for spray dried lactoferrin ...

Spray drying has some major advantages over freeze drying for producing lactoferrin powder, cost notwithstanding. When compared with freeze drying processes, spray drying allows for more accurate, and consistent control of the powder particle size. This means that particle size distribution can be accurately defined, making it possible to produce a powdered product that is easier to dissolve in water. This feature is important for infant formula. Also, spray dried lactoferrin powder is paler than the reddish colored freeze-dried lactoferrin, and so any powdered product that includes the protein will be better from a visual perspective. Separately, compared with freeze dried lactoferrin, spray dried formulations demonstrate characteristics that make it easier to press the powder into tablets, or to fill capsules. Tableting spray dried lactoferrin requires less use of cellulose, silicon dioxide or other excipients, so the protein content per tablet can be higher, which makes for a higher quality product for nutraceutical applications.

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Barcelona Packaging Hub

The future lies in circular economy

Most of the materials used in the packaging sector, such as stainless steel are finite. For this reason, the industry must be aware of the importance of optimizing each of the resources used. Barcelona Packaging Hub, a network of companies in Barcelona dedicated to innovative and high quality machinery for packaging, seeks to abandon the traditional model and introduce the circular economy to extend the useful life of products. What is known as planned obsolescence is the shortening of the useful life of a product by the manufacturer to increase consumption, as opposed to the circular economy, which is based on the fact that a durable product can be useful for decades.

Mengibar, one of the Hub's founding companies, has developed a circular buy-back program to increase the usability of machinery before it is scrapped. The repurchase of the machinery depends on passing the reviews carried out to certify efficiency and good performance. In short, a proposal that favors the environment and contributes to a more sustainable business model.

Industry smarter than ever

The fourth industrial revolution has arrived. The implementation of artificial intelligence and the ability to automate systems makes it possible to monitor production processes, exponentially improving equipment efficiency. This type of technology allows the control of the machinery in a totally remote way, avoiding unnecessary displacements and solving problems in a faster and more efficient way.



AMCOR

Cheese packaging priorities

Amcor's new research unveils how consumer attitudes and expectations have changed towards hard cheese packaging across Europe. Amcor's research surveyed 3,176 hard cheese shoppers across the UK, France, Germany, Italy, Netherlands and Sweden to understand how packaging influences purchasing decisions and what their preferences are for hard cheese packaging.

Key findings include:

1. Transparency is at the forefront of consumer decision-making

Amcor's research revealed that 89% of consumers across Europe said that transparent packaging was important to them when buying hard cheese. Consumers want to assess the product's appearance, size and freshness before making any purchasing decisions.

2. Resealable packaging plays a role in customer loyalty

The research also found that consumers of hard cheese pay special attention to the sealing of the packaging when picking products

from the shelf, with 70% ranking seal integrity as the most important packaging requirement. 53% also recognized "reclosability" as a key factor.

3. Consumers are on board for a more sustainable packaging journey

Amcor's research found that 80% of European consumers say they recycle their hard cheese packaging in compliance with local instructions. When it comes to paper packaging for hard cheese products, consumers associate paper more with characteristics such as "artisanal" and "quality" than with eco-friendly appeal.

Shortage of materials and long lead times

During 2023, the packaging industry will continue to be plunged into a crisis due to the inability to guarantee customers delivery caused by shortages of electronic components and raw materials, and consequently price increases. The rising cost of electronic components is forcing manufacturers to raise prices, which inevitably has not been well received in the market. An example of reinvention by one of the founding companies of Barcelona Packaging Hub to adapt to the current situation is United Barcode Systems. The company has sought to optimize purchasing management with additive manufacturing, which has a direct impact on production costs, thus magnifying independence and flexibility in part design.

The efficiency of monomaterials

Film manufacturers have a focus on sustainability, which is why monomaterials, monoplasic and flexible paper are in constant development. Synchronpack, another of the founding partners of Barcelona Packaging Hub, is a clear example of reinvention, since thanks to the composition of monomaterials it is seeking to meet the demands of the industry. These demands are focused on achieving multilayer protection barriers with flexible packaging. Moving towards sustainable production, eliminating the need for separation, which contaminates recycling.

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Future Market Insights'

Analyst view

Safety First: A Dairy Good Investment: The Dairy Packaging Industry is expected to grow to \$50 Bn by the Year 2030 – Why does North America hold a market share of more than 30%?

Author: Ismail Sutaria*, Client Partner, Packaging, Future Market Insight

* Ismail Sutaria has over 8 years' experience in market research and consulting in packaging & materials industry. Ismail is an MBA in Marketing and a holds a Bachelor's Degree in Mathematics.

Dairy Products Packaging Market Size (2022)	US\$ 30.3 Bn
Projected Market Value (2030)	US\$ 43.6 Bn
Global Market Growth Rate (2022-2029)	4.5% CAGR
Collective Value Share: Top 5 Companies (2022E)	13%

Between 2022 and 2030, the market for dairy product packaging is anticipated to grow at a CAGR of 4.5%, reaching US\$ 43.6 billion by that time.

Due to slow development in the world's dairy production and an imbalanced supply and demand, the market for the packaging of dairy products has experienced erratic growth in recent years. Producers are hesitant to make new investments since the abundance of milk in powder form keeps overall profitability margins low.

Producers are attempting to differentiate their products through packaging, according to recent trends in the global dairy market. Present-day container options for dairy products frequently include eye-catching chick designs and aseptic elements. End users are investing in innovative dairy product packaging solutions as a result of the intense rivalry in key markets including Japan and the rest of Asia-Pacific, Western Europe, and North America.



Dairy product packaging manufacturers have launched cutting-edge packaging products in response to the changing dynamics of the dairy business. The need for flexible packaging is expanding globally. The strict laws governing the packaging and labelling of dairy products in nations like the European Union, the United States, and Japan are severely restricting the market for dairy products worldwide.

The dairy sector is seasonal and cyclical worldwide. In general, the packaging of dairy products falls into seven categories: liquid cartons, bottles & jars, pouches, cans & jerry cans, cups & tubs, folding cartons, films & wraps, and alternative packaging formats.

Dairy Products Packaging Demand Analysis (2015 to 2021) Vs Market Outlook (2022 to 2030)

The primary driver propelling the global dairy products packaging market is the increase in aseptic packaging demand. Several dairy goods, especially liquid dairy products, benefit from innovative aseptic packaging by having longer shelf lives.

Globally, consumers are paying more attention to improved dairy product shelf life and food safety. The share of flexible packaging in the worldwide dairy products packaging market is rising as a result of growing global demand for environmentally friendly aseptic packaging. Liquid cartons, pouches, cups, bottles, jars, metal, plastic, and composite cans are only a few examples of aseptic packaging types.

Packaging in dairy and other food goods is becoming more and more prevalent as modern retail outlets like supermarkets, hypermarkets, convenience stores, discounters, and others become

more prevalent worldwide. As a result, there is an increase in demand for dairy product packaging. Sales of dairy product packaging are predicted to create revenues worth US\$ 30.3 billion during the forecast period, growing at a CAGR of 4.5%.

What's with Choice of Packaging? To be favoured is Flexible Packaging.

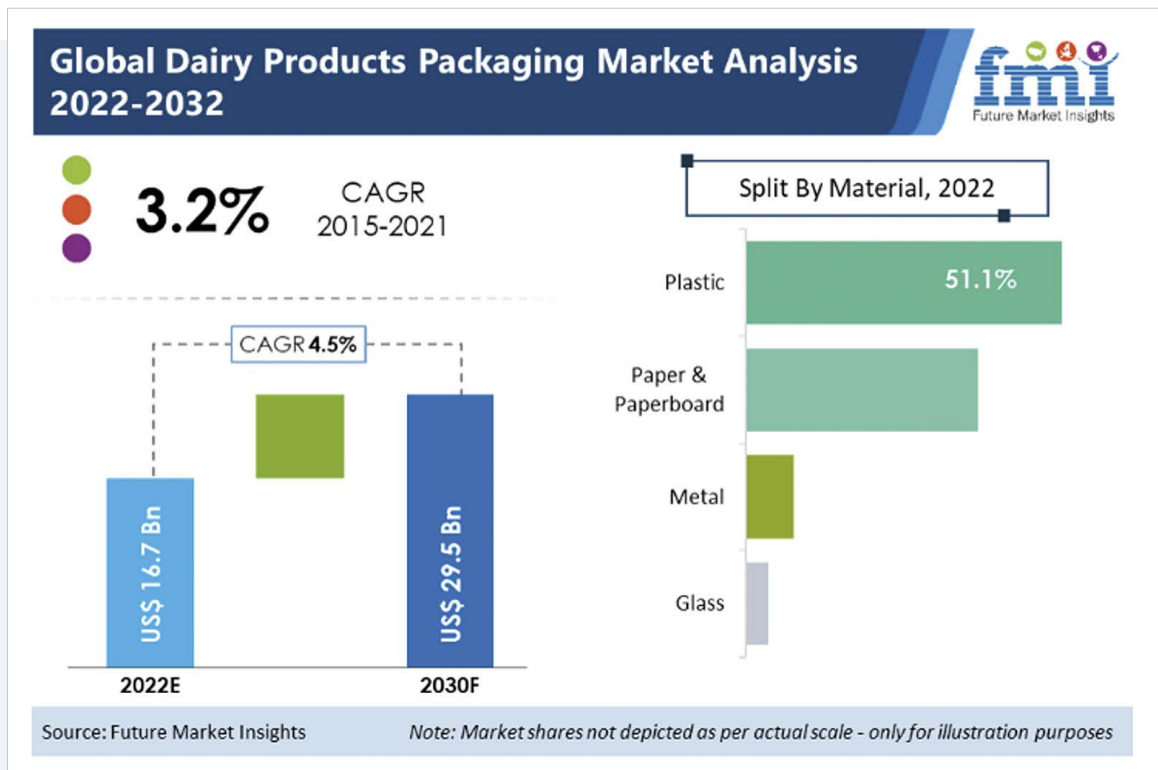
Flexible packaging is chosen because it is lighter and more compact than rigid packaging, despite rigid packaging having advantages such as excellent resistance to oxygen, moisture, and light. The biggest demand for dairy product packaging is anticipated over the projection period due to the excellent performance offered by retortable containers. Flexible packaging is the one that is prone to the most advancements out of the two.

Region-wise Insights

More than 30% of the market is accounted for by North America. This may be attributed to the US population's rising taste for dairy products such flavoured low-fat yoghurt and flavoured milk. Also, people are becoming more inclined to eat cheese, particularly Italian varieties like parmesan, mozzarella, and provolone.

Slices of packaged cheese are also consumed in significant quantities. For identical reasons, Europe is seeded second. Nonetheless, due to the Gen Z preference for dairy products, including cheese and paneer, the Asia-Pacific is anticipated to rise on an extravagant note in the dairy product packaging market moving future.

These insights are based on a report Dairy Products Packaging Market by Future Market Insights.





(photo: Messe Düsseldorf)



interpack – 04. - 10. May 2023, Düsseldorf, Germany

A trade show for everyone

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.

interpack will again offer the packaging and related process industry the biggest international overview of the market. Around 2,700 companies from around the world will meet in Düsseldorf to present cutting edge technologies and packaging trends from along the entire value chain. 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.

Food & beverages

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, Favema, 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, KHS, Krones, Aetna Group, Sidel and ProMach, as well as Gerhard Schubert Verpackungsmaschinen, Ishida Europe Limited and tna solutions. 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.

HITACHI sets ESG milestones

Hitachi's Coding & Marking Division is showcasing its commitment to sustainability. The new Hitachi UX2 Continuous Inkjet Printer drives efficiency forward by using improved dot control algorithms to produce legible codes at the highest production speeds. The printer features a newly designed print head with a mist shield function that collects ink mist during printing before it reaches the sensitive print components, ensuring consistent high-quality printing and minimizing the need for print head cleaning.

