

I N T E R N A T I O N A L

DAIRY

March/April 2022

magazine

PROCESSING | INGREDIENTS | PACKAGING | IT | LOGISTICS

www.international-dairy.com

www.the-pioneer.com



ANUGA
FOOD
TEC


hall 7.1 - stand B010



IT'S ONE THING TO TALK ABOUT SUSTAINABILITY, IT'S ANOTHER TO DELIVER IT.



At SPX FLOW, the products we manufacture are engineered to deliver the highest level of efficiency possible. For our clients this translates into energy savings, water savings, raw material and product savings — all while keeping productivity and profitability high. Our commitment to sustainability is simple — to continue moving in the right direction. Because we must. To learn more visit spxflow.com or email learn-more@spxflow.com



**SOLUTIONS
THAT MATTER**

SPXFLOW®

Global dairy trade 24/7/365

Just a small step for a platform,
but a leap for commodity trade?



Roland Sossna
Editor IDM
International Dairy Magazine
sossna@blmedien.de
international-dairy.com

With the entry of NZX and EEX as shareholders, Global Dairy Trade (GDT) evolves from an export sales tool of more or less only a single nation, namely New Zealand, into a much more worldwide active auction platform. At least, this is what Fonterra and the two stock exchanges seem to think. But is the mere entry of the two new partners enough to promote international growth?

Remember: Fonterra's launch of an international auction website caused much furrowed brows and was even met with mistrust in the dairy community back in 2008. Many speculated that web-based trade of dairy commodities could be prone to manipulation of all kind and might only be to the advantage of Fonterra, then the largest dairy co-op worldwide bundling almost 100% of NZ dairy export.

Meanwhile, 14 years later, Global Dairy Trade has established itself as the world's largest platform for selling and buying dairy commodities. Last year, a total of 626,747 tons of product were auctioned generating a sales figure of US\$2.5 billion. Impressive. But the number of bidders is still limited to about 300 with 100 from the north Asian region. And as it seems there is not much growth to be expected in the number of bidders. Everyone who sources commodities on a somewhat larger scale seems to have joined GDT years ago. Even the relaunch of the auction website with new multi-device and multi-employee functions does not help much for further expansion.

To overcome these restrictions, GDT has developed a new concept called GDT Pulse. Simplified, this is just another auction in between the bi-weekly trade that has been taking place for the last 14 years. The start will be made with standard WMP made by Fonterra. GDT expects the more frequent auction to provide a better impression of market conditions and, of course, more liquidity for its business. It remains to be seen whether and how the dairy community will accept the concept and whether the two stock exchanges can help at all.

But why is GDT not developing a modern 24/7/365 auctioning concept? Such a platform, of course, highly automated, could respond to selling and buying requests in a second and provide the best possible feeling of market developments. Granted, office hours differ round the globe, but if a buyer could fix specs and details of the request in a well-defined process, one could let the computers handle it all and find the optimum for seller and buyer alike. In principle, this happens anyway during a web-based auction, thinks Roland Sossna.

Less sugar and fat

Plenty of fibre, vitamins and minerals



Together with SternVitamin and OlbrichtArom, Hydrosol has developed new concepts for children's products (photo: Hydrosol)

Together with sister companies SternVitamin and OlbrichtArom, stabiliser specialist Hydrosol has developed concepts for making sugar- and fat-reduced dairy and deli products designed specifically for the needs of children.

Hydrosol uses carefully selected hydrocolloids and vegetable fibre to substitute for the beneficial technological properties of sugar and fat. This gives the various final products a pleasant texture and familiar mouthfeel. Enrichment with vitamins and minerals from sister company SternVitamin provides added health value. Meanwhile, child-appropriate flavourings from sister company OlbrichtArom give foods the right taste. The networked collaboration of the three companies results in individual concepts for a very diverse range of reformulated final products, whose flavour, texture and nutritional value are aligned with the needs of children.

SACCO SYSTEM Bio-stimulation and bio-protection of plants

Sacco System has launched natural formulations for the bio-stimulation and bio-protection of plants. Sacco System's R&D has developed a large portfolio of formulations and raw materials to meet the application and technological needs of the agro-livestock sector. These

microorganisms promote plant growth, improve the well-being of the crop, with proven benefits in terms of efficacy, eco-sustainability, adaptability and yield increase, through the strengthening of all the defence and development mechanisms of the plants. saccosystem.com

SPX FLOW APV Homogeniser Water Recycling System

SPX FLOW, Inc. has launched a sustainability initiative that drastically reduces the total amount of clean water a homogeniser uses. The Homogeniser Water Recycling System (HWRS) is designed to recycle up to 97% of the water used by homogenisers. Traditionally, a continual flow of water gets supplied to homogenisers to cool the transmission oil and lubricate the plungers. The HWRS technology recaptures that water, sanitizes and chills it, then returns it to the homogeniser.

The amount of water that can be saved depends on the homogeniser, but the HWRS can save up to 7,500 m³ per year.

The HWRS can be used plug-in style with both new and existing homogenisers made by any manufacturer. It's compact – only 533.4 x 812.8 mm – and if any problems emerge, the HWRS has its own control system, including fail-safe features that would default to fresh water without causing downtime.



SPX FLOW has introduced a water savings concept for homogenisers that recycles up to 97% of water (photo: SPX FLOW)

Editorial:

3 Global dairy trade 24/7/365

Cover Page:

32 The world of a true pioneer

Sustainability:

14 Dairy and carbon farming

FMCG Gurus Column:

16 The Rise of Dairy Alternatives

IDF Column:

46 IDF Dairy Innovation Awards

Events:

8 Anuga FoodTec 2022 preview

28 Vitafoods 2022

Ingredients:

21 Better cheese, together

36 Lipases from mushrooms

Packaging:

40 Naturepak Beverage acquisition completed

Technology/IT:

6 Not a drop wasted

18 State-of-the-art technology for a traditional creamery

24 Correct air conditioning

26 Robotised cheese ripening warehouse

41 New head office

42 Foaming and aroma compounds

EDA Column:

48 The New Policy Framework for European Dairy

Columns:

4, 17, 31, 45, 47 News

31 People

50 Supplier directory

51 Imprint

51 Preview IDM May/June 2022

“Let’s mix up something good!”



Balanced milk drinks are trending. With Hydrosol’s Stabiprime functional systems, you can make reduced-sugar and reduced-fat milk mixed beverages that are guaranteed to promise full enjoyment.

- **Pleasant mouthfeel with less fat and sugar**
- **Stable formulation**
- **Carrageenan-free solutions available**

hydrosol
We texture taste.

Not a drop wasted

ReWork at Emmi

With a turnover of around 3.7 billion Swiss francs, the tradition-rich company Emmi is the largest dairy processor in Switzerland. Emmi has always been aware of the accompanying responsibility for employees, society and the environment – and acts accordingly in a sustainable manner. One success story is the ReWork process at its Suhr location. Using a WEIMA PUEHLER G.300 ReWork draining press, overfilled or underfilled milk cartons are automatically opened and emptied in order to return the recovered milk to the production process. The result: an efficient resource cycle.

At the largest Emmi location in Switzerland, in Ostermundigen, they have been familiar with PUEHLER draining and compressing technology for over 20 years. Thanks to the successful collaboration, Emmi is relying on WEIMA as a partner for its new ReWork system with a PUEHLER press as a key component at another large location, namely in Suhr, where milk, cream and butter are primarily produced.

Deputy Site Manager Hans-Peter Steuri explains: "We process around 190 million liters of milk and about 60 million liters of cream. Before using the PUEHLER press, we had to manually open every full piece of waste packaging. That was hardly productive. With WEIMA, we have finally found the right partner for our task."

Steuri aptly described the stringent demands that the new PUEHLER ReWork press meets: "As a food manufacturer, hygiene is the be-all and end-all. WEIMA machines are user-friendly to maintain, have CIP cleaning and comply with strict hygienic design specifications. In addition to the high throughput, the WEIMA system requires significantly less space than those of other providers – a clear advantage for us."

Actual figures reflect the productivity of the WEIMA PUEHLER G.300 ReWork: in the event of an accident, the machine empties and compresses more than 3,000 liters of liquid per hour (with 1 liter cartons). The press is used for a throughput of approx. 15,000 units per week. Generally, most waste (approx. 90 percent) is process-related and accrues when the filling operation is stopped or restarted. In normal operation, the press processes the waste from the last 24 hours within four hours.

Automated drainage operation

Up to 20 different employees operate the ReWork system during the week. In order to further automate the processes, the machine loading takes place via a compact lifting and tilting device. Like the entire machine body and the discharge conveyor, it is made of stainless steel. The milk cartons collected in plastic boxes are then transported into the large hopper of the WEIMA PUEHLER



Emptied milk cartons



G.300 ReWork. At regular stroke intervals, the milk cartons are then pressed horizontally in the pressing channel by a pressing cylinder moving against a press plate lowered for the process. This drains the packaging and simultaneously compresses it. A major advantage: the machine can be used flexibly. No conversion for different packaging sizes or types is necessary.

The milk first flows through a round-hole screen into the collection tray under the press channel before it is pumped out into large stainless-steel tanks. With the next press stroke, the emptied packages, now formed into manageable compressed disks with a diameter of 300 mm, are transported away via a discharge tube. The residual moisture of the milk cartons is minimal due to the

compaction. The contents have been cleanly separated from the packaging. Both material flows can be flawlessly processed. In the case of the packaging, this means: 100 percent recycling at Emmi.

Partnership on equal terms

As soon as the production waste from the last shift has been processed, fully automatic cleaning, or CIP (Cleaning in Place), follows. Hans-Peter Steuri is very positive about maintenance: "The WEIMA PUEHLER G.300 ReWork is very accessible and clearly designed. This makes maintenance and cleaning easier for us. As a partner, we feel very well supported and are provided expert advice by WEIMA. Their adherence to deadlines is exemplary. We can really always rely on that."



Visual inspection of draining and compressing process



WEIMA PUEHLER G.300 ReWork press with hydraulic unit and control cabinet at the Emmi plant in Suhr, Switzerland



THE
ALTERNATIVE
FOR HIGHLY SENSITIVE BEVERAGES

WILL SOON BE THE NEW STANDARD.

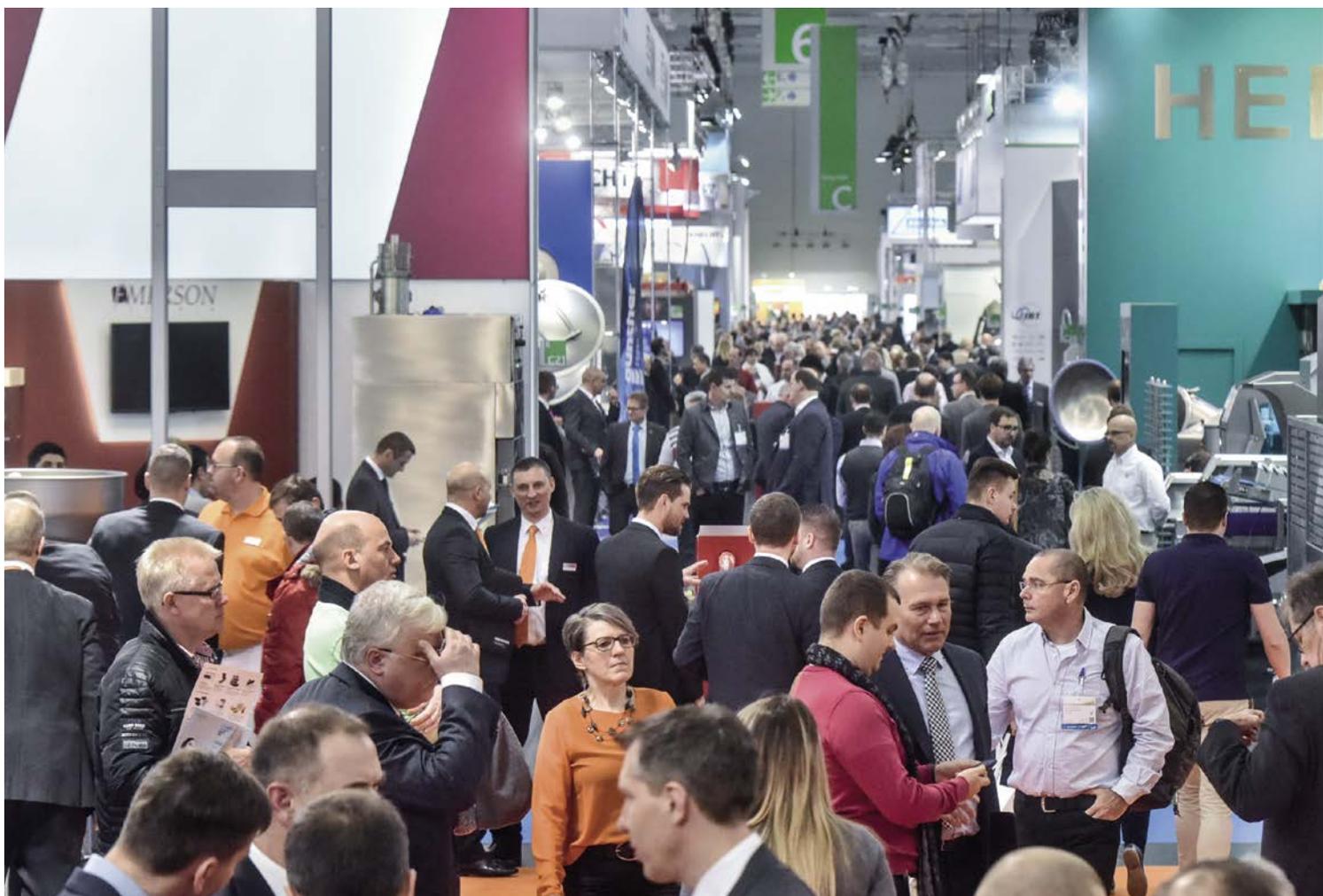
The KHS system for the milk market: aseptic filling in PET.



Maximum possible safety for the most sensitive beverages, a higher output capacity, and customizable bottle shapes: all this makes PET the better alternative for milk beverages. Compared to beverage cartons, it is also lighter, as our new 1.0-liter PET bottle for milk and mixed milk beverages weighs just 20 grams. dairy.khs.com

Anuga FoodTec 2022

Efficient solutions for the food industry



Faster, more flexible, more sustainable – the food industry is facing numerous challenges and is setting out to produce in a more resource-friendly way. Renewable energies and their decentralised generation are providing additional momentum. While climate policy goals are becoming more demanding, efficiency regulation at the EU level is also evolving.