The UX2's innovative Safe Clean function offers several benefits to the user and the printer itself, including minimizing the printer's cleaning effort, allowing the user to quickly and easily clean the printer without long interruptions in production, saving time and resources as less solvent is needed.

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.

The exhibitor and product database is available at www.interpack.com. On the following pages, IDM has compiled information on important exhibits and exhibitors.



The UX2's Safe Clean function allows for a quick and easy cleaning of the printer (photo: Hitachi)

Advertising



END OF LINE
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A+F @interpack

May 4–10, 2023, Düsseldorf

Hall 11 Booth C60

“Let's
**GRAB
a
BEER**”



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Hall 11 Booth C60!



The new COBRA DX is available in two sizes, covers the performance range up to 950 m³ of pumping speed per hour thanks to variable speed control and achieves a final pressure of up to 0.01 mbar (photo: Busch Vacuum Solutions)

BUSCH VACUUM SOLUTIONS: Sustainable vacuum solutions

Busch Vacuum Solutions is showing its latest COBRA DX vacuum solution for energy-efficient vacuum generation for the first time. The screw vacuum pump scores points for user-friendliness and cost awareness. Thanks to Plug&Pump, the vacuum pump is immediately ready for use. Settings can be controlled via the integrated touchpad. The intelligent drive with variable speed control means that an optimum vacuum level can always be achieved, which lowers energy consumption and reduces operating costs to a minimum.

BEKUM: 20 new machine models

Bekum, machine builder and specialist for extrusion-blown packaging, informs about 20 new machine models for small to large container volumes. The new 8-series, presented for the first time at last year's K show, scores with improved energy efficiency, higher flexibility and shorter delivery times. The presentation of many exclusive technical solutions, the expansion of the digital service and the processing of recycled materials and calcium carbonate (chalk) in the three-layer process are the focus of the trade fair.

Bekum also focuses on digital service (photo: Bekum)



Fraunhofer IVV shows the way to digital value creation (photo: Fraunhofer IVV)

FRAUNHOFER IVV: Practice-oriented digitisation solutions

The Fraunhofer Institute for Process Engineering and Packaging IVV will present new technologies and solutions with which companies in the packaging and food industry can realise digital value creation and enter the circular economy.

Fraunhofer IVV develops digital training systems for the training and further education of operating and technical personnel on the basis of VR. These enable the learning of steps such as those required for a format change. They also provide targeted support for the fastest possible development of an in-depth understanding of the process, which is necessary for sustainable fault elimination and avoidance.

The AR-based "CleanAssist" and two variants of the "Mobile Cleaning Device" will be on display – pioneering technology applications for quality-assured, efficient and resilient production processes. Intelligent sensor technology and a digital twin enable complete, fully automated documentation of cleaning and cleaning validation.

WEBER: Intelligent complete line solutions from a single source

Weber will show how integrated solution and line concepts create real added value for customers in industry as well small and medium-sized businesses.

Precisely portioning, safely transporting and sustainably packaging foods such as cold cuts and pieces: Weber offers everything that food processing companies need from a single source. A holistic approach from product preparation to processing and packaging, as well as the seamless integration and intelligent networking of all line modules, leads to greater efficiency. The focus of Weber's presence at the trade show will therefore be on perfectly coordinated line concepts from the preparation of the raw product to the finished, inspected primary packaging – including a large number of innovations and new product launches, especially in the field of packaging technology.

Among the highlights on the Weber stand is a line solution for medium-sized food producers, in which several product innovations will be presented at once and which combines compact design with high performance. Visitors can also expect two line concepts for processing sliced products in the highest performance classes with maximum automation and efficiency. Thanks to comprehensive mechanical and software integration, these lines set standards in terms of productivity, sustainability and user-friendliness, according to Weber. A new Slicer which expands the Weber solution portfolio for food processing in smaller performance classes, has its premiere. The exhibits all have one thing in common: they offer added value in every processing step and generate more output from input for food producers. Digital products and services are just as much a part of the holistic approach in the Weber solution portfolio as innovative technology. Visitors to the Weber stand will therefore be able to discover, for example, how the Weber Digital Factory Solutions can be used to create more transparency and efficiency in production. In addition, the exhibited line concepts demonstrate the diverse added values of a continuous, bidirectional data exchange.



The focus of Weber's interpack trade fair presentation is on perfectly coordinated line concepts (Fig.: Weber)

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interpack 2023
Düsseldorf, 4-10 May
Hall 13, Stand A73



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GRUNWALD: Hightech equipment for the food industry

Grunwald will show latest filling and packaging technology for filling cups and buckets at their 200 sqm exhibition stand. One of their highlights will be a 4-lane UC inline machine specially developed for the dairy industry. It is an electronically monitored cup filler with ultra-clean equipment that meets the highest hygiene standards and guarantees sterilisation rates of at least LOG 4.

Grunwald reveals in advance that they will be additionally showcasing cutting-edge filling technology and, furthermore, for the dairy industry, an absolute world first in terms of flexibility and space-saving machine design.

New cup and bucket filling machines offer even more flexible and individual filling and presentation of products. The customised technology of these machines allows for extremely flexible production. Especially with regard to ultraclean (UC) technology the new models are designed for even more flexibility and individual applications and offer high-level filling and packaging technology.

Especially the ultraclean (UC) hygiene concept for cup and bucket fillers is a pioneering development. The focus of this technology is the pulsed light high-performance UV(C) sterilisation. It was certified by several independent institutes. Grunwald guarantees a sterilisation rate of at least log4 for cups, buckets, snap-on lids and seal lids on their rotary-type and inline machines at full cycle speed.

A new gas injection technology delivers a solution how to remove the negative effect that the production speed is reduced when achieving the lowest possible remaining oxygen value of < 1 %. Due to GRUNWALD's newly developed gas injection system it is possible to run production at full cycle speed, i. e. at up to 40 cycles/min. and achieve remaining oxygen values of < 0.5 % in the cup at the same time.

This new gas injection system offers clear advantages compared to the system used for evacuation/gas injection (MAP procedure) so far: new recipes with less or without preservatives are feasible as the remaining percentage of oxygen in the cup is very low, less energy consumption, no vacuum pump required, less gas consumption, higher machine efficiency, increase in production.

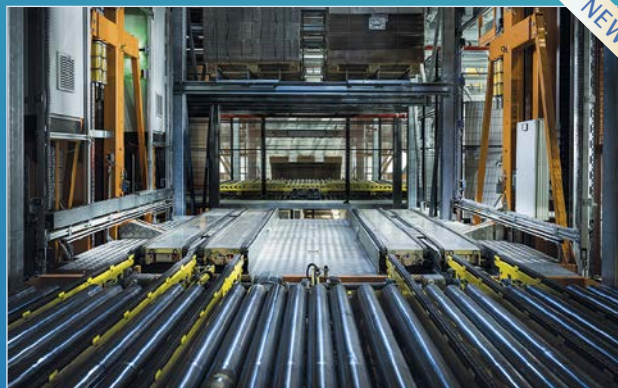


With a new gas injection system Grunwald's "all-in-one" machine concept (cup filling machines combined with mobile dosing systems) was significantly optimised. When filling pumpable and non-pumpable products on just the same Grunwald filling machine, it is possible to achieve very short changeover times, sometimes even with small batches (machines are allergen free within 3-5 minutes). In addition, residual oxygen values of < 0.5 % can now be achieved without evacuation (photo: Grunwald)

Timelessly efficient The Satellite storage system turns 40

Westfalia's Satellite load handling device is turning 40. The company is celebrating the anniversary of its intralogistics classic at the LogiMAT show. The system is designed for storage on pallets, other loading devices or palettless. It enables particularly deep storage channels, maximum storage density and space efficiency through maximum storage capacity on a minimum of floor space.

The technology, which is designed for temperatures down to -35 °C, reduces the space to be cooled in chilled and deep-freeze storage systems and thus the energy costs. Further advantages increase sustainability: Energy-efficient drives, fewer vehicles and storage aisles are required, process errors and returns are reduced.



Satellites offer a rare variety of variants for multi-deep high-density storage (photo: Westfalia)

MULTIVAC: Efficient and resource-saving production processes

MULTIVAC will be presenting itself as a holistic solution provider for the "Packaging and Processing" sector. The group of companies will be showing its portfolio on four exhibition areas. The focus will be on sustainable processing and packaging solutions as well as digital services which contribute to making production processes efficient and resource-saving.

The main stand in Hall 5 is aimed at the food industry. In addition to various packaging technologies, MULTIVAC will be demonstrating its automation expertise using the example of several fully automated packaging lines. In addition, concepts for the production of sustainable packaging solutions and solutions for the digitalisation of processes and business models will be presented. In addition, MULTIVAC will provide an insight into its broad portfolio of semi-automatic and automatic packaging solutions for small and medium-sized converters – from chamber machines and traysealers to compact thermoforming packaging machines.

On an area in the open-air site (in front of Hall 4) MULTIVAC Processing will be showing solutions from the MULTIVAC Group in live operation. These include a new slicer, a portioning system including product loading into trays and a flowpacker line.

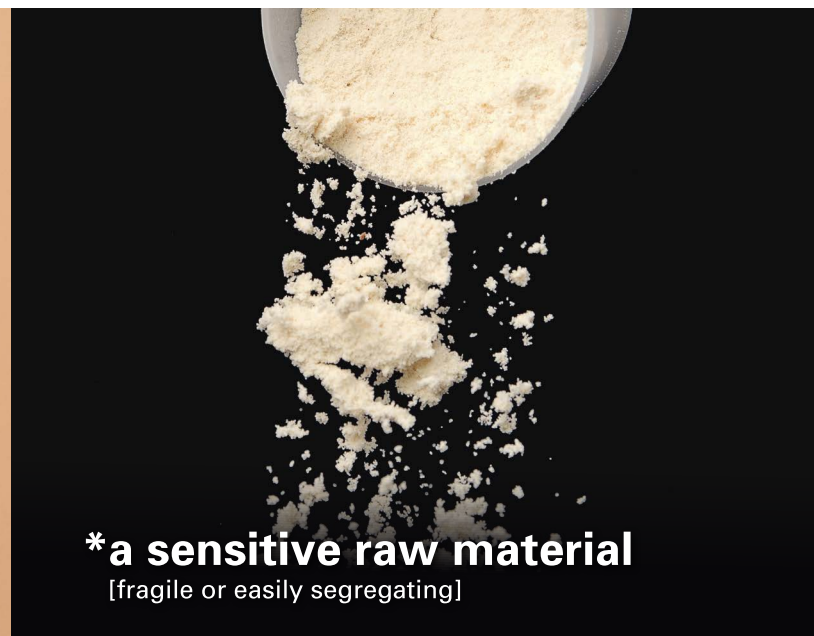


MULTIVAC shows concepts for the production of sustainable packaging solutions (photo: Multivac)

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ISHIDA: Automation solutions for current challenges

Ishida is underlining its solution competence and will be showing 40 automatic systems that are assigned to the competence areas of weighing, quality control, fresh product and snack processing. Individual systems and integrated systems will be on display.

The CCW-AS multihead weigher marks the 11th machine generation. The new series offers users maximum performance and an increase in overall system efficiency, especially for products that are difficult to process. At the same time, the scale impresses with its energy efficiency.

The newly developed Ishida IX-PD X-ray inspection system achieves maximum detection rates with its sensor and image processing technology. The device can detect foreign bodies with low density as well as very small contaminants.