Food producers who want to ensure their security of supply will find innovations at Anuga FoodTec from 26 to 29 April 2022 with which they can reorganise their energy efficiency. This shows that energy considerations are already being taken into account to an ever greater extent in the design of machines and systems – and all innovations are always linked to the aspects of digitalisation.

Product-friendly and hygienic filling

Whether filling, labelling or packaging, manufacturers of liquid foods will find customised solutions for every process step and every type of container at Anuga FoodTec. Exhibitors at the leading international supplier fair for the food and beverage industry provide a whole range of innovations for higher efficiency, greater ease of use and optimum product safety. Added to this is the rapidly growing number of formats, with which the demands on the flexibility of aseptic filling systems are also increasing.

Updates enable the machines in the beverage industry to adapt to as many different containers as possible and to fill different products. Step by step, plant manufacturers are network-



(photo: KölnMesse)

ing the production processes with the help of digital and smart technologies so that machines communicate and work together more efficiently. In terms of product safety, the solutions on show at Anuga FoodTec 2022 represent the latest in aseptic technology. Depending on requirements, they can handle wet or dry sterilisation and operate in the high or low performance range.

A whole series of events will accompany the fair, including "Starting points for climate neutrality in the food industry" on Tuesday, 26.04.2022, 11:50 a.m. – 1:20 p.m. in Hall 6, Stand A 100/C 129. Further information, exhibitor list and event and congress programme are available at www.anugafoodtec.de.

Below you will find initial information about exhibits and exhibitors at AnugaFoodTec 2022.



My ERP. Covers what my business needs.

Efficiency, transparency, flexibility – this is more essential than ever. IT will be the key to meeting your challenges. ERP, MES, traceability, or intelligent planning software: the CSB-System is the comprehensive solution for dairy companies. It enables you to optimize your production processes immediately, laying the foundation for the future digitization of your entire plant.

Find out more about
our solutions for dairies:
www.csb.com





The new GEA VARIVENT Mixproof valve type MX offers innovative technologies that go far beyond previous requirements (photo: GEA)

GEA: New generation of valves

GEA is launching the mixproof double-seat valve Type MX from the GEA VARIVENT family. With advanced process components such as the new "MX" valve generation, GEA supports companies that aspire to play a pioneering role in product safety.

GEA has designed the VARIVENT MX with elements that keep products from mixing with the cleaning liquid, even under exceptional loads. The cavity chamber is fitted with a vacuum self-drainage system and balancers on both valve disks. For maximum physical safety, GEA makes use of the Venturi effect: This is created by the special shape of the flow channels, which causes a vacuum on the opposite seal during lifting, preventing pressure increases. As a result, no cleaning liquid can enter the opposite pipe carrying the product while a valve seat is being lifted or cleaned, even if a seal is defective.

GEA has equipped the valve disks in both pipelines with balancers. This makes the closed valve resistant to water hammers up to 50 bar in the upper and lower pipelines. The new MX valve type also has an integrated balancer cleaning device.

To ensure maximum control, GEA's hygiene concept includes the entire valve unit, including the control top. By means of the GEA T.VIS control top, GEA integrates the double-seat valves into the automation concepts of the units. In this way, the operator can monitor the exact switching position of the valve at any time and be fully aware of the valve functions. This makes the processes even more reliable.

MULTIVAC will show integrated lines for processing and packaging (photo: MULTIVAC)



MULTIVAC: Integrated processing and packaging solutions

MULTIVAC will be presenting its wide range of innovative processing and packaging solutions for the food industry. The focus will be on integrated lines, which enable the widest range of food products to be processed and packaged cost-effectively and sustainably. Other highlights will be a presentation of the company's digital products, as well as its services in the areas of packaging consultancy and after-sales care.

Some of the lines to be shown at the trade fair will be networked, so that they can be used with the digital MULTIVAC Smart Services, as well as being completely controlled from one point via MULTIVAC Line Control.

A high-output line with slicer and thermoforming packaging machine will be presented as an example of the automatic slicing, infeeding, packaging and labelling of sliced vegan products. Since modules such as the portion loading conveyor and cross web labellers are completely integrated into the packaging machine, the line offers the facility for optimising the space requirement. Thanks to the use of the spray system known as MULTIVAC Sustainable Liquid Interleaving, it is not necessary to have paper or film as interleaves. The thermoforming packaging machine also enables the optimum packaging material consumption to be achieved.

The specialist packaging company will be presenting its MULTIVAC Retrofit modernisation service, using a thermoforming packaging machine from a previous generation, which has been converted to the current technology and equipped with additional functions to meet the tasks and market demands of today.

Handtmann will show a complete solution that covers all process steps from filling and portioning to insertion into packaging from a single source (photo: Handtmann)



As one of the largest tank manufacturers worldwide, ZIEMANN HOLVRIEKA offers all types of tanks and silos made of stainless steel (photo: ZIEMANN HOLVRIEKA)



ZIEMANN HOLVRIEKA: Tanks and separation technology

As one of the largest manufacturers in the world, ZIEMANN HOLVRIEKA focuses on tanks that it builds in all kinds and dimensions. The second focus is on solid-liquid separation and in particular on the dynamic mash filtration system. By means of four rotary disk filters, connected in series, NESSIE combines the process steps of separation, extraction in the counterflow procedure as well as the dynamic washing of solids.

Handtmann: Latest technologies

Handtmann presents itself under the motto WE TURN IDEAS INTO SOLUTIONS. Modular solutions offer scope from start-up to fully automated, highly industrial performance production, optionally from product preparation to transfer to the packaging solution.

In the area of product preparation, the Handtmann Inotec BC140iT-300 automatic process unit and the VarioMix mixer will be on display. These universal process units can be used for simultaneous heating, cooling, mixing, crushing and emulsifying.

Interested parties with a focus on the permanent trends snacking and convenience will find solutions for moulded Mopro on the stand. The MSE 441 and MFE 431 manual moulding units will be on display for automated artisan production of a wide variety of moulded products. These units are simply attached to the Handtmann vacuum filler in just a few steps. The newly developed VF 810 vacuum filler with FS 521 forming system will be available for medium and industrial output capacities, as will a complete system consisting of VF 838 S with integrated GD 451 filling mincer and the 6-24-band FS 510 forming system. The highlight of the trade fair will be the new Handtmann total solution presented for the first time at Anuga FoodTec, which covers all process steps from filling and portioning to insertion in the packaging from a single source. Vacuum filler, filling mincer, FS 525 forming system, retraction belt, tray destacker and infeed belt, including the WS 910 digital weighing system in the new advanced version, form a fully automated production process with flexibility for different products and tray formats.

Anuga FoodTec 2022
Cologne, 26 – 29 April
Hall 5.1, A101 – D108



**The future starts
in our heads**

Discover our line innovations
at krones.com

KRONES

Krones: Solutions for plant-based drinks

Krones can draw upon long years of experience in process technology for dairy products and sensitive beverages and is now upgrading this business field to include the requisite technology for making plant-based drinks as well. The main focus here is on the production of oat-based drinks. At Anuga FoodTec 2022, Krones will premiere three concepts for different process variants, ranging from:

- » an affordable starter set-up based on learning by doing, and
- » a fast and reliable solution that keeps down investment costs for new line technology,
- » right through to an integrated, high-end concept where the main emphasis is not only on top product quality but also on sustainability aspects.

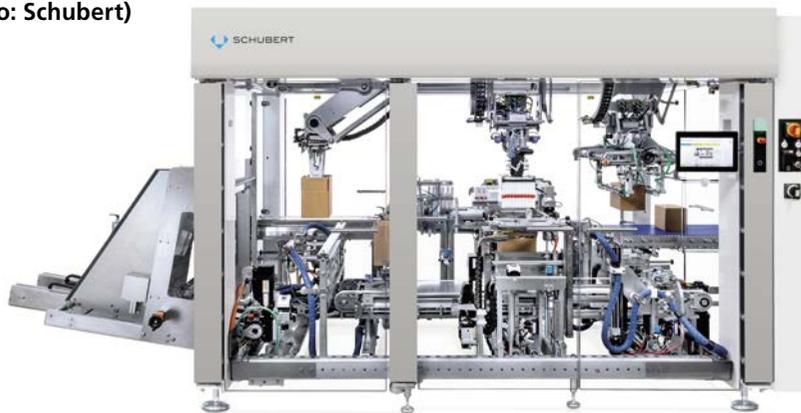
Krones also focus on VapoChill cooling towers made of stainless steel that offer hygienic benefits: sloped surfaces, elimination of dead ends and small volumes of water inside the cooling tower.

Krones will also be showcasing further elements from its broad-based process technology portfolio, chief among them the Evo-tube heat-exchanger modules and homogenisers from HST, as well as valves and pumps from its Evoguard product range.



In the field of plant-based drinks, Krones focuses on the production of oat-based drinks, offering three different process variants (photo: Krones)

On the Schubert booth, a lightline cartonpacker will pack grated cheese pouches into cartons (photo: Schubert)



Schubert: Digital packaging machine

Schubert will be presenting a lightline cartonpacker which packs grated cheese pouches into cartons on site. For the very first time, Schubert Additive Solutions will be exhibiting its new 3D printer developed in-house for high-quality printing of format and spare parts – the PARTBOX.

On site, a lightline cartonpacker will pack grated cheese pouches into cartons, whereby the cartons are erected and filled with pouches. Thanks to two carton blank magazines, the pouches can be packed into two different types of cartons. A GS.Gate industrial gateway enables secure access to the machine and production data.

Using the Schubert subsidiary's virtual web platform, manufacturers can produce plastic parts in their own production facilities using 3D printing. Schubert Additive Solutions has developed a high-quality 3D printer for this purpose, which is connected to the platform via LTE and which ensures outstanding printing results.

Flottweg: Smart Solutions

In keeping with the guiding theme of "Smart Solutions – Higher Flexibility", Flottweg will be presenting two of its most innovative machines, the Z3E and the FDS2000, at Anuga FoodTec.

Modular, easy to maintain and powerful – equipped with these features, the Z3E decanter centrifuge performs key functions in a wide variety of areas in the food industry. Thanks to its modular design, the high-performance decanters from the Z series can be individually adapted to specific requirements and applications. Due to special features such as the hygienic design of all product contact parts as well as the easy-to-clean components and surfaces, the Z3E is also ideal for separation applications in the food industry.

In addition, Flottweg will be presenting a new product at the leading trade fair in the form of the FDS2000 nozzle separator. It impresses with its simple, fast and uncomplicated handling and, with the help of a sophisticated energy recovery concept, Flottweg's new nozzle separator allows significant savings in energy and resources.

Flottweg will be presenting the FDS2000 nozzle separator (photo: Flottweg)

VEMAG Maschinenbau: Customized solutions

VEMAG Maschinenbau offers double screw vacuum filling machines which process products gently and with a high weight accuracy. The machines can be equipped with different double screws depending on the requirements to increase weight accuracy and optimally use production capacity.

VEMAG shows a combination of the HPE series vacuum filler and the attachment ASV811. This combination enables the production of rolls and round shapes like fresh goat cheese rolls (125 g up to 2.000 g) or acid curd cheese round shapes with a weight range from 6 g up to 250 g. The cut off device ASV811 can be equipped with either a knife or a wire cutter. The output capacity is up to 140 portions/min. The FKL609 operates a hot-filling process for processed cheese in which the product is portioned into containers with 60 strokes/min and weights from 100 g to 500 g. For clipping of processed cheese applications, a combination of the vacuum filling machine HP25E with the attachment Tipper Tie SV4800 is used.

VEMAG machines can also be used for reforming of cheese. A line can be converted with only a few simple steps into a system for the production of cheese sticks or cheese stars. The company also offers solutions for the handling, cutting, dosing and forming of cheese blocks or twisted cheese products.



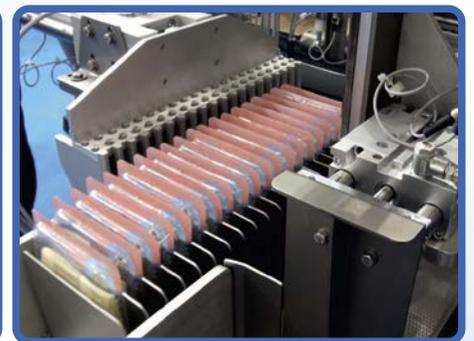
All kinds of cheese products can be made using VEMAG machines (photo: VEMAG)

Trepko
www.trepko.com

Worldwide supplier 
of filling/packaging machines



**Packaging technology
for your ideas**



ANUGA
FOOD
TEC


COME AND SEE OUR SOLUTIONS
26-29.04.2022
Hall 7.1 Stand E-041



DACH - Staaten

TREPKO A/S Hinterbacher Str 1. D-87439 Kempten/Deutschland

Festnetz: +49 831 527 123 58 Mobil: +49 151 434 099 30

e-mail: tesma@trepko.com

Trepko

Dairy and carbon farming

A win-win-win situation!



Author: Alberto Babolin, EDA

Carbon farming is currently the hot topic in the political agenda of EU agriculture. The term refers to the agricultural practices enhancing the sequestration of atmospheric carbon and its storage in the soil.

Together with industrial and technological solutions to lower carbon emissions, carbon sequestration by European land will contribute to the achievement of the EU climate goals.

"While carbon stockage in trees and forests are often top of mind, the by far largest stockage capacity is in the sea and in the soil and hence in agriculture and farming – the farmers are true climate soldiers," highlighted French agricultural minister Julien Denormandie

Last December, the European Commission presented its plans to scale up carbon farming to remove CO₂ from the atmosphere. A regulatory framework for the certification of carbon removals will be implemented to achieve the objective.

The idea is to introduce a new business model in which farmers as land managers are rewarded for the climate friendly practices they implement, enhancing the carbon sequestration potential of European land and contributing to the EU climate neutrality target.

During an informal meeting organised by the French presidency of the EU Council in February, the 27 national EU agriculture ministers and EU Commissioner for Agriculture Janusz Wojciechowski gathered in France to share their experience of climate-friendly farming and visit a concrete example of a low-carbon dairy farm.

Located in Haut-Rhin region in France, the GAEC Losser farm has invested in modern stables for the 160 cows that give 1.8 million litres of milk per year, around 11 000 litres/cow/year. The milk is collected by Alsace Lait, an independent dairy cooperative of 200 producers in the eastern part of France.