The QX-500 tray sealer is powerful, energy-efficient, sustainable and compact. With this new development, Ishida meets the food industry's need to maximise yield and output without compromising product or packaging quality, while minimising environmental impact. The tray sealer can be easily integrated into packaging lines.

Ishida will also demonstrate its Industry 4.0 software "Sentinel" for monitoring machine performance with comprehensive data collection and analysis.



The CCW-AS multihead weigher processes even difficult products with high performance (photo: Ishida)



KS spreadable cheese solution with integrated UHT unit (photo: KS)

UHT TECHNOLOGY: Benefits across the board by high-tech automation

In 1911, processed cheese was made for the first time using the pasteurisation process. This opened up entirely new possibilities in the industrial processing of dairy products.

KARL SCHNELL, has supplied the first automated complete systems for production processed cheese production in the mid-1970s. As a result, UHT technology was continuously further developed. The construction of UHT plants has multiplied at KARL SCHNELL in recent years. Thanks to a high vertical range of manufacture and technological competence, KS offer plants in sizes from 100 – 6000 kg/h. Customers can choose between standard and aseptic versions.



HANDTMANN:
Automation solutions
for food production

Handtmann is showing cross-process solutions for food processing: from product preparation over to the manufacturing process and to packaging solutions. All process solutions are modular and flexibly configurable. Fully automatic solutions for formed and dosed products will be demonstrated live. These modern manufacturing processes are flanked by smart digital solutions that were specifically adapted to these processes and developed in-house by Handtmann. The monitor control in Handtmann vacuum filling machines reliably synchronises several cross-process processing steps. It controls, monitors and networks complex systems. This enables cross-process automation from product preparation with mixing and fine crushing to processing with portioning, dosing, forming or co-extrusion to a wide range of product handling options such as grouping, gripping, feeding and inserting the products into the respective packaging solution.



Handtmann solutions stand for process reliability in connection with packaging machines, such as thermoformers or tray sealers from Multivac (photo: Handtmann)

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METTLER TOLEDO:
Boost your Productivity!

Boost your Productivity! – is the motto under which Mettler-Toledo is presenting itself at interpack. The focus is on product inspection solutions with which companies can increase their productivity and also improve product quality and safety. "In seven themed areas, we will be demonstrating live how food and pharmaceutical companies can optimise their processes economically and make them smarter with our product inspection solutions," says Rainer Mundt, Head of Marketing at Mettler-Toledo Product Inspection Germany. "Smart means that our customers benefit from solutions that are robust, reliable and powerful – and at the same time future-proof for the rapidly advancing digital transformation to Industry 4.0 and IIoT."



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OPTIMA: Where best partners meet

OPTIMA will be presenting future-oriented packaging and filling systems designed for medium and high outputs for demanding powder, liquid and chunky products. The company will be showing a number of new approaches for packaging solutions that take into account the complete circular economy.

Visitors can see exhibits and cutting-edge technologies in the three main topics chosen by Optima: technology, service and sustainability. Another focus will be on cup- and can-shaped, mostly fiber-based packaging for food a. This also includes approaches for barriers without restrictions for recyclability and compostability.

The new OPTIMA Smart Moduline has a closing module that can be flexibly equipped with format parts from a 3D printer (photo: Optima)

Schäfer & Flottmann Wrap-Around Packer SFS 414 (photo: Schäfer & Flottmann)



On show for the first time: With its tog.519 cobot, Schubert is extending packaging process automation beyond the packaging line (photo: Schubert)

SCHUBERT: Packaging solutions for a sustainable future

Gerhard Schubert’s show highlights include cobots for the rapid feeding of different packaging components on a line, an extremely compact filling machine and an entirely new, efficient, resource-saving feeding system for carton blanks. Beyond this, the packaging machine manufacturer will show a concept study for a new generation of machines, in combination with an all-new type of transport system. Together, the two promise to advance current packaging processes to the next level of automation, flexibility and efficiency. The innovative technologies are complemented by a wide range of new services for more environmentally compatible packaging.





Complete SCM can filling and seaming line for baby food and milk powder
(photo: Swiss Can Machinery)

SWISS CAN MACHINERY: Can filling and seaming machines

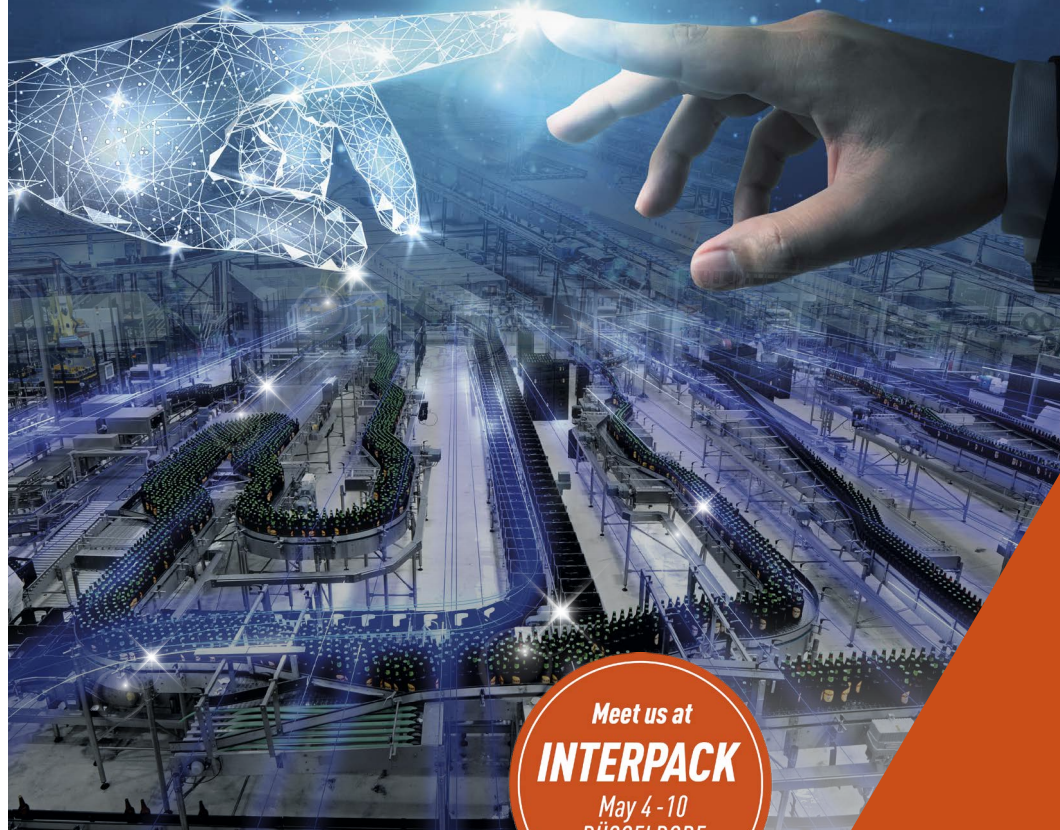
Swiss Can Machinery (SCM) has a leading market position concerning can filling and seaming machines that work under modified atmosphere within a capacity range up to 100 pieces per minute.

The modular series V-Matic equipped with an innovative control system, is in the main focus of production. It offers the additional option of evacuating and manufactures cans with less than 0.5 residual oxygen. A V-Matic seaming machine in combination with a multi-head weigher will be highlighted, demonstrating the filling of smaller pieces of chocolate into cans.

SCHÄFER & FLOTTMANN: High-Performance Wrap-Around Packer

A high-performance SFS 414 wrap-around packer will take center stage at Schäfer & Flottmann. The exhibit is equipped with product pre-stacking so that secondary packaging can be fed with up to 50 product layers per minute. Also worth mentioning is the particularly gentle product handling during the grouping and loading process, so that even primary packaging with a high paper content can be safely placed in the wrap-around cases in the interests of sustainability. In addition, the progressive digitalization of the packaging machine will be demonstrated in the areas of maintenance, operator guidance and data evaluation.

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A+F: Packer and crate erector for yoghurt jars

A+F Automation + Fördertechnik – part of the EOL Packaging Experts Group – will present a TwinLine pick-and-place packer and the 216-S crate erector.

After the trade fair, A+F will integrate both exhibits into a new installation at Sterzing dairy, Italy. This is a complete filling line with which the dairy cooperative will be able to fill, pack and palletise up to 10,000 150-gram glass cups of yoghurt per hour. A+F is also supplying the palletising technology and all the necessary conveyors for this expansion investment.

The innovative serv-driven TwinLine cup packer is based on an extremely reliable basic design, which is adapted by A+F to suit the customer's specific requirements. TwinLine stands for a packing cell in which two conveyor lines are arranged. One lane feeds a crate, a carton or a tray. The product enters the second lane. Both lines can be parallel, but also counter-rotating and single or multi-lane. Another possibility is the use of a bar chain. Finally, the incoming cups are picked up according to the packing scheme and inserted into the carton.

The 216-S erector produces cartons fully automatically. The blanks are removed by a servomotor-driven vacuum suction system. All other central functional units such as the blank transport, the folding station or the pusher for the support bars are also fully servo-controlled. For this reason, the crate erector type 216-S, like the TwinLine, is extremely precise and very flexible with regard to the formats to be processed.



A+F will show a TwinLine pick-and-place packer and the 216-S crate erector (photo: A+F)

RoboAccess_Pal S will make its debut at interpack (photo: Sidel)



SIDEL: Agile, compact palletising unit

Sidel is expanding its palletising range with the introduction of the high performing RoboAccess_Pal S. This unit combines cobotic and robotic. It provides a uniquely capable solution that delivers improved agility, operability and compactness.

RoboAccess_Pal S delivers speeds of up to 12 cycles per minute and enables a case payload of up to 25 kg while ensuring a fast return on investment, typically of one to two years. The palletising solution offers a new level of compactness with a footprint of less than 12m² for two stations with a significant pallet height of 1,700mm.

BOSCH Industriekessel Sustainable steam and heat solutions

At the ISH trade fair, Bosch Industriekessel showcased sustainable steam and heat solutions. Bosch presented its new ELSB electric steam boiler live at the stand. The ELSB is completely electric and is carbon-neutral when powered by green electricity. With 300 to 7,500 kg of steam per hour at up to 24 bar, the ELSB covers steam processes with temperatures of up to 224 °C.

Hybrid boiler systems are another pioneering technology. Thanks to their design with an electric heater and burner, different energy sources can be used simultaneously. This creates flexibility and reduces dependence on fossil fuels.

Digitalisation and automation can also make a significant contribution to sustainability. Bosch uses its control systems which are configured and manufactured in-house for industrial boiler systems. The software in these systems automates complex steam and heat processes and ensures transparency. Intelligent analysis and recommendation for actions also offer more options for rapidly detecting energy losses, reducing fuel consumption and maximising system availability.

Bosch Industriekessel put hybrid boiler systems in the focus at ISH (photo: Bosch Industriekessel)



MINEBEA INTEC: Weighing and inspection solutions

Minebea Intec will show systems for visual product inspection, like the VisioPointer and a new checkweigher model Flexus along with the X-ray inspection system Dylight. These products, which together formulate a complete efficient production process.

The VisioPointer has three cameras as standard, multiple lighting options and optional side and satellite cameras for multi-angle in-spection, and delivers high-precision results when checking labels, print or the expiry date. It also provides reliable seal inspection.



*Checkweigher Flexus:
hygienic design meets
flexibility and maximum
performance
(photo: Minebea Intec)*

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We should not lose patience with Industry 4.0

“Even Chinese experts recognise this and have recently come onto our exhibition stands asking about Industry 4.0. That is a good sign”

Dr Marius Grathwohl, Vice President of Digital Products and Transformation at MULTIVAC



Zero productivity progress, no organisation, no standardisation: In the opinion of some experts and many in the media, the German economy has been asleep, when it comes to digitalisation and Industry 4.0. But as this interview shows, Dr Marius Grathwohl, Vice President of Digital Products and Transformation at MULTIVAC, the specialist packaging company, is convinced that this is far too pessimistic. And this is why there are grounds for hope.

IDM: Dr Grathwohl, has German industry actually missed the opportunity for connecting with the fourth industrial revolution?

Grathwohl: What the German economy has achieved with digitalisation in recent years can not, in my opinion, be dismissed as “zero productivity progress”. Many things have been done. For example, the BITKOM, VDMA and ZVEI industry associations founded and expanded the Industry 4.0 platform – one of the largest Industry 4.0 networks worldwide, which cooperates with many different alliances, as well as giving practical start-up help on digitalisation and Industry 4.0 to small and medium-sized companies. According to BITKOM, some 62 percent of companies in Germany have since introduced Industry 4.0 applications. And the platform has also provided stimulus within the international discourse. That is a very important point. A powerful vision like Industry 4.0 needs sufficient time. We should not expect, that all the players are at the same level, and that everything is ready at the same time. And we should not lose patience. Not after just ten years. Think of the Amazon founder, Jeff Bezos, who had the vision in the 1980s

of shifting heavy industry into outer space and transforming the earth into a sort of national park. Only today, some four decades later, are private space flight companies being developed, which could transform the vision into reality. Big dreams can take time. And things are already happening on the journey. We at MULTIVAC started in 2017 to engage intensively with the subject of the Industrial Internet of Things. Since then we and our technology suppliers have made rapid progress. The infrastructure and the networking of machines are striking examples. Even Chinese experts recognise this and have recently come onto our exhibition stands asking about Industry 4.0. That is a good sign. Big things are due to happen for us.

IDM: What does digitalisation make possible for German industry?

Grathwohl: I see digitalisation as a powerful instrument for promoting trade and industry. Particularly in the machine engineering industry, one of the foundations of the German economy, it is the digital transformation, which offers companies the opportunity to reposition themselves and develop new markets. One example of this is service. Here the business models will change in the next ten years – driven by Industry 4.0 technology. Away from the classic spare parts business towards proactive and customer-focused service. Thanks to digitalisation, networking and key technology such as Big Data and Artificial Intelligence, it is possible for operators to analyse the live operation of machines and lines, as well as optimising the throughput, eliminating faults more quickly, and therefore increasing the machine availability. Services, which mean



Many business models will change in the next ten years – driven by Industry 4.0 technology (photos: MULTIVAC)



hard cash for customers and are consequently very attractive. But it is not only about promoting economic efficiency. In my opinion, digitalisation is also an aid to sustainability. Thanks to networking for example, machines and lines can provide live consumption figures for power, compressed air and coolant, and these key performance indicators support companies in making their processes more transparent and recognizing potential for savings.

IDM: What has to happen in the coming years to achieve greater progress in Industry 4.0?

Gratwohl: German machine manufacturers have been diligent in recent years in introducing digitalisation. Most of them have developed their own range of digital products and smart services. But this now presents the question: How do we build up a functioning eco system, and how do we create the interfaces, so that the various technologies operate across all manufacturers and provide the

maximum added value for users? I am cheerfully optimistic about the prospects. There are some very promising solutions, which are now "ready for market". If you just think of the Asset Administration Shell. This standard across all sectors makes it possible for networked machines and components to communicate with each other in the Internet of Things. This ensures that worldwide interoperability can be achieved. However it is not only the openness of manufacturers, but also that of users, which is important for progress in digitalisation. Data security plays a large role here. Fortunately increasingly few of our customers have concerns, if it is a question for example of sending data to the cloud. A sort of basic trust has developed in recent times, particularly when working with established cloud providers such as Microsoft or Amazon. Today there is far less discussion about dangers, and much more about functions and added value.

IDM: One final question: What do politicians have to do, in order to drive forward digitalisation and Industry 4.0?

Gratwohl: Industry 4.0 does not only have significance for the producing industries. The areas of application also include mobility, health, climate and energy. Politicians need to apply the necessary focus in these areas as well. And also on the constraints, with which companies are grappling. These include inadequate financial means and a lack of technical staff. It would be desirable for politicians to give companies greater financial support for Industry 4.0 applications, as is the case in other European countries. In my opinion, initiatives such as the Open Industry 4.0 Alliance also deserve greater attention and support. The community charged with implementing these digitalisation measures plays an important role, when it comes to creating an open eco system for Industry 4.0 with the maximum degree of interoperability.

Innovations prior to interpack and innovations shown at interpack

Grunwald's presence at the packaging show



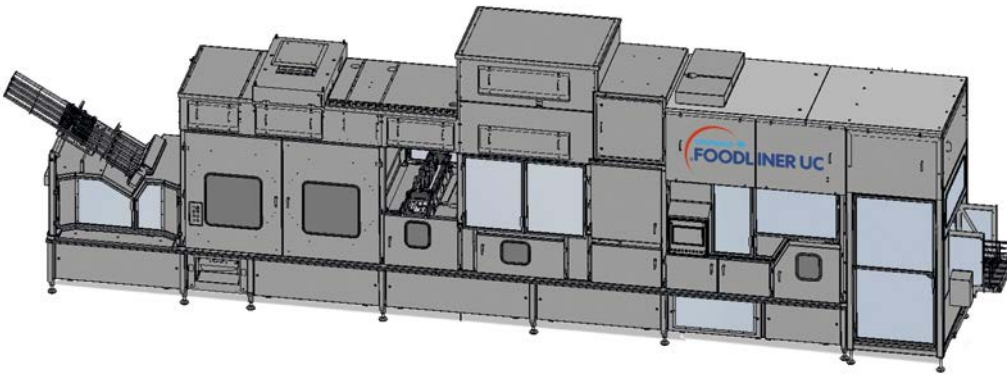
View on the Grunwald site with the drone: the new car park on the right and the new production hall with a height of 6.5 metres next to it (photo: Grunwald)

Grunwald, the manufacturer of filling machines, in Wangen continue their expansion, which has been many years in the making. At present, the fourth assembly hall is being built and will be completed in a few weeks. At the same time, a pilot plant station for Grundwald's own research and development work is also being built. This facility will allow Grunwald to determine and test customised packaging materials and processes, particularly for the dairy industry. IDM was on site.

The new assembly hall with a floor space of 1,400 sqm has a clear height of 6.5 metres. This allows Grunwald to carry out FATs with extremely high machines for the first time. Machines have extraordinary heights when products are filled by means of a multi-head weigher. The roof of the new assembly hall will be equipped with photovoltaic as Grunwald endeavours to generate

its own power to guarantee reliable production in the future. The complete photovoltaic power will soon amount to 600 kWp, which requires the installation of a second transformer station with a power rating of 1,000 kVA. And that's not all: at present the company installs 4 additional metalworking machines which will increase the in-house production depth to 90 %.

Christoph Trunzer, Sales Director Global Markets at Grunwald: "Grunwald have been growing in the double-digit range for more than 10 years. This momentum was pushed further after we set the focus of our machinery on UV(C) sterilisation in 2019. Meanwhile we manufacture more than 100 machines per year and achieve an annual turnover of approx. 40 million euros with 220 employees. As the available space has reached its limit we expand our site further."



3D drawing of inline machine. This inline machine boasts ergonomic design with a length of 14 metres and a production speed of 9,600 cups/h will be shown at interpack (photo: Grunwald)

Highlights aplenty at interpack 2023

Visitors to the world's largest packaging exhibition Interpack can see for themselves these machine concepts in hall 6, stand 6B01 from 4 – 10 May 2023. The highlights will be two machines, one inline machine and one rotary-type machine.

The inline machine with its impressive length of 14 metres will be shown at the stand. This machine has 4 lanes and a production speed of 9,600 cups/h and will soon be supplied to a dairy in Southern Germany for filling cream cheese. It can be operated without platforms as all magazines are accessible at a normal working height ("low-level") to guarantee safety at work and ergonomics. The format plates for 2 cup sizes are stationary mounted so that a format changeover can be made by the push of a button within 5 minutes. Its capability to fill hot and cold products is one of the special features of this machine, as well as the particle suction prior to the 2-stage sterilisation of the packaging materials by means of UV(C). The hygiene level is increased further by an integrated tunnel cleaning and cup ionisation. According to Trunzer the machine can achieve a sterilisation rate of at least log4 which was tested and verified by several independent German institutes. Remarkably 4,000 man-hours are required to design and manufacture this machine. The second highlight at the exhibition is a rotary-type machine on which Grunwald do not reveal much information prior to the exhibition. However, the editor got to know that it is a 4-lane machine which was modified in such a way that it meets the highest hygiene standards. This filling machine is also equipped with UV(C) sterilisation and has a production speed of 10,000 cups/h when handling standard 75/95 mm cups. In terms of functionality, Grunwald promises a "world first". Trunzer explains that the customers have been attaching more and more importance on space-saving rotary-type machines in the past few years as they can achieve similar production speeds as inline machines. In addition, both rotary-type and inline machines can be equipped with the pulsed light high-performance UV(C) sterilisation and thus do not need peroxide.

Grunwald will also inform about current development projects at the exhibition, such as sustainable packaging materials and energy-efficient sealing procedures.

100% reliability for delivery

Christoph Trunzer emphasises that Grunwald could even adhere to their delivery times during the pandemic. This is due to the fact that Grunwald is a family business with the possibility for a long-term orientation without external influence.



Christoph Trunzer, Sales Director Global Markets Grunwald: "We are going to show a revolutionary, innovative rotary-type machine at interpack – this is all I am allowed to say at present (photo: IDM)"

Purchase no longer takes place just-in-time but with strategic orientation which means that sufficient materials are always available from stock. The customer directly benefits from this. The considerable in-house production depth of 90% makes it easier to observe confirmed delivery dates.

The delivery time for an inline machine as shown at interpack is approx. 12 months from signing the contract. And, as Trunzer emphasises, success and reliability of delivery are mainly owed to their personnel.

For years, Grunwald has been strategically looking after the next generation of skilled personnel as up to 10% of their staff are trainees and students.

About Grunwald GmbH

The owner-managed mechanical engineering company located in Wangen im Allgäu is one of the world's leading suppliers of format flexible cup and bucket filling machines. Since the company's foundation in 1956, more than 2,700 filling, dosing and packaging machines have been supplied to the food and dairy industry and various industrial sectors of the food industry worldwide. The export quota is 90%. The number of employees increased to more than 200. Due to ground-breaking technical solutions in terms of hygiene, flexibility, rapidity, ease of operation as well as environment-friendliness Grunwald consider themselves to be the world of a true pioneer. www.the-pioneer.com

Individual solutions from Hünfeld

IDM visited Schuy + Folmeg

Even before the takeover by Folmeg Maschinenbau in 2017, former used machinery dealer Schuy had also made a name for itself as a supplier of new packaging equipment. Since then, this business has been pushed further under the aegis of new owner Udo Folmeg. Today, used equipment plays a subordinate role at the Hünfeld-based company. IDM was on site.

“We have specialised in the individual construction of small and medium sized filling and packaging lines. We are present directly at end customers and also as an OEM supplier for globally active companies such as Krones and KHS”, explains Udo Folmeg, CEO Schuy+Folmeg. Even though the latter means global presence, the graduate Mechanical Engineer and Business Economist sees the European market as main sales area.