"Our farm is part of the "France Carbone Agri initiative", the French project aimed at reducing greenhouse gas emissions and

increasing the carbon sequestration of farming activities, and uses France's voluntary labelling system for low-carbon agriculture," explained Alexis Losser, one of the owners of the farm, to the agricultural ministers.

A broader framework

This system is part of a broader framework launched by the French government in 2019 to encourage and finance emissions reduction projects in all sectors of the economy and has allowed to reduce greenhouse gas emissions on farms by around 20%. This means avoiding the production of between 350 and 500 tonnes of CO₂ equivalent on farms over a five-year period. A multi criteria assessment tool is used to quantify the carbon balance and identify areas of improvement, allowing farmers to implement low carbon practices and avoid emissions, as well as increase the sequestration of atmospheric carbon. Such initiative provides the possibility to farmers to engage for lowering emission on-farm as part of a voluntary market-based compensation system.

On the margins of the informal Council meeting, French Minister Julien Denormandie said that the aim is to create a political momentum for highlighting and accelerating soil carbon sequestration.

The objective is to establish a EU framework for issuing carbon credits to reward the farmers for the carbon stockage of their soils and for the measures they take to improve the carbon sink qualities of their land.

"While setting the right incentives, our carbon credits must be competitively priced – especially compared to carbon certificates in other parts of the world," said Minister Denormandie.

A Commissioner's view

EU Commissioner for Agriculture Janusz Wojciechowski welcomed this joint approach on low-carbon agriculture: "There is a strong alignment on the basic principle within the European Union, we now have to flesh out the details in a legislative proposal – and we're committed to to publish our proposal on the certification of carbon removals by end 2022."



French farming minister
Julien Denormandie
at a dairy farm visit in
February 2022

EU Commissioner Janusz Wojciechowski underlined the contribution of agriculture to the climate targets and highlighted the benefits that carbon farming practices can bring in terms of environmental and climate benefits, as well as in terms of agriculture productivity by increasing soil quality. He also stated that the increasing demand for carbon credits could represent an additional source of income for farmers. "This is a win-win-win situation, for the climate, for the quality of our soils and for the farming community in terms of better productivity and an opportunity for additional income."

"Natural carbon sinks will play a key role in the transition towards a carbon neutral continent by 2050. And here, the carbon sequestration of dairy grassland can offset a significant volume of emissions. The Losser farm in France is just one of the many existing projects within the European lactosphere aimed at enhancing carbon sequestration. Developing reliable calculation methods and the right incentives is now the challenge when drafting the legislative proposal," underlined EDA secretary general Alexander Anton.

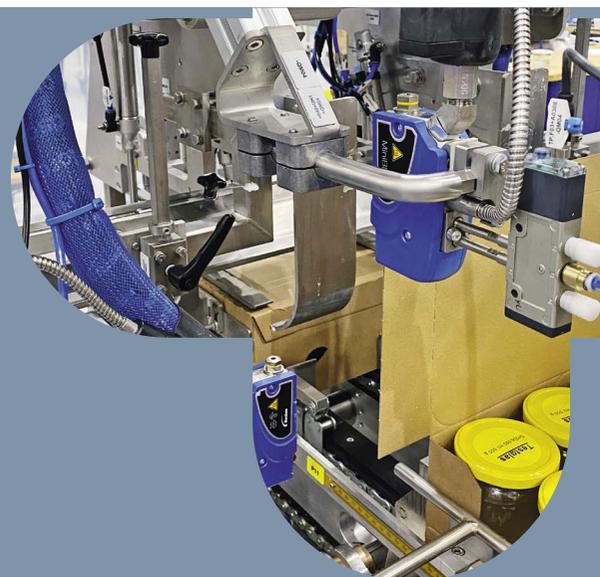
As showed by Alexis Losser in his farm, the dairy sector is actively engaged in the fight against climate change and dairy pastureland offers an excellent opportunity due to its capacity to store carbon. And this is only part of our European dairy strategy: the goal of the dairy sector is to improve the overall environmental performance of dairy operations. Greenhouse gas emissions is, in fact, are only one indicator for environmental sustainability, and a more holistic approach is needed to ensure co-benefits are obtained on other environmental components such as biodiversity and water use. The European Dairy Product Environmental Footprint (PEF), approved by EU Commission and Members States in 2018 as the reference methodology for the dairy sector, represents the right tool for assessing the environmental performance of our products across a broad range of environmental indicators.

EU Commissioner Janusz Wojciechowski with his team member Magdalena Majerczyk and EDA Secretary General Alexander Anton at the Alsace farm visit



AT THE CUTTING EDGE

Dynamic concepts tailor made
to suit specific needs.



The Rise of Dairy Alternatives



Author:
Will Cowling, Marketing Manager at FMCG Gurus.
For more information, please contact info@fmcggurus.com



Consumer Experts, Insight Driven

In recent years the concept of the flexitarian has grown considerably with many people looking to reduce or eliminate dairy and meat-based products from their diets. This can be linked to two key concerns, firstly consumers are looking to address their health and wellness, and secondly consumers are becoming more conscious about the state of the environment, as they look to reduce their carbon footprint. Both of these concerns have been intensified as a result of the pandemic as consumers are now more than ever before actively looking to address their diets in order to lead a healthier and more sustainable diet. So, will this demand for dairy alternatives continue to grow?

There is a growing proportion of consumers across the globe who are adopting a diet based around the avoidance and moderation of animal produce. FMCG Gurus consumer insights show that 41% of global consumers are now choosing to turn to eating and drink dairy alternatives as a source of protein in their diets. Although consumers are turning to dairy alternatives, 78% of global consumers still state that they eat and drink dairy as a source of protein. The high proportion of consumers who also say that they turn to real dairy products means that there is some overlap between traditional cow-based products and plant alternatives. These figures show how the flexitarian diet is on the rise, with a high proportion of people looking to modify their intake of dairy as opposed to eliminate it completely from their diet.

When it comes to consumers who are turning to dairy alternatives there a number of core reasons to why consumers are making this switch. Firstly, FMCG Gurus insights show that 63% of consumers who eat or drink dairy alternatives as a source of protein, do so because it is better for the environment. 62% of these consumers then state that they believe plant-based alternatives are healthier than regular products. This serves to highlight

how people are adopting the notion of good for me, good for the earth, believing that the issues of health and sustainability are interlinked. Therefore, this is something that will drive demand for dairy alternatives over the next five years, with the proportion of people identifying themselves as flexitarian rising.

Although plant-based alternatives have been associated with health in recent years, this does not exclude them from having barriers to purchase within the market. FMCG Gurus research shows that one of the key barriers is affordability. The insights show that 51% of global consumers believe that plant protein products are more expensive than animal-based protein. Premium prices within the better-for-you ranges is something that will be a challenge for consumers, especially in a recessionary environment where consumers are looking to reduce spend and save costs on food and drink products. As such, it is important that as well as leveraging health and sustainability traits, dairy alternatives are also deemed affordable.

Sensory appeal must also be address as one in 4 consumers state that plant protein products are less tasty than animal-based protein. Although health and sustainability claims are key considerations, sensory appeal still remains the primary purchasing motivator. This is especially true in an environment where consumers are looking for moments of indulgence for escapism to deal with everyday pressures of life. This is highlighted as 71% of consumers state that taste is the most important factor when buying dairy alternatives. 67% of these consumers also believe it is important that dairy alternatives taste the same as dairy products. Therefore, it is crucial that products offer reassurance that they can replicate the experience of eating and drinking real dairy products from a sensory perspective to reduce these barriers to purchase within the market.

(photo: baibaz/adobe.com)



MINEBEA INTEC WPL-A for Norseland

Norseland has a diverse and versatile offering; providing cheese for every occasion from slices to large blocks and snacking portions. The breadth of their product range relies on a varied range of equipment to manufacture and produce products ready for their customers.

Minebea Intec has been supplying Norseland since 2007. They currently have almost 30 Minebea Intec products for various applications in their production, the latest additions being the WPL-A and WPL-S for their labelling requirements.

The requirement for new labelling machinery was driven by the need to automate the process, increase the efficiency and accuracy and also due to a lack of labour.

Minebea Intec was chosen as preferred supplier for a number of reasons; the durability of Minebea Intec products, the hygienic standards of the products, the aftersales service and the ability to adapt products to their exact requirements. In response to these requirements, the WPL-A was manufactured to accommodate the label sizes required by Norseland and the WPL-S was adapted to fit into their existing line. The WPL-A has also proven to drastically reduce the Health and Safety risks of Repetitive Strain Injury (RSI) of operatives who were previously lifting and handling 1.5kg portions of cheese.



Norseland was looking for new ways to automate parts of their manufacturing and reduce the demands on their existing workforce. The WPL-A offered a solution for their labelling processes and has increased the efficiency and accuracy of their labelling (photo: Minebea Intec)

ASEPTIC PET PACKAGING PROVEN PERFORMANCE



Over 46 billion bottles have been sterilised using Sidel Aseptic Combi with dry preform sterilisation saving our customers 7 billion liters of water and over 57,000 tons of PET.

Sidel, when aseptic matters.

Sidel
Aseptic Combi Predis
FDA approved

sidel.com

**Performance
through
Understanding**

Sidel

Gebr. Baldauf & airinotec

State-of-the-art technology for a traditional creamery

"We found the project in Goßholz very exciting. The requirements in the cheese warehouse in particular called for innovative solutions. The final result and the speed with which our plant concepts were implemented show that we are the ideal partner for the food industry."

Stefan Schlee, responsible project manager at airinotec

State-of-the-art hygienic air technology for a traditional food product: The traditional creamery Gebr. Baldauf has built a new production site in Goßholz in the Allgäu region of Germany. The goal: to create an environment in which the best quality products can be produced under sustainable, environmentally friendly conditions. The hygienic air technology for the new premises was supplied by airinotec.

Germany is a cheese country: 25 kilograms of cheese are consumed per capita in the Federal Republic. The traditional company Gebr. Baldauf from Allgäu, among others, ensures that the German appetite for cheese is kept satisfied. The family business has been producing speciality cheeses since 1862. The culinary enterprise began in Goßholz. The hat maker Martin Baldauf was forced to reinvent himself. Headwear had gone out of fashion and sales were faltering. At that time, Goßholz was the headquarters for important cheese traders. So, Martin Baldauf did the obvious thing – and founded a wholesale business for cheese and dairy products. Five generations later, a lot has changed, but one thing has remained: the success with which Martin Baldauf's successors produce cheese. It was also this success that led the current company manager Georg Baldauf to consider the construction of a new building. It is actually a tradition at Baldauf to lease production sites. After the two dairies reached full capacity due to increasing demand and no longer met the current energy standards, the decision was taken to construct a new building. Right in Goßholz, the birthplace of the commercial Bavarian dairy industry.

High-tech meets tradition

After a construction period of one and a half years, hay milk, organic hay milk, and organic sheep milk have been processed in a modern interpretation of a classically shingled village dairy since December 2020. The new building combines production pro-

cesses, shortens transport routes and optimises energy efficiency. Although the basic principles of cheese production have barely changed since the company was founded in 1862, more and more modern technology is finding its way into the production facilities. This also applies to Baldauf's new creamery – which was equipped with hygienic air technology by airinotec.

Three challenging tasks for airinotec

airinotec, experts for industrial air conditioning and process air technology systems had overall responsibility for the planning and implementation of the hygienic air technology in the creamery, the process and heating rooms and the cheese ripening warehouse. In addition to the approximately 3000 cubic metres of space in the alpine dairy and processing rooms, there is another 3000 cubic metres in the cheese ripening warehouse. After consultation and planning process, construction finally began in June 2020. The ventilation technology was already up and running in October. airinotec had to meet three major challenges in Goßholz: The air conditioning technology for the process rooms, the air conditioning of the cheese ripening warehouse and the process air conditioning for the heat treatment chambers. These three requirements required different solutions.

Process air conditioning of the heating rooms

The purpose of the heat treatment chambers is to further enhance the quality of the cheese. Controlled via a temperature profile, they are designed to guarantee consistently high product quality. airinotec resolved this issue with the help of newly developed recirculating air hygiene units in a welded stainless-steel design. Since the heating rooms have to be thoroughly cleaned after each production run, the units are designed so that they can be cleaned quickly and easily with a high-pressure cleaner. The air ducting elements in the heating compartments can be easily removed for cleaning.



Exterior view Baldauf creamery – new building (photo: Baldauf)

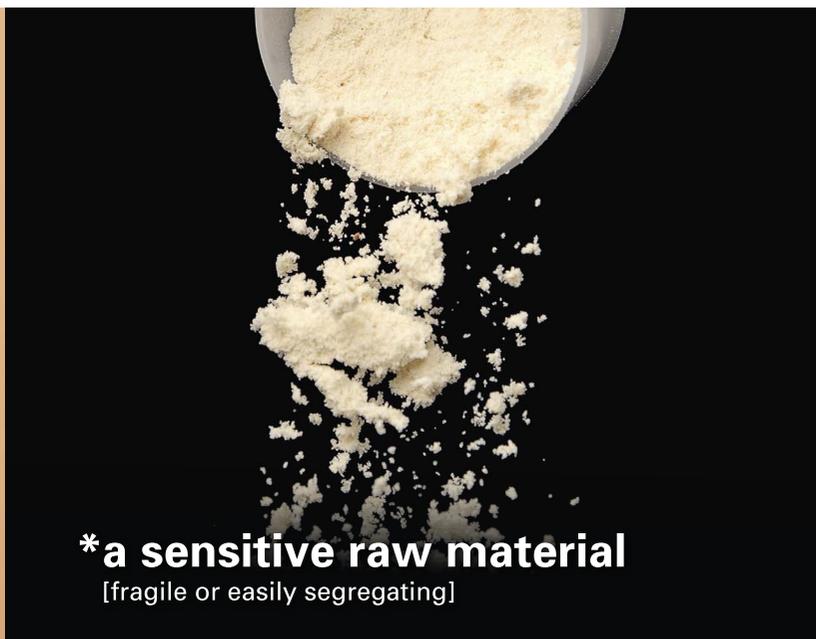
airnotec A-BLOC Pro technology for cheese ripening warehouses with high-precision MSR technology

Homogeneous and constant room conditions are mandatory in cheese ripening warehouses. Cheese is stored for two to twelve months. If they lose moisture during this time, the company's turn-

over is directly affected due to the loss in weight. A recirculating air hygiene unit (airnotec A-BLOC Pro technology) was developed to create the conditions that prevent undesirable results in this regard. It can cool, heat, humidify or dehumidify as required. The air is distributed by the recirculating air hygiene unit by means of induction nozzles and therefore ensures uniform room conditions.