Schuy+Folmeg maintains two locations in Germany: Eschwege with the administration and a total of six employees, and Hünfeld with 38 employees, where production, assembly and the operative business are located. Five of them work in the construction department and four in the electrical department, which is responsible for software, control, wiring and control cabinet construction. About 20 machines are manufactured each year, with the dairy and beverage industries being the most important customers. Udo Folmeg brought his foothold in the latter sector with him through his mechanical engineering company Folmeg, which he founded in 1995. All in all, Schuy+Folmeg now has more than 1,000 installed machines.

Individual machines and lines

“We rarely take on large projects because they tie up too much capital and manpower,” says Folmeg. “We much prefer manageable orders, also because we can supply more customers that way. To support our always customised production, we have expanded

*From left: Gino Abe
and Benjamin Bech
from the sales dept.
and Udo Folmeg,
managing partner
of Schuy + Folmeg
(photo: IDM)*



our mechanical production in recent years investing in CNC machines. The high level of vertical integration is also reflected in the electrical assembly; we do not outsource any work here.”

Schuy+Folmeg is a specialist in the development and manufacture of rotary and inline filling machines for different output ranges and filling products, as well as in primary and secondary packaging and special end-of-line packaging. The linear fillers such as the ultraclean SchuCup 30000 correspond to the current state of the art in all features. The 8-lane inline filler (30,000 cups/h) is format-flexible, has a cup supply magazine and control, sterilises the packaging material using UVC, doses via a CIP/SIP-capable piston valve and can be supplied with extras such as inverted lid and lift-out stations. The machine concept can be made smaller, for example with the SchuCup 18.000.

The “big sellers” at Schuy+Folmeg, however, are the rotary machines. The SchuCup7000 RL, which is also ultra-clean and format-flexible, has a capacity of up to 7,000 cups/h and comes with a cup magazine, UVC sterilisation, a free space for a pre-dosing unit and ink jet and a piston valve system as a dosing unit. The lids can be UVC sterilised and a dynamic inline mixer is also available. Smaller rotary machines such as the BF 2000 fill 1,500 to 2,000 cups/h and are ideal, for example, in farmhouse dairies. At the



René Fuchs, TURM Sahne, and Franko Orf, Schuy + Folmeg, at the clip packaging machine specially developed for TURM Sahne (photo: Schuy + Folmeg)



For Hügli Nahrungsmittel in Switzerland, Schuy + Folmeg supplied a filling system for salad dressing in portion packs with a capacity of 10,000 cups/h. Pictured: Dominik Mühlemann, Hügli, and Fank Orf, Schuy + Folmeg (photo: Schuy + Folmeg)

time of the editorial visit, Schuy+Folmeg had just delivered one such machine, with five more in the order pipeline.

The portfolio is completed with various end-of-line packaging machines. Depending on the model, the SchuPack Packer can flexibly pack up to 30,000 cups/hour and also handle multipacks, buckets, portion packs, etc. The SchuPackSTA also offers a wide range of packaging options.

In addition, there is the SchuPackSTA 10 tray erector with a capacity of up to 35 trays/min in various formats (e.g. 3x4 or 4x5) and the SchuPack Pick&Place packer with a single-lane infeed and a capacity of 7,000 cups/hour.

Schuy+Folmeg has also made a name for itself especially in the filling of buckets. Solutions include the six-lane SchuCup12000E (8,000 to 10,000 buckets/h) equipped with laminar flow, the SchuPackTA-30+GS-30 case erector (approx. 30 cases/min) and the SchuPackWA packer (3,600 - 4,200 blanks/h).

Interesting references

For Hügli Nahrungsmittel in Switzerland, Schuy+Folmeg supplied a filling line for salad dressing in portion packs with a capacity of 10,000 cups/hour. The machine has an enclosed sterile area,

a CIP-capable dosing system, cutter and membrane filling nozzle, leakage control, metal detector and pick-and-place unit. The format changeover is servo-driven.

For TURM Sahne, Schuy+Folmeg developed a clip packaging machine for handling several bottle sizes in different formations. The bottle infeed is designed with one and two lanes, the bottles have volumes of 100 ml, 250 ml and 500 ml, the formats are specified as 1x2, 1x3, 2x2 as well as 2x3, the output is 21,600 packs/hour. The magazine holds 1,500 lids.

Schuy+Folmeg supplied Czech OLMA dairy with a 10,000-cph rotary filler with crate erector and combi packer. A second crate erector has just been delivered.

Even though the company is not feeling the effects of inflation and recession because it supplies the beverage and food industry, the delivery time had to be increased from three to six months because of the difficult supply situation with core parts such as machine controls. Udo Folmeg thinks little of rapid growth. He prefers to keep the processes manageable, also in the interest of the customers, and to invest permanently in the further development of the machines instead of rushing for market shares.

Future Proteins – Sustainable processing and packaging

Conference organised by MULTIVAC and Handtmann

MULTIVAC and Handtmann held a joint event entitled “Future Proteins” at the beginning of February. The conference, which included live demonstrations of machines and lines and guided tours of both companies, attracted around 200 participants from 20 countries to Wolfertschwenden, Germany. IDM summarises some of the key messages from the event.

Dr Tobias Richter, CSO MULTIVAC, pointed out that in the last 15 years the situation for manufacturing companies has completely changed and sustainability has become the focus of all activities. In parallel, alternative proteins have developed into an important market. MULTIVAC has so far implemented over 100 solutions for

packaging alternative proteins, also in cooperation with its strategic partner Handtmann. As Hans Heppner, Global Sales Director Handtmann, explained, his company has extensive experience especially in processing vegetable alternative products. In this context, a complete line consisting of components from both companies was shown, which has a continuous control system.

Stand-alone products are on the rise

Hanna Dammann, Innova Market Insights, illustrated the trends in the markets for protein alternatives. For 2023, it is becoming apparent that consumers will not necessarily always demand the cheapest product, but the one that gives them the best value for

Around 200 participants from 20 countries attended the Future Proteins Conference at the beginning of February



money. At the top of the consumer decision scale is health, followed by sustainability aspects, variety in the diet and taste. A special development is emerging: Products that only imitate the original better are less in favour with consumers than completely independent plant-based products. Growth rates for plant-based alternatives are now slowing and are expected to be 5 % in volume and 7 % in price this year. The most widespread demand among consumers is for milk alternatives, with 48 % turning to these products, 46 % enthusiastic about yoghurt substitutes, 44 % for plant-based cheese analogues, compared to "only" 38 % for meat alternatives and 34 % for fish. This is reversed by the number of new product launches, which grew by 64 % globally for meat substitutes between 2018 and 2022, while only 39 % more innovations were observed in the dairy alternatives sector. Europe leads the way with 58 % of all global new product launches, with dairy drink alternatives being one of the main areas of focus. While pea protein is already established in the dairy alternatives segment, potatoes and chickpeas as well as lupine and hemp are likely to move into the focus as raw material in the future.

Don't promise too much

Kirstal Golan, Business Division Director New Protein Solutions at Baywa, was critical. Manufacturers of alternative products must not promise too much, especially when it comes to sustainability. Highly processed products and long lists of ingredients must be replaced by healthy products with a clean label. Products whose raw materials are produced regionally are the best link to sustainability. Overall, Golan says, the quality of plant-based products has already improved significantly in the last 18 months.

Criteria for failure

Julian Mellentin of New Nutrition Business, a British consultant widely known in the international food industry, analysed why well-known brands like Beyond Meat or Oatly are doing relatively badly at the moment. First of all, the flood of information creates a completely diversified knowledge situation among consumers. This in turn translates into ever greater segmentation of the markets. Per se, there is still relatively little interest in plant-based protein alternatives. Despite a global investment of US\$12 billion since 2012 in the development of meat alternatives, the category is losing 15 % in sales and 12 % in revenue. Beyond Meat spends \$1.82 for every sales dollar, compared to \$1.50 for Oatly. Both companies made serious mistakes, mainly because they immediately went into mass production while production costs were still significantly higher than that of the originals. Moreover, neither has been able to substantiate their sustainability claims so far. Mellentin: "Above all, you have to have patience in this business and you must not overestimate the market volume that can be tapped".

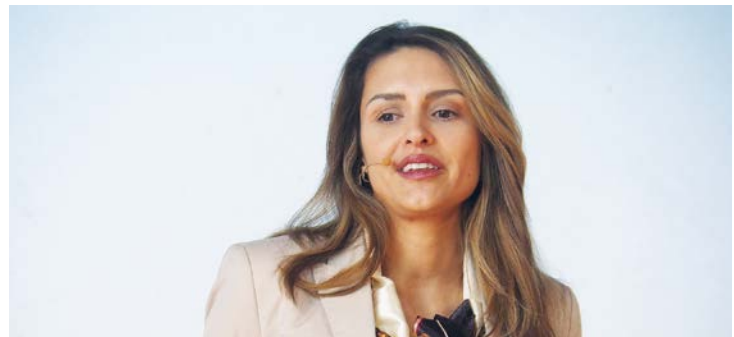
In the meantime, it is mainly products that are familiar to consumers, come with rather neutral statements about the protein and align themselves with consumer preferences that are celebrating success.



Hans Heppner (left) and Dr. Tobias Richter pointed out the strategic partnership between Handtmann and MULTIVAC



Julian Mellentin, New Nutrition Business: You have to be patient in the business with plant-based alternatives and you must not overestimate the market volume that can be developed



Kirstal Golan, Baywa: Manufacturers of plant-based alternatives must not overpromise under any circumstances



Prof. Thilo Hühn from the University of Applied Sciences Zurich recommended focusing on the utilisation of the entire plant in the production of protein alternatives and to work less with purification and extraction processes, as these consume an unnecessary amount of energy

Vitafoods 2023

9 – 11 May, Geneva, Switzerland

Launched in 1997 to meet the growing demands of the emerging nutraceutical industry, Vitafoods Europe will open its gates on 9-11 May in Geneva, Switzerland, again. This year's gathering will see a truly global audience across four sectors covering the entire nutraceutical supply chain, from beginning to end. The exhibition, conference and networking events form a perfect ecosystem for businesses to thrive and forge long term collaborations, enrich their understanding and initiate critical conversations around the most pressing issues concerning the health and nutrition industry.

Networking and events

Vitafoods Europe connects a quality senior audience, maintaining an 8.1/10 likelihood of attendance. Networking events such as the 5k Run, Yoga Wellness and the Community Breakfast present opportunities for customers to engage closely with the Vitafoods brand and come together around shared interests within the health and nutrition space. Free-to-attend show floor features add significant value to visitors, providing them with insights into the latest industry trends.

R&D

At the Future of Nutrition Summit at Vitafoods Europe, Dr Evan Berk, Global Director of Nutritional Sciences and Innovation at Unilever, Health & Wellbeing, will discuss current trends and recent scientific breakthroughs that aims to deliver a better future for health and wellness. Technological innovation, the increasing consumer mindset shift to health as a lifestyle pursuit, and a need for formulators to differentiate themselves from the competition is driving this sector forward.

These are the four sectors covered by Vitafoods:

Ingredient & Raw Material:

From Algae to CBD and beyond, the Ingredient & Raw Material show area showcases innovative and trending ingredients and raw materials.

Branded Finished Products:

Here are the latest, most innovative functional foods and beverages in the market.

Services & Equipment:

The Services & Equipment area gives access to technical and regulatory advice.

Contract Manufacturing & Private Label:

Kick-starting or growing business with market-ready private and white-label business opportunities.

Vitafoods™
Europe



Learn more at vitafoods.com

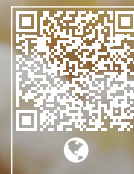


Winning white brined cheese: What's not to enjoy?



Boost taste, texture and shelf life with our science-based solutions

White brined cheese like Feta brings its own unique delights to consumers, but it also comes with equally unique production challenges for manufacturers. Maintaining a clean taste and consistent texture while maximizing shelf life and minimizing food waste - it isn't an easy job. But now it's all possible - and more - with our proven family of solutions for white brined cheese. Enjoy it all.