Weakling*



***a sensitive raw material**
[fragile or easily segregating]

The more complex it is to handle raw materials, the more we are in our element!

We Love Ingredients.

Raw materials automatically
converting | storing | dosing | conveying | weighing | screening

[We also stand for simple solutions ...]



www.azo.com



Cologne, 26.–29.04.2022, Hall 10.1, Booth C049

It was important to the Baldauf project managers that no air ducts were required for air distribution, as these would have resulted in time-consuming manual cleaning. As a result, the most convenient of all solutions has been integrated: The recirculating air hygiene unit can now be cleaned automatically.

With the help of the air-conditioning system for the creamery and the process rooms, highly filtered and conditioned fresh air is blown into the ripening warehouse in order to be able to maintain a desired overpressure in the warehouse together using a controlled exhaust fan. In order to cope with the different storage capacities in the individual storage cellars, smart automation technology with high-precision room sensors and several

control zones was developed to ensure constant climate conditions.

Smart air-conditioning and hygienic air technology for creamery and process rooms

Compliance with hygiene requirements and greater energy efficiency were the top priorities when finding the system for ventilating the creamery and process rooms, which also include cold storage, the machine room, the laboratory, the temporary storage and the salt bath. Since the creamery and the process rooms had different requirements for room conditions, a ventilation concept with several temperature control zones and individual room control with separate supply and exhaust air volume flow controllers was selected for each area. The ventilation system has a highly efficient heat recovery system in the form of a cross-flow heat exchanger. The primary energy requirement can be significantly reduced thanks to a sophisticated load management system and energy-efficient operating mode, in which the fans are controlled according to demand. The reduction is considerable: The power requirement (shaft power) of fans and pumps changes by a power of three relative to the volume flow. This means that if the air volume is reduced by 20 percent, the power requirement can be reduced by 50 percent.



Cheese ripening room with A-BLOC Pro technology airinotec_Hygienic air technology: Hygienic air technology for alpine dairy/creamery (photo: airinotec)



airinotec hygienic air technology: In order to cope with the different storage capacities in the individual storage cellars, smart automation technology with high-precision room sensors and several control zones was developed to ensure constant climate conditions (photo: airinotec)

With the help of a load-dependent volume flow control, the individual areas are only supplied with low supply air volumes during break times or at night when production is at a standstill, as lower room loads occur during this time.

Conclusion: a creamery with air technology for future generations

Georg Baldauf formulated a goal before construction began: He wanted to present a model for a creamery that "can still function in exactly the same way in 100 years". This goal was also implemented in Goßholz with regard to the hygienic air technology, which contributes to Baldauf's ability to supply Germany, the land of cheese, with speciality cheeses that are consistently high quality produced under sustainable conditions.

airinotec products & solutions can be experienced live at Anuga FoodTec 2022.

Better cheese, together

The key to creating appealing cheese with stand-out taste and texture



Author: Gert van den Hoven, Cheese Expert, DSM

Retail shelves are brimming with a wide variety of exciting cheese offerings, yet consumers are still hungry for more. The cheese segment has proven extremely resilient in the wake of COVID-19, showing marked growth and signs of a bright outlook. According to figures, global cheese volumes are expected to grow by 3.2% annually between 2021 and 2026¹, despite economic uncertainty. Although foodservice cheese sales declined in 2020 and 2021 due to stay at home orders, consumers have spent more time cooking and eating at home – leading to higher volumes of cheese retail sales. This flux not only reflects changing consumer circumstances, but also the culmination of strong interest and innovation in the industry over the years, driven by preferences for bigger, bolder flavors and better-for-you products. The result is a very competitive and dynamic market. But what are the key considerations for cheesemakers looking to meet changing consumer preferences with appealing cheese offerings?

Industry insights

Today's consumers have increasingly sophisticated tastes, demanding new and interesting flavors and textures from their cheese

products. Research found that 29% of US cheese consumers say that 'bolder flavors' are an important purchasing driver for them², a sign that more diverse offerings are welcomed. COVID-19 has also influenced consumer taste preferences, with many people looking for indulgent products that offer guilt-free moments of escapism in uncertain times, such as premium or comfort foods. In May 2020, at the height of the pandemic, research showed that 60% of global consumers sought out more mood-boosting foods³.

Demand for locally produced cheese is also on the rise, as discerning consumers pay more attention to the origin and explore different varieties of cheese. Brands have been quick to respond to this growing enthusiasm with exciting new product launches that focus on local tradition and heritage – without compromising on taste or texture. Similarly, international cheese types, like Manchego – which are widely seen as a premium option – are also increasingly sought after. In line with these changing preferences, it is important that producers develop authentic products with diverse flavor and texture profiles.

we design and engineer
food processing facilities.

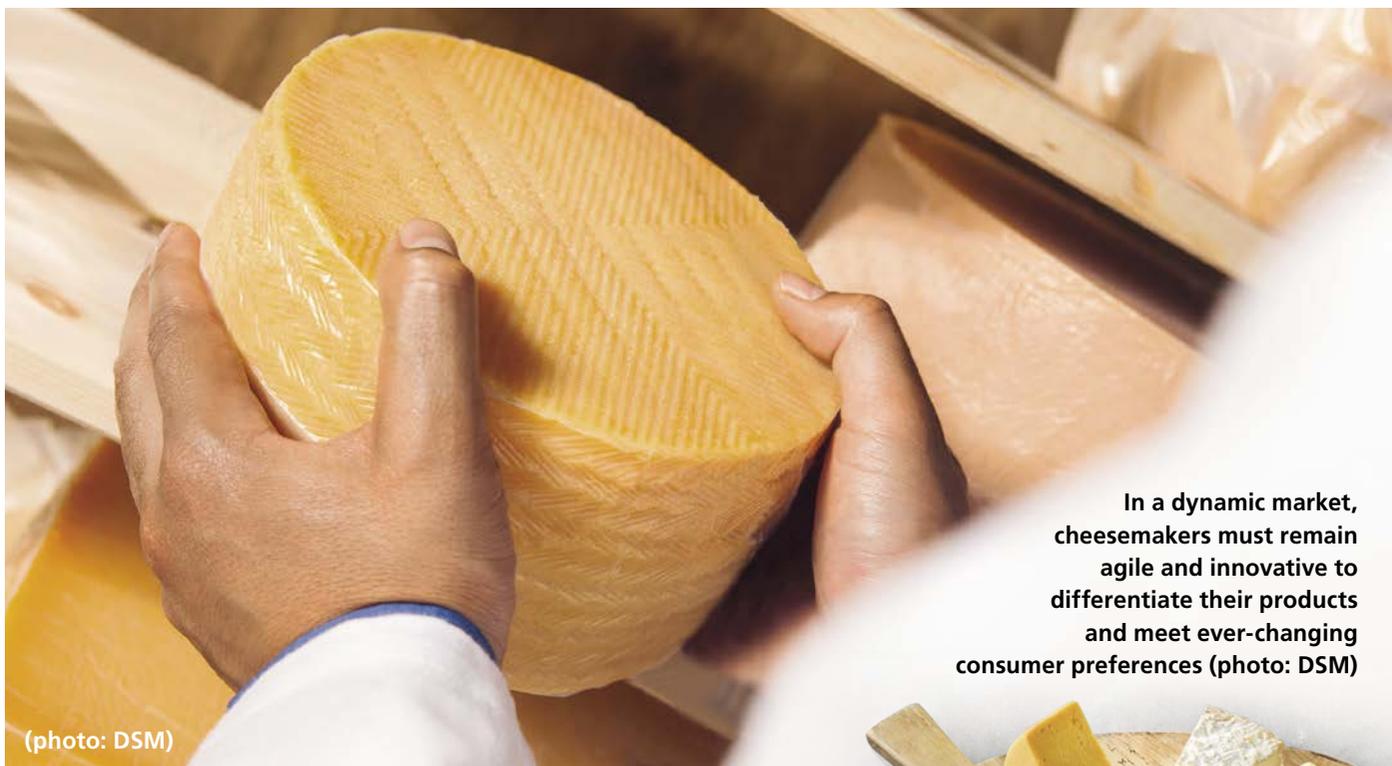
foodfab
consultants for food production plants

ATP architects
engineers

www.foodfab.eu
www.atp.ag



We look forward to welcoming you at Anuga FoodTec 2022
Messe Köln | April 26th – 29th 2022 | Hall 6.1 | Booth B051



(photo: DSM)

In a dynamic market, cheesemakers must remain agile and innovative to differentiate their products and meet ever-changing consumer preferences (photo: DSM)

Meanwhile, cheese continues to be a popular choice for snacking, with many seeing it as a quick, convenient option as part of their busy lifestyles. Particularly following the pandemic, consumers are working more from home and are looking for food options that support home cooking and snacking. Access to products that are in a convenient format, such as grated cheese, is more important than ever, as consumers use their time at home to prepare fresh meals and experiment with exciting new flavors and dishes.

Improving cheese quality

As well as taste and texture, sustainability is becoming a growing priority for the modern consumer. Figures show that approximately one third of food produced globally for human consumption – around 1.3 billion tons – is lost or wasted every year, causing widespread concern⁴. Consumers are therefore keen to make sustainable choices that help to reduce food waste and are increasingly selecting products that maintain a high quality over a long shelf life. However, combating microbial spoilage in cheese can be challenging for producers, as high cheese loads in warehouses and ventilation limitations can accelerate mold growth during the ripening process.

At the same time, cheese manufacturers are re-assessing their production processes to keep wastage to a minimum, by reducing water and energy usage. And to further enhance their green credentials, improving process efficiencies, increasing yield and production speed, while also reducing ripening time and speeding up acidification, are at the top of the agenda for many cheese producers today.

Solutions for every cheese challenge

In such a dynamic market, cheesemakers must remain agile and innovative to differentiate their products and meet ever-changing



consumer preferences. As a one-stop-shop solutions provider, DSM offers a unique range of coagulants, enzymes, cultures, coatings and ripening solutions to create high-quality cheese offerings with a great taste and texture.

DSM's Dairy Safe solution, for example, delivers acidification, flavor and assured bioprotection against late blowing and spoilage in the development of high-quality cheese, including organic varieties. Thanks to the addition of several new phage-robust culture rotations to the Dairy Safe portfolio in 2021, producers can ensure reliable and consistent cheese production and optimal phage management. Without the use of artificial preservatives, these cultures offer a natural way to avoid spoilage to save producers time and costs.

Meanwhile, DSM's Delvo Cheese and Ceska Star Direct to Vat Cultures (DVC) optimize process efficiencies and increase yield, while helping producers to differentiate their products with an ap-

peeling taste, texture and mouthfeel. Adjunct cultures, like those in DSM's FlavorWheel range, can also enable producers to create unique, distinguishing flavor profiles for cheeses – whether it is sweet, spicy, savory or farmhouse, roasted or fruity flavor notes – as well as stand-out textures. The FlavorWheel concept is based on DSM's broad range of Delvo ADD and Ceska Star adjunct cultures, which are backed by DSM's 50+ years' experience in adding signature flavor profiles to a wide variety of cheese, such as Gouda, Manchego, Cheddar and Monterey Jack. The range is tailor-made to suit multiple cheese applications and has been designed to create award-winning cheese with excellent taste and texture, as well as faster ripening times.

Alongside this, DSM offers its Pack-Age and Pack-Age Diamond preservative-free, unique membrane solutions for effectively packing and aging cheese. The Pack-Age range enables hard and semi-hard cheeses to breathe and develop the great taste and texture of a naturally ripened cheese, while protecting them against mold during the ripening process. As a sustainable solution, Pack-Age can help cheesemakers combat food waste and create cleaner labels without compromising on taste or consumer experience. The innovative design of the Pack-Age Diamond membrane means it can be wrapped tightly around round cheese with no 'ears', reducing the chances of residual air being trapped and creating a more appetizing aesthetic.

Keeping its portfolio diverse, DSM also provides an integrated solution for phage control during the entire production process. The fastest phage testing kit on the market, DSM's Delvo Phage test kit can detect phages in dairy within an hour, helping to increase cheese yield and quality, reduce waste and boost value in cheese production by 5-10%. Part of its broader phage management solution, the new Delvo Analytics app also offers a 24/7 platform for phage insights and data from whey samples of production. It enables dairy manufacturers to take immediate action on results with customized culture rotation recommendations.

The key to success

Now, with such a wide range of ingredient innovations available, it is easier than ever

for cheese manufacturers to differentiate their offering and stand out in a competitive market. But it takes more than simply ingredients; partnering with an end-to-end supplier like DSM can help cheesemakers improve speed to market, by providing support from concept to consumer. With an enhanced portfolio of solutions and es-

tablished regional footprint supported by world-class experts and resources, DSM helps bring innovation to life, time after time.

DSM's portfolio of cheese solutions: https://www.dsm.com/food-specialties/en_US/markets/dairy/creating-better-cheese.html

- 1 Euromonitor, 2021.
- 2 Mintel, A year of innovation in cheese [report], Dec 2020.
- 3 FMCG Gurus, consumer survey.
- 4 Ibid.



... whether it be dice, shred, flakes, slices or even customized shapes. We have been in the food-processing business for more than 60 years!



holac Maschinenbau GmbH
 Am Rotbühl 5
 89564 Nattheim · Germany
 Fon +49 7321 / 9645-0
 E-Mail info@holac.de

IFFA
 VISIT US IN HALL 8
 BOOTH H96!

www.holac.de

Air Quality Process

Correct air conditioning ensures hygiene and saves resources

Since the first presentation of an USDA accepted hygienic air conditioner, French company Air Quality Process (AQP) has become a specialist in equipping cheese dairies. At the time, the concept developed by the family-owned company was considered a true revolution. It is based on specially designed units that are completely cleanable. Today, AQP supplies complete ventilation and air-conditioning systems for cheese dairies worldwide.

One customer of AQP is Dutch goat cheese maker Bettinehoeve, part of the Emmi group. 2 years ago, Bettinehoeve decided to increase production capacity which included the building of another ripening room. Having been in contact with AQP for many years, Bettinehoeve opted for an air conditioning system by AQP. Chris Broers, head of technology and production at Bettinehoeve, summarizes his experience with the equipment: "Compared to conventional air conditioning, AQP's systems make sure that air is evenly and homogeneously distributed all over the ripening steel racks, resulting in a minimum standard deviation of the products. To achieve this homogeneity, the air is recovered at 360° at the bottom of the floor unit, treated in temperature/hygrometry inside the tubes of the exchanger, and blown through perforated textile ducts on the top of the room. It forces the air to go from the upper to the lower stacks. CO₂ produced by white mold is reliably removed so that mold growth is even across the whole cheese in ripening. As humidity is also constant throughout the room, we have a uniform product quality. There are no cheeses too wet or too dry after ripening." And there is yet another advantage, according to Broers. AQP systems are perfectly cleanable and controllable in all points providing the cheese maker with an extra in food safety. To add to all these benefits, water loss during ripening is greatly reduced. "Compared to conventional air conditioning, we now monitor 2% less water loss during cheese ripening meaning a higher product yield," says Mr Broers.

No barriers, no pressure drop

The secret of AQP's success lies not only in hygiene, but also in the special air ducting through extra-smooth tubes, without barrier to the air. As a result, there is hardly any pressure drop and the ventilation requires less energy overall. According to Sales Manager Séverine Dolci, AQP units consume two to three times less energy than conventional systems. The units are made of stainless steel because they have to withstand an aggressive environment.

For AQP, the starting point of every project is a comprehensive technical survey of the air supply or the requirements tied to it on site. This determines where overpressure zones have to be set up or what volume flows have to be handled at which temperatures. The humidity of the air must also be specifically defined for each room in a cheese dairy. Together with the cheese dairy's operating plan, i.e. how often and when cleaning is carried out, whether production also takes place at weekends, etc., this results in an overall concept for the ventilation of the dairy and its departments. Further details of the system can be individually adapted by AQP to the requirements on site in its own test room with variable ceiling heights from 3 to 6 meters. The result is to ensure that the air conditioning remains consistently homogeneous at all points in ageing rooms.



Chris Broers, head of technology and production at Bettinehoeve: we now monitor 2% less water loss during cheese ripening (photo: Bettinehoeve)



Air Quality Process (AQP) not only designs and supplies air-conditioning systems, the company also advises cheese dairies on issues of room and building design or in cases of contamination, independently of the system purchase. AQP takes all relevant sources of contamination into consideration. This service is also offered for third-party systems. In the Netherlands, AQP's sales partner is Jongsma Engineering solutions.

Bettinehoeve

Bettinehoeve, part of the Emmi group, processes 50m liters of goat's milk per year into soft and fresh cheeses. A sister company called GMP (Goat Milk Powder) is specialized in drying goat's milk. The company employs 125 workers in both branches.

Dutch goat cheese maker Bettinehoeve has installed an air conditioning system by Air Quality Process (photo: Bettinehoeve)



**Whitebloc Aero:
incredibly fast changeovers
and exceptional product yield.**



Validated dry decontamination technology for plastic containers, optimized to offer ESL beverage producers utmost flexibility, sustainability and low TCO.

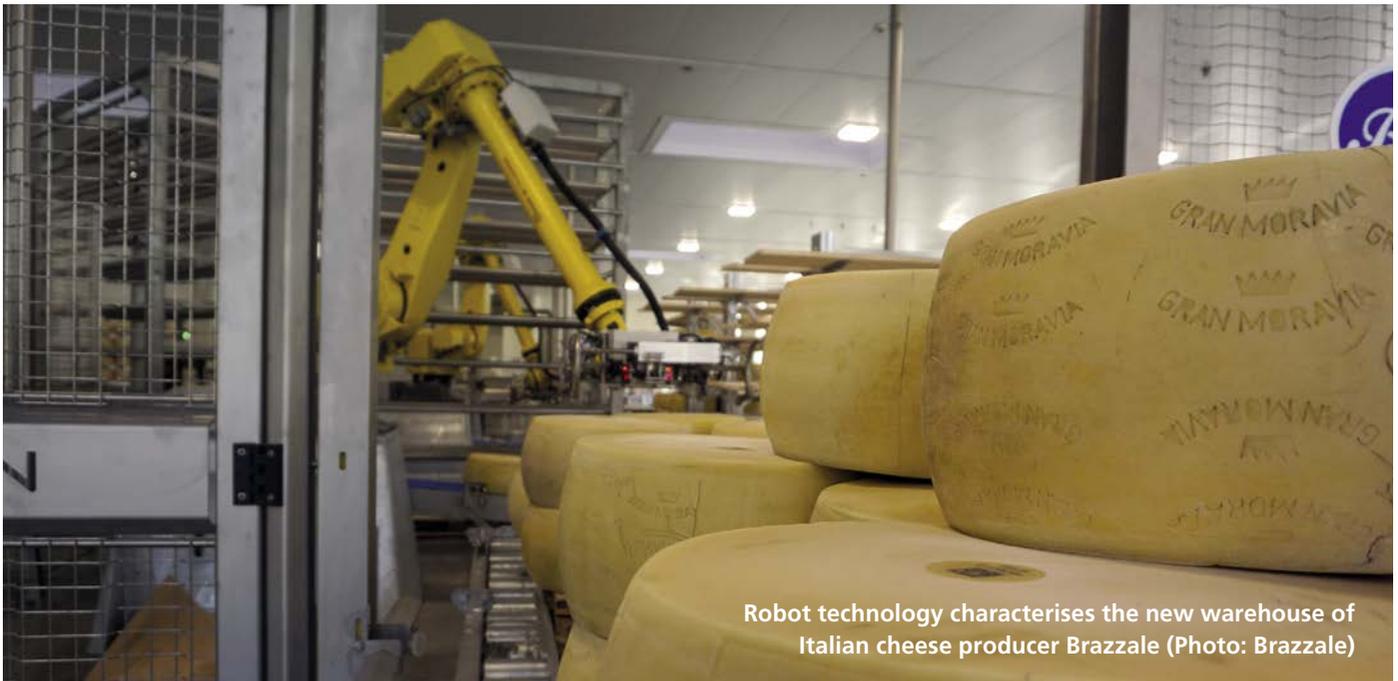
GEA's extensive experience in aseptic filling has inspired the design and concept of GEA Whitebloc Aero, conceived to target extended shelf life premium dairy beverages distributed in cold chain. The GEA Whitebloc Aero is versatile, fast and flexible, hence capable of running many small batches and filling a variety of different products on

the same machine. Thanks to a built-in product recovery system, the GEA Whitebloc Aero eliminates product waste during the start-up cycle, at the end of each production run and during changeovers. Filling valves can be equipped with a load cell (weight filling) or flow meter (volumetric filling) for maximum flexibility and accuracy.

Visit GEA at Anuga FoodTec: Hall 5.1 - Booth C-011

Robotised cheese ripening warehouse: The taste of the future

Brazzale installs high-tech cheese ripening system



Robot technology characterises the new warehouse of Italian cheese producer Brazzale (Photo: Brazzale)

In the Italian province of Vicenza, Brazzale, Italy's oldest family-run dairy company, started installing the first robotic ripening warehouse for its Gran Moravia hard cheese, which is similar in taste to its relatives Grana Padano and Parmigiano Reggiano, back in 2018. In June 2021, a new ripening warehouse near the company's headquarters in Zanè was officially opened and put into operation. It has a capacity of about 250,000 wheels of cheese.

"It is exciting to be pioneering this huge technological leap that will allow us to ripen in conditions that were previously unthinkable. We have complete visibility of every cheese from production to ripening to storage removal," explains co-managing director Roberto Brazzale. „Tradition is a process that is not only about preserving what has gone before, but also about what each generation does better by abandoning what is outdated. We al-

ways want to be at least 10 years ahead to serve consumers better. Tradition and innovation meet at our company."

€20 million investment

€20 million went into the new ripening centre in Sant' Agata Cogollo del Cengio. Up to now, Brazzale has been ripening in 14 warehouses in northern Italy. By concentrating on the new location, 200,000 km of transport will be saved per year. The workforce will be newly qualified, and energy and rental costs will be eliminated. However, it is not only the savings that make the new ripening warehouse important for Brazzale. Above all, it is the control of all ripening processes in relation to each individual cheese wheel. As is well known, ripening is a key phase in giving Italian hard cheese its typical and distinctive character. Every day, 20,000 loaves enter the warehouse and are individually inspected and

weighed. This data is merged with that from production to allow constant monitoring of the quality and to trace the path of the cheese all the way to the milk silo and to the farmer.

Gran Moravia is produced using the grana cheese technology at the Czech Brazzale plant in Litovel. Brazzale took the step of relocating production from Italy in 2003. Roberto Brazzale explains: "Italy does not have enough agricultural land to feed its inhabitants. Over the years, Made in Italy has become an ideology that unilaterally serves the interests of the agricultural industry. For us as entrepreneurs, however, it is imperative to maintain the competitiveness and best quality of our products, for which we can use the opportunities of globalisation." However, the value chain is shared equally by the Czech Republic and Italy: The headquarters, marketing, research and development departments, as well as ripening, packaging and logistics remain in the beautiful Mediterranean country.

The microclimate

The new warehouse was put into operation in June 2021 and will now gradually be fully operative until spring 2022. In parallel, the processes are being optimised, be it the microclimate that surrounds the cheeses (humidity, temperature, air circulation) or the operation of the robotic systems. Special attention is paid to how the cheeses react to the microclimate. Two Elten robots take care of storage and retrieval as well as cheese care (turning, brushing). Of course, all the cheeses pass through a metal detector during storage.

The new warehouse is located at the mouth of the Valdstico Valley, at the foot of the Asiago plateau, about 300 metres above sea level, in a position that ensures optimal ventilation and pure air coming from the surrounding mountains, which is particularly essential for prolonged ageing. Roberto Brazzale: "The outside air is in fact the pure and dry air of the Valdstico Valley, milder in winter and cooler in summer thanks to the mountain breeze." The indoor air in the maturing rooms is renewed 12 times a day. The air is transported particularly gently through the air ducts, which measure a total of 140 km, yet the microclimate across the cheese stacks is characterised by homogeneity. Maximum possible stabilisation of temperature and humidity, which controls the natural and complex ripening process of the cheese, as well as extreme precision of all loading, unloading, brushing and turning processes, which are controlled by a central computer system, are the main characteristics of the new warehouse.

With a total of 10,000 tons of cheese, the new warehouse is the largest fully automated system for this type of cheese in the world. The Gran Moravia cheeses are matured for nine to 24 months. Incidentally, the warehouse does not need any storage aisles at all, resulting in a space saving of 50% compared to conventional warehouse types and there is no need to heat the ripening warehouse as cheeses are positioned close to each other maintaining temperature easily.

Brazzale's new warehouse is completely self-sufficient in energy, as it is powered by 2,000 m² of solar panels. Their output is 470 kWh.



Intralogistics at Brazzale rely on automated driverless transport vehicles (Photo: Brazzale)



Roberto Brazzale (left) explains the processes in the new ripening warehouse to Burkhard Endemann, B&L MedienGesellschaft (Photo: Brazzale)

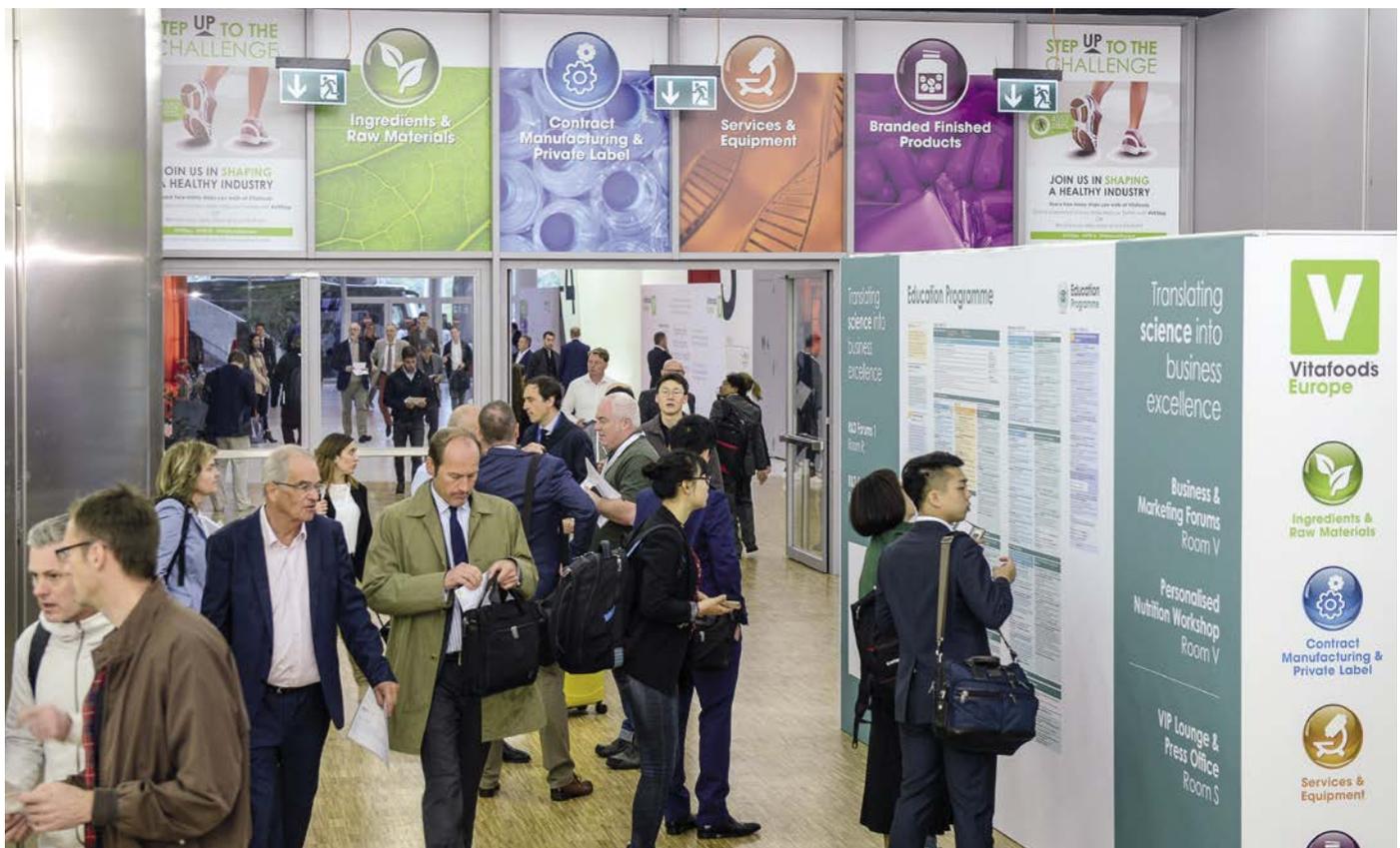


The ripening warehouse holds 250,000 loaves and has an extremely compact design (Photo: Brazzale)

Vitafoods Europe 2022

10 – 12 May, Geneva, Switzerland

2 – 13 May, online event



The annual gathering Vitafoods Europe sees a truly global audience across four sectors covering the entire nutraceutical supply chain, from beginning to end. The exhibition, conference and networking events form an ecosystem for businesses to thrive and forge long term collaborations, enrich understanding and initiate critical conversations around the most pressing issues concerning the health and nutrition industry. The organisers expect more than 1,000 exhibitors for the hybrid event that

will take place physically from 10 to 12 May and online from 1 to 13 May, 2022. Hosting it this way allows even more people the chance to experience everything on offer at the show.