(photo: shutterstock)

Next-level white brined cheese

Better taste, texture, shelf life and production efficiencies



Author: Gert van den Hoven, DSM

Tasty, crumbly and incredibly versatile – it’s easy to see why white brined cheeses like feta are so popular. These cheeses, ranging from feta to beyaz peynir, now represent 11% of the global cheese – with global feta-type cheese consumption alone growing at around 5% annually.

However, getting the right taste, texture, shelf life and production process for these popular cheese varieties can present challenges for manufacturers. DSM’s complete portfolio of solutions for white brined cheese can help cheese makers and their consumers enjoy it all.

What’s driving growth in the brined cheese market?

White brined cheese is matured in brine in a sealed environment and can be soft or hard, depending on the variety and the type of milk used. Feta-type cheeses are the most popular brined variety and these are largely produced in Greece, Turkey, the Balkans, Germany and Scandinavia.

White brined cheese is an incredibly popular ingredient because of its versatility. It’s often sold in pre-packaged salads and as a ‘salad cheese’ in retail outlets. It is also used heavily as an ingredient in home cooking and part of its rising appeal can be attributed to people preparing and cooking more food at home since the pandemic and resultant rise in home working. Many brands are tapping into this market by offering ready-to-use cubed and pre-seasoned feta. Just as white brined cheese’s uses are broad, it also enjoys a global consumer base. It is consumed heavily in Iran and the Middle East and has a growing following in Europe and North America. However, while white brined cheese has a variety of uses, there are some constants.

Consumers of white brined cheese want a product that delivers a clean and consistent taste and texture across its entire shelf life. And products that offer an extended shelf life will have an even bigger appeal by helping households minimize food waste. In short, consumers want to enjoy it all and manufacturers want

White brined cheese is an incredibly popular ingredient because of its versatility (photo: shutterstock)



There are specific solutions in the DSM portfolio for reducing bitterness levels and improving texture including (photo: DSM)



a consistent output of high-quality cheese – which is why at DSM we offer a complete portfolio of solutions for white brined cheese that delivers just that.

Getting the taste and texture right

Getting the right taste, texture and shelf life for white brined cheese varieties can present challenges for manufacturers. And this is where DSM can help. First of all, DSM focuses on getting the taste just right. A clean, consistent and slightly salty taste is critical when creating white brined cheese. This is what matters most to consumers and is what will keep them coming back for more. But balancing these taste needs against an extended shelf life can prove challenging.

To achieve the winning taste profile, DSM starts with its broad range of cultures and enzymes, including lipases and bioprotective cultures, that can impart everything from mild and clean tastes to pungent and acidic notes. There are specific solutions for reducing bitterness levels and improving texture including Delvo® Cheese range and Accelerzyme® CPG which has the added benefit of accelerating ripening time while being highly effective on bitter peptides. These cultures and enzymes also help to maintain a consistent pH and prevent post-acidification – both of which are key to improving the texture in white brined cheese and ensuring a clean taste profile.

But the taste offering doesn't end there. DSM is a solutions provider. Its team of experts can support with a wealth of knowledge and advice, tailored to specific challenges.

Shelf life without compromise

Once taste and texture are perfected, one can focus on ensuring consistency across an extended shelf life. This is where Delvo® Guard bioprotective cultures shine. This range of cultures have been proven to extend the shelf life of white brined cheese by up to 30% without impacting the cheese's taste or texture.

DSM recently added two new cultures to this family to help cheese makers balance shelf life against taste and texture even

more effectively. If extending shelflife to its maximum is the goal, the new Delvo Guard 302 and Delvo Guard 304 cultures provide the most bioprotective properties. With the option of these Delvo Guard cultures, manufacturers can have greater control over post-acidification, texture and flavor development in various applications. The main takeaway for cheese makers, DSM puts the control firmly in your hands.

Furthermore, in extensive tests, these two Delvo Guard cultures showed a noticeable reduction in the amount of yeast and mold growth when compared to market references under similar time and temperature conditions.

Boosting production efficiency and yield

With taste, texture and shelf life all secured, we can turn our focus to achieving an efficient and worry-free production process. DSM takes a complete view of product development and commercialization to make sure customers can provide the best possible food and drinks to consumers.

There is a portfolio of solutions to help cheese makers reduce the impact of bacteriophage contamination – something that can be incredibly costly to producers when factoring in loss of product and production down time. DSM's range of phage-robust cultures are an important tool to protect against contamination and enable a more consistent production process. Phage-robust cultures and a phage-rotation strategy can be further supported with coagulants like Maxiren® and Fromase® for even greater production consistency.

Cheese making is as much an art as it is a science and, ultimately, white brined cheese production is a balancing act in taste, texture, shelf life and production efficiencies. DSM's experts and ingredients are here to help you achieve the right balance for your product by enabling more effective and resource-efficient food production that helps you deliver a delicious and nutritious product – that stays safer, and tastier, for longer.

Boosting gut health

Prebiotic chicory root fibres add value to dairy products

For a long time, the gut was considered to be solely about digestion. Today, we know that this idea is too restrictive. The gut acts as an essential part of the immune system, fighting off pathogens and even influencing our emotions through the “gut-brain axis”. And it seems that research in this field is only just getting started.

Today, there is growing understanding of the role that the gut plays in shaping our health. As a result, consumers are increasingly aware of diets and foods that can support this important organ. This trend is also evident in the food industry, with “nutrition for the gut” listed as one of the ten most important topics in the sector’s 2023 trend report.¹

One effective way to strengthen gut health is to regularly add fibre to the diet. As non-digestible food components, dietary fibres reach the colon almost intact. According to the German Nutrition Society (DGE), adults should consume at least 30 grams of fibre per day. However, in practice, the majority of the population falls significantly below this recommendation. Fibre-enriched products can help bridge this gap, especially if they become part of the daily dietary routine and can be consumed quickly and easily.

Fibre with prebiotic properties

For example, yogurts or milk drinks bring practicality to everyday life, serving as a quick snack on the go or at the desk. Dairy products, in particular, have a suitable image for fibre enrichment, as they are considered natural and healthy by conscious consumers. By emphasizing their benefits for gut health, manufacturers can add even more value to these products.

Producers choosing to enrich their products with fibre have a wide range of options. While all dietary fibres stimulate the gut, their mode of action varies significantly. Fibres with prebiotic prop-

Chicory root provides the plant-based prebiotics inulin and oligofructose (photo: BENE0)



erties offer scientifically proven health benefits. They serve as food for the “good” Bifidobacteria in the gut, thereby strengthening their growth and weakening the influence of harmful bacterial strains. Additionally, the fermentation process of chicory root fibres in the gut leads to the creation of short-chain fatty acids as primary end products. These serve as energy suppliers for the intestinal cells and promote the protective function of the intestinal barrier.

Less fat and sugar – same taste

BENE0, one of the leading manufacturers of functional ingredients, extracts two such prebiotic fibres from the root of the chicory plant: inulin and its shorter chain component oligofructose. In addition to their effect on the gut, they have other properties that are beneficial in the development of a healthy, calorie-reduced product.

Orafti® Inulin can be used to reduce the fat content in foods such as desserts, ice cream or yogurt. Inulin provides around 2 kcal/g – less than a quarter of the calories of fat. Long-chain inulin



Inulin offers creaminess in dairy products and their plant-based alternatives (photo: Monstar Studio/Shutterstock)

is particularly suitable as a fat substitute. Its molecular structure and low solubility allow for the creation of a fat-like texture in water-based systems under shearing. The fat-reduced end product offers the desired creamy mouthfeel, without negatively affecting the taste of the final product. Inulin and oligofructose can also partially replace sugar in end products. For example, using Orafiti Oligofructose in an ice cream recipe can reduce the sugar content by 30 per cent without loss of flavour. Such a partial exchange of sugar or other high glycaemic carbohydrates through dietary fibres as inulin or oligofructose also reduces the glycaemic response of foods. As confirmed by an official 13.5 health claim authorised by the European Commission Regulation, products containing Orafiti Inulin and Oligofructose cause blood sugar levels to raise less after a meal compared to highly glycaemic sugars.

Recipes with health benefits

In order to test the suitability of BENEО ingredients for different applications, the BENEО-Technology Center regularly develops sample recipes. The company's prebiotic chicory root fibres, for instance, were used to develop a plant-based almond juice. Inulin matches well with the natural almond flavour in the recipe, as it has no off-taste, while contributing to a creamy mouthfeel. The almond juice is designed in such a way that not only its positive effects on gut health can be highlighted on-pack by means of an EU health claim, but also its low sugar and high fibre content.

Inulin and oligofructose from the chicory root are the only scientifically proven plant-based prebiotics. They have been extensively studied for more than 25 years. A recent systematic review with meta-analyses confirmed that they promote significant growth of bifidobacteria in the gut.² The improved gut activity was observed in healthy adults, for example, through increased stool frequency. Other studies also demonstrate favourable effects of the prebiotic fibres on weight or blood sugar management.

BENEО's Orafiti Inulin and Oligofructose are also available in organic versions, which promise the same sensory, nutritional and technological properties. Furthermore, all of BENEО's prebiotic fibres are non-GMO and do not carry an E number.

Recipe: High fibre almond drink

Ingredients (%w/w)	Recipe
Water	91
Almond paste	5
Orafiti® Inulin	2
Sugar	1
Minor ingredients (e.g. emulsifier, rice starch, flavour, sea salt, stabiliser)	q.s.

- <https://www.nutrition-hub.de/post/trendreport-ernaehrung-10-top-trends-2023>
- 1 Nagy DU, Sándor-Bajusz KA, Bódy B, Decsi T, Van Harselaar J, Theis S & Lohner S (2022) Effect of chicory-derived inulin-type fructans on abundance of Bifidobacterium and on bowel function: a systematic review with meta-analyses. *Critical Reviews in Food Science and Nutrition*. Published 14 July 2022, DOI: 10.1080/10408398.2022.2098246

The 100th Coagulator

ALPMA and Hellenic Dairies – a long-term partnership

The ALPMA Coagulator has long proved its worth in the production of semi-hard, white and soft cheeses all over the world. The high-performance system processes up to 50,000 litres of milk per hour – with the best quality and optimum yield. The Coagulator is the only continuous cheese curd preparation system in the world. The exact size of the curd and its gentle processing ensures maximum process consistency with minimum losses. Some cheese dairies have several of these highly efficient lines in operation, including Hellenic Dairies in Greece. They recently installed the 100th Coagulator manufactured by ALPMA. IDM spoke to Stelios Sarantis from the owner family.

Hellenic Dairies, previously named as TYRAS, has been working with the Coagulator in the production of traditional Feta since 2002. At the main plant in Trikala, located in the heart of Thessalia, the Coagulator replaced a production system based on manually operated vats. The company later installed another Coagulator at its Romanian subsidiary Fabrica De Lapte Braşov, and the third Coagulator [the 100th supplied by ALPMA] went into operation in Trikala in spring 2022 forming an additional production line.

Capacity had to be increased

According to Stelios Sarantis, the €25 million investment, along with the peripheral equipment such as clean room, air conditioning, etc., was necessary because Hellenic Dairies urgently needed to increase capacity to better serve its markets. The decision to expand was made in mid-2020, ALPMA started delivery in autumn 2021, and full operation started in April 2022. With the new Coagulator, the Trikala cheese dairy can now produce about 180 tons of Feta per day and better meet the seasonality of their sheep and goat milk supply of around 90 million kg.