Lasting connections

Whether visitors choose to join in-person, online or both, Vitafoods Europe will once again be the place to make connections with leading suppliers of raw ingredients, dietary supplements, functional food and beverages and high quality service and

equipment, plus find beneficial advice on how to give products the competitive edge.

With an agenda exploring market trends, regulatory complexities, packaging and labelling challenges and more, the event will provide plenty of opportunities to explore and learn about the industry, keep up to date with the latest developments and discover key insights that will allow to plot a competitive course for businesses.

Learn more at vitafoods.eu.com

Vitafoods™ Europe



The global nutraceutical event

The four sectors covered by Vitafoods are

Ingredients & Raw Materials

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

Contract Manufacturing & Private Label

This section was created to kick-start or grow businesses with market-ready private and white-label business opportunities.

Branded Finished Products

Visitors can source the latest, most innovative functional foods and beverages in the market in the Branded Finished Products show area, bringing buyers, distributors, retailers and suppliers together online and in-person.

Services & Equipment

The Services & Equipment area gives access to technical and regulatory advice. Questions are answered by technical experts and visitors will find innovative solutions to help their business thrive.



 NATURAL RAW MATERIALS

This feeling of life

is in our natural dried food raw materials

Whether delicatessen or convenience – consumers are always on the look-out for healthy and varied treats. With balanced nutrients, flavors and colors, our diverse product range contributes to this. From local and exotic fruits, mushrooms and vegetables, aromatic spices and fine herb mixtures – there are no limits to your creativity.

WORLÉE
seit 1851

Vitafoods: Taiyo presents innovative concepts for natural-based products

Vitafoods Geneva, 10-12 May 2022, booth F90: Taiyo launches reformulated protein shake concepts in three flavours, and showcases ingredients that support a long-term healthy lifestyle.

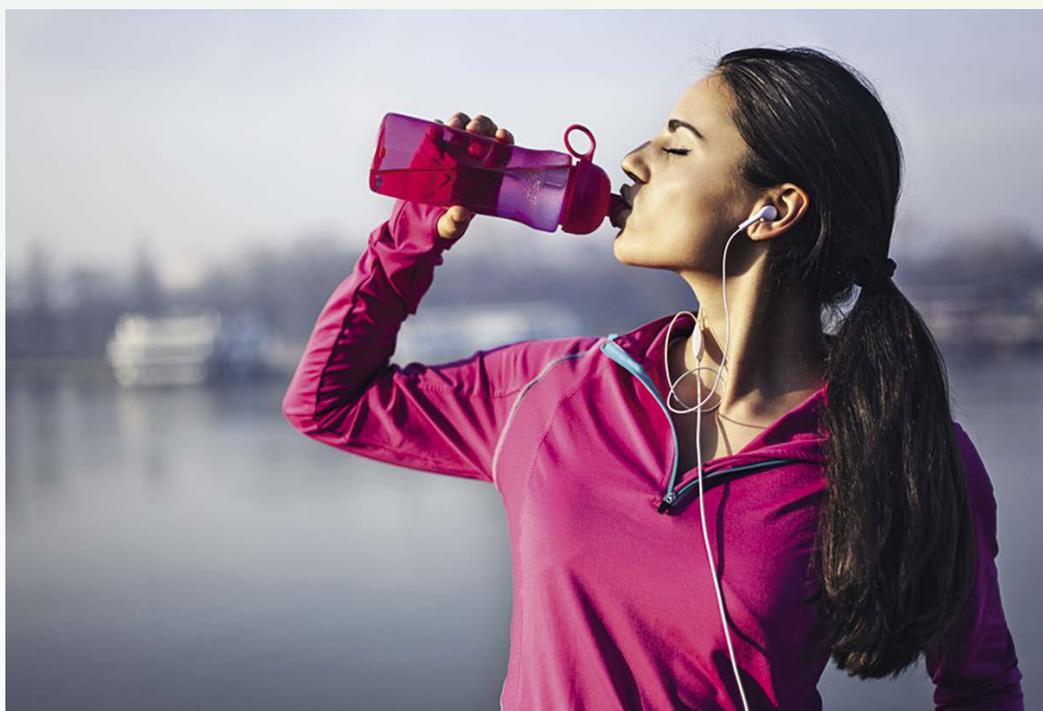
At Vitafoods Europe, functional ingredient expert Taiyo will present brand new concepts which address current consumer trends, such as healthy ageing, sports nutrition and clean label products. The company will showcase new additions to its Sunfiber portfolio – an all-natural, 100% soluble dietary fiber – as well as its new Sunfiber Water Concept, an optimum hydration offering with health-boosting properties. It will also present Sunphenon EC, known for its high polyphenol and catechin content with proven antioxidant effects. Other highlights at the Taiyo stand include functional ingredients such as concentrated Moringa seed extract and new Vegemeat concepts.

With Sunphenon EC, Taiyo offers a new variant in addition to existing green tea extracts. This product in the Sunphenon range is rich in epicatechin, which is found predominantly in cocoa and green tea, and has a proven positive effect on the cardiovascular system. Furthermore, a decrease in morbidity and mortality from cardiovascular diseases is associated with the consumption of flavanols¹. Therefore it is perfect for elderly people or other consumers who have problems with muscle health, such as muscle atrophy. The product has been specially developed for use in instant tea sticks, instant beverages or supplements.

Vitafoods visitors will also be able to learn more about Taiyo's Chia Protein XiaPure. Chia seeds are a real health-booster: They contain essential amino acids necessary for good health and they are an excellent alternative source of protein for sports nutrition. With XiaPure, a finely milled, high-quality vegan protein powder from Chile, Taiyo provides a new formulation for their Vegan Protein Shake. The chia protein makes the mouthfeel much smoother and Taiyo's ingredients: Sunfiber, Raw Coffee Powder and Sun-Active Zinc deliver added nutritional value. The concept can be used for ready-to-drink shakes or protein-enriched ice cream, and is available in three different flavours.

The third innovation Taiyo is presenting is the Sunfiber Water Concept. With this novelty, Taiyo addresses different target groups, including the ageing population. This generation often does not consume enough water or vital nutrients. This unique concept, however, allows for the production of isotonic drinks that contain less sugar and additional dietary fibre, allowing for much higher bioavailability of minerals. It is also possible to customize such beverages by adding more active ingredients such as Q10 or curcumin, depending on the target group. For example, children or athletes could benefit from the Sunfiber Water Concept, as these groups are dependent on a targeted nutrient intake.

Other highlights at the Taiyo stand include the various Sunfiber Blends with different added health benefits, as well as Mor-



inga, a standardised leaf powder with 1% glucomoringin that has anti-inflammatory properties, and new concepts surrounding the pea-based meat alternative Vegemeat for various consumer groups.

Dr Stefan Siebrecht, Managing Director at Taiyo's German subsidiary, says: "The Corona crisis has had a major impact on consumers interest in healthy eating. More and more people are questioning the ingredients in a product, and increasingly want natural and plant-based alternatives. Taiyo presents solutions and products with which the industry can meet these demands."

1 Heiss, C., C. L. Keen and M. Kelm (2010). "Flavanols and cardiovascular disease prevention." *Eur Heart J* 31(21): 2583-2592.

CHR. HANSEN No. 2 in Corporate Knights' 2022 ranking

Corporate Knights' 2022 ranking of the world's 100 most sustainable corporations recognizes Chr. Hansen's sustained focus on driving broad ESG progress and the positive societal handprint of its microbial products. For the 18th time, Canadian Corporate Knights has published their annual ranking of the world's 100 most

sustainable companies, based on a number of key environmental, social and governance (ESG) metrics. Global bioscience company Chr. Hansen has been included on the Global top 100 list for the past five years and this year ranks as no. 2.

Claus Dahlmann Larsen, CCO of Danish ice cream company Premier Is (Mejerigaarden A/S), part of the international ice cream and dairy production and distribution group Food Union, has been appointed CEO of the company. The former CEO of over 7 years Kim Gade Pedersen will remain in the company's Supervisory Board.



As of April 1, 2022, **Henrik Joerck Nielsen**, currently Senior Vice President Animal Health, will be promoted to Chief Scientific Officer at Chr. Hansen. He has a Ph.D. in Biotechnology from the Technical University of Denmark and National Institute of Health in Maryland. He did his post-doctoral research fellow at the National Cancer Institute in the US (2006-2008). After being with McKinsey six years, he joined Chr. Hansen in 2014. Predecessor Thomas Schäfer will step down as EVP and CSO effective March 31, 2022, and continue as Chief Science Advisor to CEO Mauricio Graber.



The flexitarian way of living. Tasty and nutritious plant-based ingredients.

A mind-boggling 25% of consumers globally are flexitarians. They are drawn to plant-based options because of their healthful appeal, ecological convictions or the pleasure of trying something new. BENEEO helps you develop plant-inspired options that are simply delicious. Sharpen up your recipe with natural ingredients that bring out pure flavours and exciting textures. Create a taste experience consumers will thoroughly enjoy with new and inspiring dairy-free or meat-free recipes. What will be your signature ingredient?

Come and visit us at

Plant-based Foods & Proteins Summit Europe

21-23 June 2022
Netherlands

Follow us on: [in](#) [yt](#) [tw](#)
www.beneo.com

beneo
connecting nutrition and health

Meet and greet at Grunwald

The world of a true pioneer

Flexible dosing systems and cutting edge innovations for the dairy industry will be in the centre of interest for the GRUNWALD stand



Face to face meetings with customers, potential customers and business partners, having technical and informative discussions and, at the same time, focusing on the inspiring technology of the exhibition machines will be the main aim for the Grunwald-Alm in Hall 7.1, Stand B-010 at Anuga FoodTec 2022 in Cologne. For Grunwald, this year's participation in the exhibition is primarily under the motto of "Meet and Greet" – conversations which provide the basis to generate ideas and develop solutions for dosing, filling, and packing products. Grunwald, the world of a true pioneer, look forward to welcoming their visitors.

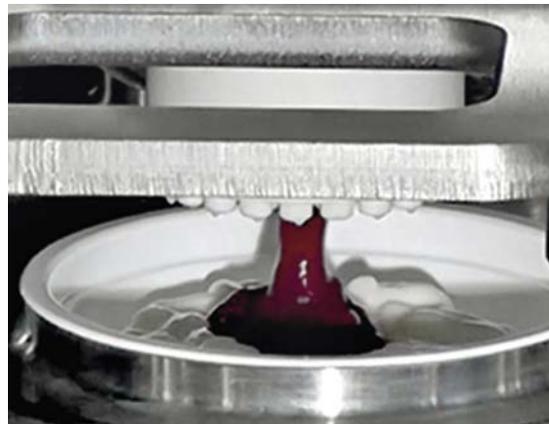
Since meetings had to be held via video conferences and travelling was limited for a long time, there remains great interest in meeting and exchanging ideas "face-to-face". The mechanical engineering company from the Allgäu region will take this new trend to create a slightly different approach for the design of their exhibition stand. In order to allow for conversations and physical meetings in compliance with the current corona-related hygiene regulations and to guarantee safety for everyone, the design of the Grunwald-Alm will include large open areas and plenty of space for visitors and social distanced conversations at the table.

Nevertheless, there will still be enough space for exhibition machines. They will show what is continuously in demand: in-house technical developments and state-of-the-art solutions for format flexible filling machines, as well as special dosing systems and technical solutions for user-friendly handling.

Sustainability and environmental compatibility

Grunwald consider themselves not only as a "typical supplier" but rather as a partner of the dairy and food industry, and thus feel obliged and responsible to ensure that their filling machines meet the highest quality, food safety and hygiene standards by using

With specially developed dosing technologies, a wide variety of products can be filled into cups and buckets with accurate weight and user-friendly handling.



state-of-the-art, advanced technologies, in this regard, Grunwald refer to their range of ultra-clean (UC) filling machines for filling and closing cups and buckets.

At the beginning of 2019, Grunwald already made a clear statement for sustainability, protection of their employees and high environmental compatibility with their ultraclean (UC) hygiene concept developed in-house.

The hub of this future-oriented technology is the pulsed light, high-performance UV(C) sterilisation, which was verifiably certified to be a guaranteed, reliable sterilisation process for Grunwald machines by several independent German institutes.

This ultraclean (UC) hygiene concept guarantees a sterilisation rate of at least LOG 4 with cups, buckets, Snap-on lids and lids at fully cycle speeds. Thus, Grunwald offer an alternative for the sterilisation of all packaging materials that does not pose a threat to health and, in addition, meets all requirements for compliance with maximum hygiene levels in the production of the dairy and food industry and that works completely without the use of peroxide.

Product safety

An important topic in times of increasing product recalls will be product safety. In this regard, Grunwald offer further technical options and design services which help to avoid technical risks and increase production reliability and product safety.

X-ray equipment provided by the customer downstream of the filling machine can be used to detect foreign bodies. Compared to the trade, this is a substantial additional benefit to guarantee safe food.

However, it will be even safer if foreign objects cannot get into the product at all, as this has been secured by the logical and safe design of Grunwald ultraclean (UC) machines for many years now.

Filling of milk substitutes with a "swirl" effect

One of the machines exhibiting at the Grunwald stand is a 4-lane rotary-type cup filling machine GRUNWALD-ROTARY 20.000E. This rotary-type filling machine shows that due to flexibility, quick change-over times, and special dosing techniques for up-to-date product presentations with liquid to pasty dairy and dairy substitute products, can be created with a fruit bottom layer, stirred multi-flavour and premium products ("multi-layer", "side-by-side", "swirl", "topping"). These filling and finishing methods can create great visual effects and help to inspire consumers to buy them.

To round off the product presentation and to give the product the title "home-made", this machine concept includes a free space for the provision of a mobile vibrating doser for garnishing dry spices and herbs, with accurate finishing product losses. Product losses and machine downtimes are reduced to a minimum. This universal high-performance cup filling machine can handle several cup sizes (Ø 75 mm, Ø 95 mm and various oval cups up to a height of 145 mm).





4-lane high-performance filling line GRUNWALD-ROTARY 20.000E for various milk substitute products; this machine concept allows for user-friendly and easy reloading of cups and snap-on lids

**10 lane cup filler
GRUNWALD-
FOODLINER 20.000UC
with pulsed light
high-performance
UV(C) sterilisation
system (sterilisation
rate \geq LOG 4),
fully-automatic
tunnel cleaning and
integrated tray packer**



In addition, this machine concept also considers user-friendly, easy reloading of cups and Snap-on lids. This rotary-type cup filler is, in particular highly attractive for use in the dairy industry.

As with dairy products, the portfolio for milk substitutes is based on the customer's requirements and ranges from small starter models to high-end filling lines.

GRUNWALD

Grunwald is an owner-managed mechanical engineering company located in Wangen im Allgäu. It 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 2,500 filling, dosing, and packing machines have

been supplied to dairies and various sectors of the food industry worldwide, the export quota is currently 90 %. Thanks to pioneering technical solutions in terms of hygiene, flexibility, speed, ease of operation and environmental friendliness, Grunwald consider themselves to be in a pioneering position. This is also reflected on the new website released at the beginning of this year.

Grunwald finished the financial year 2021 with record figures, despite the challenges imposed by the Covid 19 pandemic, sales increased once again and exceeded the amount of €38m. The number of employees increased to a peak of just over 200. The number of orders on hand in 2021 was the highest ever seen in the company's history. www.the-pioneer.com

Only one thing can match the eagle eye: The new **ALPMA** inspection system



Visit us at the **ANUGA-
FOOD
TEC** exhibition in Cologne from
26.04.2022 – 29.04.2022
Hall 4.1, Stand A 028 - A 010

Product recalls and quarantine of your products due to mould or film residuals are now a thing of the past!

The visual inspection of your operator can be good, but it takes an Eagle Eye to detect every time 24/7 mould or film residuals accurately. After extensive production verification ALPMA has found the solution to this problem: **The Eagle Eye! ALPMA's latest innovative inspection technology now gives you the world's best quality control with a hit rate > 99%.**

More Info: www.alpma.com/eagle-eye



Process Technology
Cheese Technology
Cutting Technology
Packaging Technology

ALPMA **SULBANA**

Mozzarella
Semi-Hard Cheese
Hard Cheese

www.alpma.com

Lipases from mushrooms for the production of cheese



Authors:

Dr. Miriam A. Sowa, Dr. Martin Gand, Working Group Prof. Dr. Holger Zorn, Institute of Food Chemistry and Food Biotechnology Justus-Liebig-University Giessen
M. Sc. Julia Manhard, Dr. Alexander Siegl, optiferm GmbH

Use of animal lipases for cheese production

Certain types of cheese are traditionally made with the addition of animal lipases (fat-hydrolyzing esterases) from the mouth and throat glands of goats, sheep or calves to form the characteristic flavor profile of these cheeses. For white cheese, brine cheese (such as Feta and its variants from cow's milk), Kashkaval and many Italian cheeses, the use of animal lipases is indispensable to obtain their distinctive character.

Lipases are enzymes that play an important role in the degradation of fats. They are naturally present in raw milk. Among others, lipases release short- and medium-chain fatty acids by hydrolysis of milk fat and thus contribute directly to the flavor of the cheese during its ripening. Free fatty acids not only affect the sensory properties of the product itself; they also contribute to other flavor-forming reactions. Lipases present in raw milk are heat-labile and are inactivated during the pasteurization process. This heat damage can be compensated by the addition of lipases from goat, sheep or calf into the cheesemaking milk. Lipases are used as natural means to intensify the flavor and aroma of cheese. The enzymes can be used to produce cheese with a strongly pronounced, spicy flavor profile, as is typical of provolone or pecorino. In particular, short-chain fatty acids with four to ten carbon atoms support the formation of the goat milk's aroma, which intensifies over the period of ripening. Due to the faster and stronger flavor development, storage costs and cheese ripening time are reduced.

Regulatory Issues

The problem is that none of the above-mentioned animal enzyme preparations can be considered kosher, halal or vegetarian, and the demand for such products is steadily increasing. As the dairy industry changes, the requirements for excipients and additives have also changed in recent years. Whey is produced in large quantities during cheese production. From the whey, ingredients such as whey protein, lactose and lactoferrin are extracted, refined and distributed worldwide. These products are also used in strictly regulated industries such as the pharmaceutical industry (e. g. lactose as a filler) and in rapidly growing markets, which – for reasons of faith – follow clearly defined dietary requirements. Accordingly, all food products supplied to such markets must be either halal or kosher. Therefore, cheese-making companies and whey-processing companies that export their products worldwide must have kosher and halal certification. optiferm GmbH – a medium-sized enterprise in Bavaria/Germany – has been supplying the dairy and the food industry with enzymes and cultures since 2002. The company has identified an urgent need to develop an innovative alternative that meets the requirements for a vegetarian, kosher and halal compatible product, which is of equal quality to animal lipases.

Enzymes from edible fungi

Fungi play a central role in the decomposition of biomass. They have a vast array of different enzymes which enables the fungi to degrade a wide variety of substrates. The term mushroom is gen-

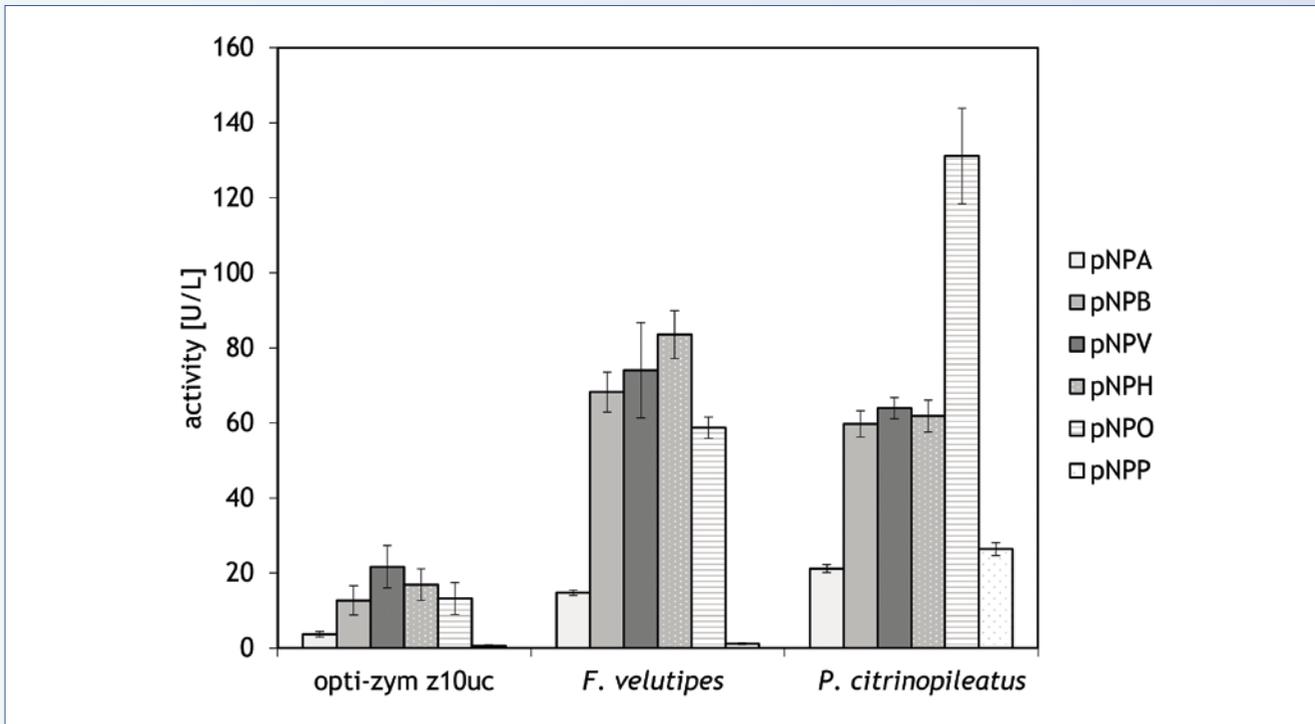


Figure 1: Photometrically determined activities of the reference enzyme opti-zym z10uc and of the enzymes secreted by *Flammulina velutipes* and *Pleurotus citrinopileatus* towards various *para*-nitrophenyl esters (PNP esters). These serve as substrates for the examined lipases and contain fatty acids of different chain lengths. A: Acetic acid analogue, B: Butyric acid analogue, V: Valeric acid analogue, H: Caproic acid analogue, O: Caprylic acid analogue, P: Palmitic acid analogue.



Figure 2: Liquid culture of various fungal mycelia. The cells of the fungal mycelium are incubated under defined, sterile conditions in liquid culture in the shaking flask.

erally used only for the visible fruiting body of a fungus, but "fungus" also includes the so-called mycelium. This is a finely braided network of fungal filamentary cells, which is mainly located in the substrate (e.g., humus or wood) on which the fruiting bodies of the fungi can grow. Numerous edible fungi, mainly of the phylum Basidiomycota, have been used worldwide for centuries. Therefore, their use in the food sector is considered safe. The use of enzymes from edible fungi for the production of food is, however, extremely innovative and offers a variety of advantages. Edible fungi usually have a very high enzyme yield and genetic optimization is therefore not necessary. In addition, the degrading enzymes are usually released (secreted) directly into the environment by the fungus, which eliminates the need for complex cell disruption protocols during industrial production.

Professor Holger Zorn's working group at the Justus-Liebig-University (JLU) Giessen has been working intensively for many years on edible fungi and their applications in food biotechnology, including enzymes, flavorings or natural dyes. The working group, for example, described and patented an esterase from a

mushroom of the phylum Basidiomycota (*Pleurotus sapidus*) for the first time.

Development of an alternative enzyme substitute from edible fungi

The working group of Prof. Zorn and optiferm GmbH are working on the development of lipases from edible fungi for use in the dairy industry as a substitute for the animal lipases used so far. In the course of the development process, 31 edible fungi were examined for their ability to form fat-hydrolyzing enzymes. In

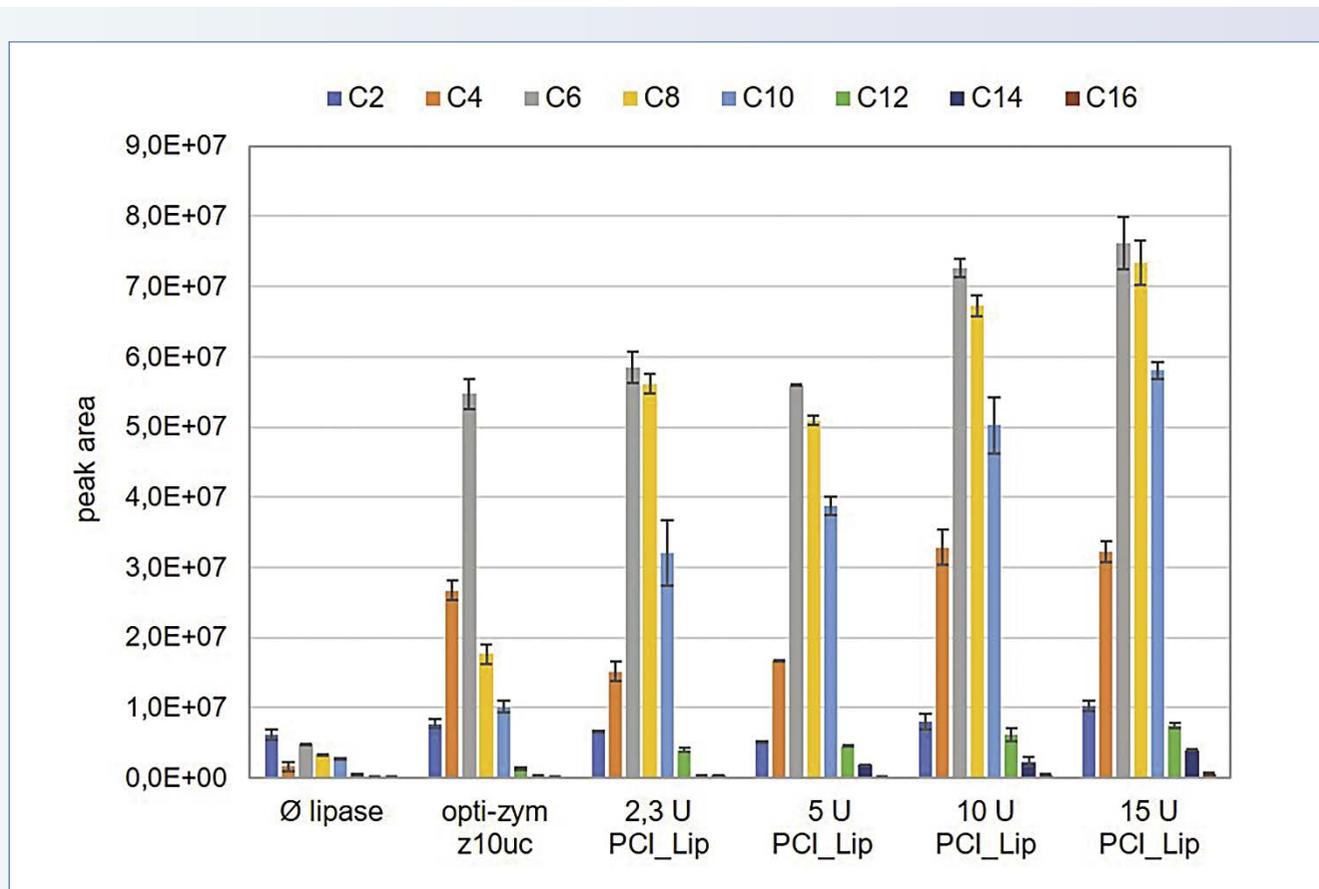


Figure 3:

Free fatty acids formed in brine cheese with lipase from *P. citrinopileatus* (PCI_Lip) after 30 days of ripening compared to the reference enzyme opti-zym z10uc. The peak areas (measurements in duplicate) determined by means of gas chromatography with coupled mass spectrometry after solid phase microextraction (SPME-GC-MS) and show the different doses of enzyme (2.3 - 15 U/3 L).