"We appreciate the good quality of the equipment and the service provided by ALPMA" Stelios Sarantis

The new Coagulator line can produce of 5,000 kg cheese per hour, fully automatically. All processes up to palletizing via a robot have been fully automated by ALPMA. The cheeses are also automatically removed from the moulds, placed in tin cans, filled with brine and sealed.

Stelios Sarantis emphasizes his company's long cooperation with ALPMA and his appreciation for the good quality of the equipment and the service provided by the supplier. Whenever investments are made in the cheese dairy, Hellenic Dairies seeks to commission ALPMA.



Hellenic Dairies has recently installed the 100th Coagulator supplied by ALPMA

The close cooperation between the two companies is expressed in several projects:

- 2002** First Coagulator (4.000 kg cheese/h) and curd filling for the Trikala plant, cheese of 2 kg in size 220 x 110 mm.
- 2004** Complete mechanization of the Feta production in Trikala.
- 2010** Second Coagulator for white cheese (5.000 kg cheese/h) and complete mechanization at Lapte Braşov in Romania, cheeses of 2 kg in size 220 x 110 mm
- 2015** Hard cheese line for TYRBUL in Bulgaria (22.000 l/h), round and square cheeses, curd filling, presses, mould magazine, cleaning systems, automatic demoulding
- 2019** Cutting and packaging line for round, fixed-weight Feta portions in cans at Trikala (4.800 cans/h, cheeses of 500 and 1.000 g) with automatic insertion of the cheeses into cans, brine dosing, can sealing, cleaning; third Coagulator
- 2023** Fourth Coagulator for Halloumi production in Cyprus (3.000 kg cheese/h), world's first automated production of folded Halloumi cheese

Besides this ALPMA supplied 13 CUT lines for fixed-weight Feta portions (220 and 400 g), two segment cutters for hard cheese and a CC Flex cube cutter for Feta (13 x 13 mm).

Focus on exports

Hellenic Dairies is also affected by cost inflation. For more than a year, Stelios Sarantis has been observing that the procurement prices for packaging, energy and the milk keep rising. Hellenic Dairies is trying to maintain its profitability despite this negative scenario and to find a balance between margin and product prices. As growth in the Greek market is limited, the company has been focusing on exports for years. In 2021, the export share of sales exceeded the domestic business for the first time.

Hellenic Dairies is present in almost 50 markets. Production takes place in Greece, Bulgaria and Romania, and foreign sales are managed through own subsidiaries in 12 countries, including Sweden, the UK and Germany.

Hellenic Dairies

The predecessor of Hellenic Dairies is the TYRAS cheese dairy founded in 1985 in Trikala, Greece. Initially, only Feta and semi-hard cheese were produced. In 2000, the acquisition of the Olympus dairy gave the company the opportunity to strengthen the branded sales and broaden its product range.



With the new Coagulator the Trikala cheese plant produces up to 180 tons of Feta per day

Hellenic Dairies produces traditional Feta with state-of-the-art technology

Hellenic Dairies includes the following companies

- » Hellenic Dairies S.A., Kliafas S.A.
- » TYRBUL in Bulgaria
- » Fabrica De Lapte Braşov in Romania
- » as well as the various subsidiaries under the Hellenic Dairies umbrella.

This was followed in 2004 by the foundation of TYRBUL cheese dairy in Bulgaria and, as so far final expansion step, the Fabrica De Lapte Braşov dairy in Romania was built on a greenfield and expanded to become the industry leader in the country. Today, Hellenic Dairies processes a total of 200 million kg of cow's milk and 100 million kg of sheep's and goat's milk. It employs 1,700 people, 550 of them at its headquarters in Trikala. Turnover in 2022 is estimated to be around €480 million.

Hellenic Dairies is currently expanding to Cyprus. A new Halloumi cheese dairy is being built there. In contrast to established Halloumi producers, the fully automated operation is scheduled to start in the first half of 2024. An investment of about €45 million will be made.

GRUNWALD Hygienic rotary filler

NEWS

In order to meet the demand for maximum flexibility and the increasingly smaller batch sizes required by the markets to an even greater extent, Grunwald has further developed its rotary cup fillers accordingly. The result of this development will be shown at interpack as a world first which should especially attract the visitors from the dairy industry: an ultraclean (UC) rotary-type machine which shows striking features with its flexibility, space requirements reduced to a maximum as well as with its technical specifications in terms of hygiene. Due to this development work small batches can now be produced efficiently and with consistent quality on this machine – in the past this was only possible with high-performance cup filling machines. Further details will be disclosed to the visitors at the interpack stand in hall 6/B01.



NEWS

Reformulated products need carefully balanced recipes (photo: Hydrosol)

Sugar and fat reduction Authentic taste with reformulated products recipe

If foods, especially convenience foods, are to taste good, new solutions are needed for fat and sugar reduced products. Hydrosol has developed stabilising and texturing systems specifically for dairy products and deli foods.

To get the right sweetness, Hydrosol uses conventional sweeteners or products like stevia. Natural flavourings round out the flavour profile. Hydrosol works closely with sister company OlbrichtArom, which has developed a "sugar booster" especially for reduced-sugar products.

Fermented milk products can be readily reformulated to reduce sugar and fat. A stabilising system makes it easy to produce puddings that are sugar-reduced, low-fat and fibre-enriched, as well as lactose-free and micronutrient-fortified. A clean label system for ice cream forms the basis for a reformulated product with 30 percent less sugar.

In the cheese category, Hydrosol has developed a stabilising system for "squeezeable" processed cheese preparations.



NEWS

The VF 800 vacuum filler generation from Handtmann can be equipped with the "Handtmann Monitoring Function" (photo: Handtmann)

Handtmann

Quality control in production processes

The VF 800 vacuum filler generation from Handtmann offers a wide range of solutions for quality control and ensuring quality standards in food processing such as dairy productions. With the "Handtmann Monitoring Function", the VF 800 monitors the situation in the feed system on the basis of pressure, temperature, vacuum and drive load and reports potential causes of impaired quality in good time via the control system of the VF 800 and the optionally available warning lights.

The "Handtmann Monitoring Function (HMF)" is a very practical solution whose basic function is the automatic parameter monitoring in the production process. Rejects are often only discovered after completion of a product. The delay between filling process and quality control may also result in a large and correspondingly expensive quantity of rejects. The Handtmann Monitoring Function effectively helps to avoid such rejects as it signals already during production if quality-relevant production parameters are undercut or exceeded. The warning is clearly and precisely indicated on the screen of the monitor control. If, for example, the filling product temperature were 3.5 °C although a filling product temperature of 2.5 °C was set, the machine would issue a warning. Now the operator is given the flexibility to decide that production should continue by actively confirming the "excessively low temperature" or to stop the process and take corrective action. If no action is taken, the machine will stop automatically after 30 seconds. In addition to issuing the message via the monitor control, an optional signal light can be used on the VF 800 vacuum filler. In case of deviations from the defined upper and lower limits of the production parameters, the signal light lights up orange and thus warns the operator of the current status. If no action is taken in time, the machine stops automatically and the signal light indicates the machine stop in red.

Waste water becomes process water

Sachsenmilch has developed an own solution

Sachsenmilch Leppersdorf has been working intensively for 20 years to reduce both the amount of wastewater and the amount of fresh water required. In addition to purely process-related water savings, three major projects have been realised so far, the latest in the series being the treatment of purified wastewater to process water quality.

Initially, Sachsenmilch relied on the reuse of RO permeate from membrane filtration of whey and milk. The RO permeate, ultimately water with a lower hardness, is now mainly used for cleaning and production processes in whey processing.

This was followed by the treatment of vapour condensate. In Sachsenmilch Leppersdorf's vapour treatment plants, the vapour passes through a biological purification stage and then, through a combination of UF and RO, is again obtained as RO permeate, which complies with the parameters of the German Drinking Water Ordinance. In the treatment of the vapour condensate, a process water of drinking water quality is thus obtained from a residue of whey processing, i.e. a foodstuff, which can be used again in the food process.

The third project was about the treatment of purified wastewater for use as industrial water. Here, treated wastewater that leaves the wastewater treatment plant in the direction of the receiving water is reused. In this plant, too, the treated wastewater is purified of the constituents by means of a combination of UF and RO, so that the resulting RO permeate can be used as cooling water for evaporative condensers. In this wastewater treatment, the raw material is the wastewater from the dairy with all the substances it contains, so that it can be reused as cooling water and not in production-related areas.

Through the three projects, wastewater that was previously released into the environment as (treated) sewage was returned to use as a fresh water substitute. This made it possible to start closing the water cycle and significantly reduce the environmental impact of production at the Leppersdorf site.



Challenges

The challenge with the process water plant was to obtain process water from a production wastewater that had to meet higher quality requirements and could be reused in the dairy's processing plants. With the construction of a separate wastewater treatment plant to treat the non-production wastewater, the production wastewater is separated from the other wastewater. This separation is the prerequisite for treating the production wastewater to process water.

With the construction of the process water plant, the treatment of the wastewater from production was designed to produce water of drinking water quality that meets the requirements in the food industry and can be used as process water for cleaning in individual production steps in the dairy.

The waste water treatment capacity of the entire plant is 4,000 m³ water/d (photo: Sachsenmilch)

A double-digit million euro sum was invested in Sachsenmilch's new process water plant, including the necessary structural requirements (photo: Sachsenmilch)



As one of the most modern dairies in Europe, Sachsenmilch Leppersdorf aims to be a technology leader in all areas (photo: Sachsenmilch)

The idea, concept and design of the plant were developed by the Sachsenmilch Leppersdorf team. The experience gained from previous water recycling projects was used. On this basis, the tender documents were drawn up and, as part of the normal award procedure, the process technology was awarded to the companies WAT-membrattec GmbH & Co. KG and Sülzle Kopf GmbH.

Operating experience

The plant was designed in such a way that 72-hour operation is possible without manual operation. Based on the experience gained in previous water reuse projects, the entire plant was designed in such a way that the quality of the process water could be guaranteed at all times. Only after this quality could also be confirmed beyond doubt by the company's own quality management, was the water used for cleaning. Since then, the plant has been operating stably with continuous monitoring of the water quality, which is even more closely meshed than for drinking water.

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CHEESE TECHNOLOGY

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Cheese Technology



2009

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

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Top 20 Dairy Companies 2022



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Pos.	Company	Sales US\$ bn	Change to 2020
1	Lactalis	26,7	16,1 %
2	Nestlé	21,3	2,4 %
3	Danone	20,9	20,8 %
4	DFA	19,3	1,60 %
5	Yili	18,2	31,90 %
6	Fonterra	14,8	8,80 %
7	Mengniu	13,7	24,50 %
8	FrieslandCampina	13,6	7,10 %
9	Arla Foods	13,3	9,90 %
10	Saputo	12	12,10 %
11	Unilever	8,3	25,80 %
12	Savencia	6,6	11,90 %
13	Amul	6,3	18,90 %
14	Sodiaal	5,9	7,30 %
15	Meiji	5,9	-1,70 %
16	Agropur	5,8	3,60 %
17	Müller	5,7	11,80 %
18	DMK	5,2	-18,80 %
19	Schreiber Foods	5,1	constant
20	Froneri	5	n.a.



Westbury front (photo: Arla Foods)

Arla Westbury dairy

481,800 kWh energy savings in critical water supply systems

Arla Foods, one of the leading players in the international dairy market, has embarked on a journey towards their 2050 target of carbon net zero emissions. The first step, however, is achieving efficiency targets of lowering carbon emissions by 63% at 60 dairies worldwide by 2030. Grundfos is an essential part of these plans.

Recently, Grundfos supplied and installed new intelligent pumps at the Arla Westbury dairy in the United Kingdom. Based on proven and validated energy measurements, Grundfos helped the site achieve savings per year of 481,800 kWh energy and 194 tons CO₂ for their ice and chilled water systems, with a return on investment (ROI) of less than two years.

“Our Westbury facility has proven to be a great place to start with the drive towards our 2030 efficiency targets, which is part of implementing our global sustainability agenda. Here, the docu-

mented successes leading to substantial reductions in energy use, emissions and costs, and improved operation can be used at new sites,” explains Mia Bredal, Director, Supply chain sustainability PMO at Arla Foods.

The situation

Arla employs 250 people at the Westbury site. Typical production figures per year are 45,000 tons of skim milk powder and up to 80,000 tons of butter under the Anchor and Arla brands. Arla’s Westbury site has pumps installed for chilled and iced water applications, process water feed and steam boiler feed. Towards the end of 2020, Westbury contacted Grundfos to help optimise their chilled and ice water applications.

The Grundfos solution

Grundfos performed energy assessments to find the actual energy consumption in the system, which involved the placing of sensors



The new chilled water NB pumps at Arla's Westbury dairy (photo: Grundfos)



George Nicholls, Arla Foods, and the new TPE pumps for the ice water system (photo: Grundfos)



Mia Bredal, Director, Supply Chain Sustainability PMO, Arla Foods: "Grundfos is highly relevant to Arla for this approach worldwide, because they are selling more than pumps and can help us meet our energy reduction targets." (photo: Grundfos)

in the system to get real data from the existing setup. The result was a detailed report that showed how optimisation and downsizing of the existing system would generate energy savings and process improvements through better control and operational modes.

"I think the fact that the report was based on actual measurements is also a real positive for us, because it was an illustration of the way Grundfos went about the survey. It was done properly and was a real positive!" says George Nicholls, Project Manager at Arla Foods.

The outcome

For the chilled water system three new NB 80-200 37 kW pumps including frequency converters and for the ice water system three new TPE 200-70 7.5 kW pumps with built-in frequency converters were installed and running within a 12-hour window.

"Grundfos clearly understood the nature of our business and the need for our continuity of running. They took the time to come and find out the preparation work required. So, work proceeded with the minimal impact onsite. For us, it was good to see as a first experience of working with them," says George Nicholls.

Partnership

Arla Foods is bringing together a global sustainability strategy with their supply chain management, to implement their 2030 efficiency targets and journey towards their 2050 target of carbon net zero emissions and improved water efficiency for better water management.

The onsite sustainability programs now ramping up at 60 sites globally, for example at Arla Westbury, are therefore not about simply swapping pumps; they are about creating a program to find energy optimisation measures and meet the 2030 efficiency targets of saving 63 % of carbon emissions.

"Arla and Grundfos have a true partnership, as the energy assessments are a collaboration between Arla's experts on site and Grundfos technicians and specialists. Other facilities will soon meet Grundfos for the first time when they turn up for the energy assessment process. Grundfos helps with tools and systems to ensure that the process is replicable, and the data comparable," concludes Mia Bredal.

GDT aims to contribute to European price discovery

Interview with Shaun McCauley, MD GDT Europe

Global Dairy Trade has established a European presence in Europe. Based in Berlin, Shaun McCauley as Managing Director GDT Europe has been given the task to grow the business of the trading platform. IDM asked him about his targets.

IDM: Why does GDT need a physical European presence?

McCauley: Over the last few years GDT, with European Energy Exchange AG (EEX), has conducted extensive consultation with dairy industry participants in Europe (both sellers and buyers), to determine how we could make GDT more available to the European market. One of the key messages received from European participants was, for example, they need readily accessible local support from us, rather than receiving this from New Zealand, with a 12-hour time zone difference. That translated to GDT having a physical presence in Europe. We are here now and available and looking forward to meeting with and working closely with our European customers, prospects, and other dairy industry stake-

holders. We also expect to have an increased presence at the various industry events held in Europe on a regular basis.

GDT's increased focus in Europe is supported by the introduction of EEX as a shareholder alongside NZX and Fonterra. This new ownership structure provides GDT with an enduring foundation in Europe and strong links to the European dairy industry through the rapidly growing EEX dairy risk management instruments trading volumes.

IDM: Wouldn't it be easier to just invite European dairy companies to take more part in GDT?

McCauley: Yes, we agree, and this is in essence what we are doing. We are proposing that more European dairy companies join the current GDT Events auction. We are making the GDT platform more attractive to European dairies by adapting it to better meet the needs of European participants. Key among these



(photo: GDT)



"For our global supply goal, we are seeking new sellers."

Shaun McCauley, Managing Director GDT Europe

enhancements is the ability for sellers to list their products in Euro and for buyers to buy those products in Euro. This is, from our perspective, ideal for serving global export markets, and the large internal European market for dairy commodities. Product can still be offered in USD alongside this. We are also introducing an additional Incoterm addressing European preferences.

An advantage of bringing European sellers onto the current GDT Events auction is that it provides immediate access to a large pool of existing and active global and local buyers.

IDM: Why did you choose Berlin as the location?

McCauley: GDT is for the time being a relatively small business in respect to the number of staff, but we provide a service that discovers objective market prices that impact every corner of the dairy industry globally. At the heart of that service is our online digital GDT Events auction platform. The service and the technology behind that is fundamental to what we do. Yet more important than our technology are our people, who operate our auctions and develop that platform. Berlin has a thriving technology startup scene based on a large pool of young, creative, highly educated and skilled people. We view expanding access to such resources as key for our future growth.

IDM: What is the trading volume GDT has with Europe, both selling and buying?

McCauley: Today, trading volumes from European sellers and buyers typically represent less than 10% of total GDT volumes. So, we are confident there is significant potential for growth for GDT in Europe.

IDM: What do you want to achieve in Europe, maybe in terms of monetary sales or tonnage?

McCauley: We are pursuing a strategic plan focused on liquidity, global supply, and our internal agility and efficiency. For our global supply goal, we are seeking new sellers from all global milk pools to provide our bidders with more choice, enabling GDT to publish credible reference prices for more products and across more regions.


Europe has one of the largest milk pools, with a very large internal market for dairy products and is also the single largest dairy exporting region globally. It is therefore one of our priorities. During our research, European dairy participants expressed interest for new channels of price discovery in Europe beyond the current mechanisms. So, we are aiming to provide what the market is asking for here in Europe.

IDM: How many employees has GDT Europe at the start?

McCauley: Two Europe-based roles have been established. I have taken on responsibility as managing director GDT Europe. I will also continue to lead innovation and platform enhancements as GDT CTO from our new European headquarters in Berlin. A new senior VP global sales, Billy Quinn, has been appointed to lead our sales function from Europe. One of Billy's priorities will be to develop and grow participation from European buyers and sellers. We expect to recruit two more people to the team in Europe during 2023. Beyond that, there is significant future potential for the team in Europe to expand.


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Farm to Fork Strategy: 2023, the year of delivery?

EDA Dairy Policy Forum 2023

"Farm to Fork Strategy: 2023, the year of delivery?" was the motto of this year's Dairy Policy Conference organised by EDA (European Dairy Association) on 8 March in Brussels. About ten speakers from all across the EU lactosphere discussed aspects of the F2F Strategy in front of an auditorium made up from over 180 representatives of policy, industry and associations, incl. two representatives from Ukraine. IDM reports from the event.

Giuseppe Ambrosi, EDA President, highlighted in his opening speech that three years after the start of the Green Deal Strategy in Europe, the EDA event had the ambition to evaluate how far industry and policy have come in terms of sustainable food production. One of the core elements of the F2F Strategy is labelling, be it origin, nutrition or sustainability with dairy farms having to combine all aspects of sustainability in their daily work.

No misleading of consumers

Food labelling in the light of F2F, was discussed by Sabine Pelsler, Head of Unit, A.1, DG SANTE, European Commission, Tomáš Slunecko, Permanent Representation of the Czech Republic to the EU, Emma Calvert, BEUC (European Consumer Organisation), and Dr Stephan Peters, NZO (Dutch Dairy Association) with MEP Paolo de Castro (S&D, Italy) opening the first session. He stressed that progress can only be achieved if the EU's sustainability project is built, science-based, together with farmers and not against agriculture in form of simple ideology. de Castro criticised some new developments in the EU Strategy, such as recycling of packaging, which was highly developed over the past years, must now make room to re-use of packaging. Or that nature has to be "restored" which sounds as an accusation to de Castro as the EU has developed the largest (and most successful) food and agriculture system worldwide. While the US is steering sustainability developments using incentives (see the Inflation Reduction Act), Europe seems to bet on sanctions only. Putting food production emissions under the roof of all emissions was a mistake, said de Castro, as technical



Giuseppe Ambrosi, EDA President: Three years after the start of the Green Deal Strategy in Europe, the EDA event has the ambition to evaluate how far industry and policy have come in terms of sustainable food production



Prof John Gilliland, Queen's University Belfast, Marlin Dammann, DMK, and milk supplier Sven Kück pointed out how dairying can become net-zero

issues are mixed with short acting gasses like methane. "We need a food labelling system," said de Castro, "that does not discriminate and allows consumers an informed choice rather than influencing them." With that he pointed out to the Nutri-Score that he thinks is misleading consumers with a simplified colour coding. The EU agrifood system is under attack, de Castro said, and requires special attention to prevent a decline of domestic production in favour of imports that are made under less strict standards than EU produce.

Current regulation is sufficient

de Castro was seconded by Tomáš Slunecko who said that according to the Czech government current nutrition labelling was sufficient and effective as consumers know how to interpret the information on food packaging. Front of pack labelling must not mislead consumers, must not disturb the principles of free movement of goods and must be based on science and verified by consumer research. A division between "healthy" and "not healthy" products is not acceptable, Slunecko said, pointing out directly to the Nutri-Score.

Sabine Pelsler reported from her work on food labelling within the EU Commission. Food labels have to be clear to form a basis of informed choices by consumers. The Commission aims at providing



MEP Paolo de Castro: While the US is steering sustainability developments using incentives, Europe seems to bet on sanctions only



Dr Stephan Peters, NZO: Both Eco-Score and Nutri-Score do not change consumer buying behaviour!



Tomáš Slunecko, CZ Representative in Brussels: Front of pack labelling must not mislead consumers, must not disturb the principles of free movement of goods, must be based on science and verified by consumer research

common rules for labelling health and sustainability information of food packaging and is in middle of assessment. The venture is most complex as science and habits in the Member States have to be taken into account and discrimination has to be avoided.

Eco and nutrition labels have no effect

While Emma Calvert representing European consumer associations seems to favour Nutri-Score labelling as it seems so simple to comprehend, Dr Stephan Peters quoted consumer research from the Dutch Nutrition Centre on the gap between consumer intention and behaviour. According to Peters, two thirds of consumers favour eco-labelling as they think it would help them to make positive contributions to sustainability. But one third of consumers mixes up Eco-Score with Nutri-Score. The few studies that examine consumer reaction to the Nutri-Score label found that it does not affect consumer choice in the slightest way. The algorithms behind Eco-Score and Nutri-Score are beautiful for academics but in reality there is no effect on purchase behaviour.

Living the Farm to Fork Strategy at farm & dairy level

The second part of this year's EDA policy conf was dedicated to sustainability achievements in real food production. Prof John Gilliland (photo left), Queen's University Belfast, has turned his lighthouse farm in Northern Ireland into a CO₂ sink. Proper soil and water management based on science and state-of-the-art measurement technology were key to this. Marlin Dammann, Lead Business Acceleration & Innovation, DMK, and dairy farmer Sven Kück (photo right), a supplier to DMK operating on of DMK's three Pilot Farms, described how Germany's largest dairy co-op and its milk suppliers are paving the way for a net-zero dairy industry – a commitment that shows the leadership of DMK in terms of environmental sustainability.

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