The comparable fatty acid profiles between reference and fungal lipase are clearly recognizable, which leads to the characteristic flavor of the cheese. As the dosage increases, more free fatty acids are produced. C2: Acetic acid, C4: Butyric acid, C6: Caproic acid, C8: Caprylic acid, C10: Capric acid, C12: Lauric acid, C14: Myristic acid, C16: Palmitic acid.

addition to the Enoki mushroom (alias Velvet Shank; *Flammulina velutipes*), the golden oyster mushroom (*Pleurotus citrinopileatus*) proved to be a promising candidate for the production of extracellular lipolytic enzymes. It has been shown that these mushrooms produce lipases that have a similar substrate specificity regarding the fatty acid chain length as compared to commercially available animal enzyme preparations (Fig. 1). For this purpose, the mycelium of edible mushrooms was cultivated in shaking flasks and bioreactors under defined conditions (Fig. 2). The fungal mycelium is subsequently separated and discarded, and the enzymes secreted from the fungus remain in the nutrient medium, from which they can be isolated and purified by various separation methods. The fungal lipases were then biochemically characterized at JLU Gießen. optiform GmbH carried out application tests with purified lipases from the culture supernatant, for the production of brine feta cheese on the basis of cow's milk, as well as with recombinant

variants of these lipases. The cheese produced was subjected to a gas-chromatographic analysis in Giessen after appropriate ripening intervals of several months, in order to gain insight into the free fatty acid profiles formed. In the chromatogram, the reference cheese produced from goat lipase opti-zym z10uc has a typical profile, which is formed by the release of short chain fatty acids from the milk fat, namely butyric acid, caproic acid, caprylic acid and capric acid (Fig. 3). In parallel, optiform GmbH carried out sensory analyses (Fig. 4). To validate the fatty acid profiles and flavor profiles, also the cheese produced with the reference goat lipase has undergone tasting. The cheeses made from fungal lipases showed no significant differences in consistency, texture, color and aroma when compared to the cheese control group made from goat lipase. The use of fungal lipases also resulted in very similar sensory properties, which are also reflected in the free fatty acid analysis of the cheese. In particular, the use of very low dosages



Figure 4: Cheese samples of the "feta" type after five weeks of storage at 13°C (1) and additional twelve (2) weeks storage at 4°C. The production was carried out without lipase (A), with 0.35 g/10 L opti-zym z10uc (B), with 15 U/3 L (C), 10 U/3 L (D), 5 U/3 L (E) and 2.3 U/3 L (F) lipase from *Pleurotus citrinopileatus*. The cheeses made with fungal lipases showed no significant differences in consistency, texture, color and aroma when compared to the cheese control group made from goat lipase.

provided sensory-appealing cheese with the desired flavor profile characteristic for goat lipase. Currently, the purification protocol of the lipases is further optimized and the dosage for the production of cheese is being adapted in order to maintain the desired flavor characteristics of the target product, using as less enzyme as possible. The innovative approach and the unique selling point of "lipases from basidiomycetes for use in cheese dairy" is protected by the European Patent No. 3434108. In addition, a toxicological report confirmed that the lipases are harmless from a toxicological point of view and are therefore, in principle, suitable for food applications.

Summary

Due to the described issues, the use of animal lipases for cheese production has already been eliminated in many places without replacement. To date, there is no adequate alternative to animal lipases available on the world market. Many cheese varieties will therefore disappear or lose their distinctive character. The result is a marked decline in the variety of regional and national cheeses. The enzyme preparation made of edible fungi developed by JLU Giessen and optiferm GmbH has great potential to enable the production of cheeses, which are traditionally produced with the aid of animal lipases under vegetarian, halal or kosher conditions and, at the same time, to maintain their characteristic profile.

Accordingly, optiferm GmbH is working intensively on converting the promising results of this cooperation project into a marketable product as quickly as possible and to offer it to interested customers.

Contact

Prof. Dr. Holger Zorn,
Institute of Food Chemistry and Food Biotechnology,
Justus-Liebig-Universität Giessen, Ph.: +49 641 99 34900,
holger.zorn@uni-giessen.de,
<https://www.uni-giessen.de/fbz/fb08/Inst/lcb/zorn>
Julia Manhard, optiferm GmbH, Ph.: +49 8366 81155 19,
jm@optiferm.de, <https://www.optiferm.de/>

Acknowledgments

This cooperation project was funded by the Federal Ministry for Economic Affairs and Energy (BMWi) and the Federal Ministry of Education and Research (BMBF). The project was supported by VDI/VDE Innovation + Technik GmbH within the framework of "Zentrales Innovationsprogramm Mittelstand (ZIM) – Kooperationsnetze", and by the Forschungszentrum Jülich GmbH within the framework of the initiative "KMU-innovativ: Biotechnologie-BioChance".

References

An overview of the scientific work of the Working Group Zorn on enzymes from edible mushrooms and their possible application in food biotechnology can be found here: https://www.uni-giessen.de/faculties/f08/departments/food-chemistry-and-food-biotechnology/zorn/publications?set_language=e

Results from this cooperation project are published under:

Sowa et al. (2022) Replacement of Pregastric Lipases in Cheese Production: Identification and Heterologous Expression of a Lipase from *Pleurotus citrinopileatus*. *J Agric Food Chem.*, <https://doi.org/10.1021/acs.jafc.1c07160>

Elopak boosts MENA offer

Naturepak Beverage acquisition completed



Elopak CEO Thomas Körmendi: This move greatly enhances our position in the Middle East and African markets (photo: Elopak)

Elopak has completed its acquisition of Naturepak Beverage from Naturepak Limited, a wholly owned subsidiary of Gulf Industrial Group, and Evergreen Packaging International LLC (Evergreen Packaging), a wholly owned subsidiary of Pactiv Evergreen Inc.

The acquisition of Naturepak, the leading gable top fresh liquid carton and packaging systems supplier in the MENA region, sees the addition of local production facilities in Morocco and Saudi Arabia to Elopak's extensive existing global network, which already encompasses customers across 70 countries. At the same time, it boosts annual production capacity by more than 2.5 billion cartons, supporting the company's ambition to meet the growing demand for sustainable packaging solutions.

The acquisition will also provide access to a strategic customer base in the fresh beverage carton segment in key growth markets, many of whom are global blue chip FMCG players and strong regional champions.

The acquisition marks a key milestone in Elopak's growth strategy. Having listed on the Oslo stock exchange in 2021, the company is seeking to capitalize on its strong track record, growing geographical footprint and investment in sustainability-focused innovations to target organic growth of 2-3% per annum. It is pursuing new business opportunities across both traditional and non-traditional segments, as well as driving the plastic to carton conversion.

Commenting on the acquisition Elopak CEO Thomas Körmendi stated, "We are delighted to have acquired such a high-quality asset in MENA. This move greatly enhances our position in the Middle East and African markets, enabling us to realize our ambitions of this growth region, as well as further strengthening our global footprint. Going forward we are excited to share our sustainable packaging solutions with Naturepak Beverage's client base and work hand-in-hand with them to find ways to reduce their carbon footprint and empower consumers to make environmentally conscious choices," he continued.

"As we strengthen our presence in the region, we continue to bring new products to market that provide natural and convenient alternatives to plastic bottles that fit within a low carbon circular economy. We are ready to leverage our expertise, market-leading technology and skills to grow our presence in the region across products, segments and markets," Körmendi explained.

About Elopak

Elopak is a leading global supplier of carton packaging and filling equipment. The company's Pure-Pak cartons are made using renewable, recyclable and sustainably sourced materials, providing a natural and convenient alternative to plastic bottles that fits within a low carbon circular economy. Founded in Norway in 1957, Elopak was listed on the Oslo Stock Exchange in 2021. Today it employs 2,600 people and sells in excess of 14 billion cartons annually across more than 70 countries.

Lekkerkerker Group

Ready for a bright future in new head office



The new head office of Lekkerkerker Group (photo: Lekkerkerker)

On March 17th, after more than a year, the opening of Lekkerkerker Group's new office building was officially opened. The new head office was built for both the machine branch (Lekkerkerker Dairy & Food Equipment) and the production branch (Lekkerkerker Food).

The step was much needed. The machine branch and the coordinating departments have experienced significant growth in recent years, so there was a need for more workplaces. The integration with Lekkerkerker Food's head office also ensures that the synergy between the companies is optimised.

The result is impressive, Lekkerkerker has built a sustainable building with all the amenities of today. A great meeting place for colleagues and all the necessities for online meetings and meetings with international customers.

A pleasant working environment will undoubtedly ensure that the Lekkerkerker Group will have even better coordination and cooperation and will contribute to further growth. Lekkerkerker Group is ready for a bright future.

When asked about the secret of their success, Lekkerkerker co-owner Niels Lekkerkerker, explains:
We owe our success for a large part to entrepreneurship. I mean that in the broadest sense of the word, because entrepreneurship is to be found throughout our company. (photo: Lekkerkerker)



The new Lekkerkerker facilities were officially opened on 17 March 2002 (photo: Lekkerkerker)

What influence does foaming have on the release and perception of aroma compounds in dairy products?



Authors:

C. Borsum, J. Hinrichs, University of Hohenheim, Inst. of Food Science and Biotechnology, Dept. Soft Matter Science and Dairy Technology, Garbenstrasse 21, D-70599 Stuttgart, Germany

For many years, companies have been reformulating foods with the aim to reduce salt, sugar and fat consumption. Meanwhile, based on the "White Paper on Nutrition, Overweight and Obesity related health issues" (European Commission, 2007), many EU member states promote and call for food reformulation "as a relationship prevention building block of a holistic approach" to "facilitate healthy diets, especially for those population groups that are not reached or poorly reached by behavioral prevention measures" (German Federal Ministry of Food and Agriculture, 2017).

However, if fat is reduced in a dairy product formulation, the desired effect of energy reduction is accompanied by a different sensory impression, which is usually less preferred. In addition to the change in mouthfeel, this is mainly due to the absence of fat as a reservoir for aroma substances. Aroma compounds are released from this reservoir during consumption. It should be investigated whether the release of aroma substances from fat-free milk matrices can be influenced in another way. Qualitative sensory preliminary studies showed, for example, that the aroma perception is more intense in foamed products.

When a food product is consumed, various physical processes take place that influence aroma perception (Fig. 1). In the closed package, there is initially an equilibrium between the aroma concentration in the food matrix and the headspace, which is perceived as an odor via the olfactory sensors of the nose (orthonasally¹) when the package is opened. Diffusively², the matrix

further releases aroma substances via the surface. If a portion is now transferred to the mouth, the increased temperature and the mechanics of chewing support the release of aroma substances. The interaction of these processes results in what is known as retro-nasal aroma perception, in that aroma substances are conducted to the olfactory sensors during swallowing and exhalation. Other influencing factors such as saliva, chewing intensity and breathing make an individually varying contribution by strengthening or weakening aroma perception, as studies have shown.

But why should the aroma perception be more intense during consumption of a foamed food than an unfoamed one? Is it related to the disintegration of the bubbles, which release contained aroma substances in an "aroma boost"? Or do processes take place at the enlarged interface that influence the release?

To investigate these questions, a simplified model system (mouth model) was first constructed to study the physical processes of aroma release. The simplified model consists of a 90 mL vial containing 10 g of sample heated at 40 °C in an incubator (Thomas et al., 2020). The model milk matrix contained 4% milk protein, was stabilized with gelatin, and acidified with glucono- δ -lactone for gel formation. Ten key aroma compounds, mostly derived from herbs, spices, or dairy products, were added to the matrix. They differed on the one hand in their solubility behavior³, on the other hand in their volatility⁴. An overrun of approx. 150 % was achieved by foaming. When the model milk matrix prepared in this way is heated to 40 °C, softening occurs, which in the case

of the foamed matrix leads to bubble collapse. The aroma release from the foamed matrix is compared to the unfoamed matrix, which serves as a reference.

In the mouth model, the temporal increase of the aroma concentration in the headspace above the matrix (= aroma release), which was initially almost free of aroma molecules, was determined using a combined method of solid-phase microextraction, gas chromatography and ion mobility spectrometry (Thomas et al., 2021).

Exemplary release curves of two aroma compounds are shown: More methyl salicylate was released from the unfoamed matrix than from the foamed matrix (Fig. 2 A), but less 2-dodecenal (Fig. 2 B), while some aroma compounds showed no significant difference in release (Thomas et al., 2022).

To which of these categories the aroma compounds belonged could be explained by their solubility behavior in water or octanol ($\log P$ value). Foaming increased the release of the highly hydrophobic aroma substances ($\log P > 3$, e.g. 2-dodecenal, limonene) and decreased that of aromas exhibiting medium hydrophobicity ($\log P = 2 - 3$, e.g. methyl salicylate, ethyl butanoate, camphor). Hydrophilic aroma compounds ($\log P < 2$, e.g. diacetyl, ethyl vinyl ketone) were not affected in their release by foaming.

In contrast, volatility of the aroma substances did not play a role in aroma release from the milk matrix, which is a new finding. For example, limonene ($p_0 = 2.07$ hPa) is significantly more volatile than 2-dodecenal ($p_0 = 0.01$ hPa), but both aroma substances exhibit comparable release behavior from the foamed model milk matrix.

For coffee crema, a different picture was reported: the higher the volatility of the aroma substance, the more aroma substances are released during foam collapse (Dold et al., 2011). Hydrophobicity did not play a role. It can therefore be assumed that the release of aroma substances in the oral cavity (as well as the aroma partition in equilibrium) is determined by the composition of the food matrix.

In the case of a foamed fat-free milk matrix, the interface of the gas bubbles is stabilized by hydrophobic regions of the milk proteins, possibly accompanied by a conformational change. These hydrophobic regions of the proteins are thus available to a lesser extent for interactions with aroma compounds. Therefore, the aroma substances that interact with hydrophobic regions of the proteins in the unfoamed matrix (reference) have fewer interaction partners available in the foamed matrix and are released to a greater extent. Aroma substances of medium hydrophobicity showed a different behavior, as they were even bound more by

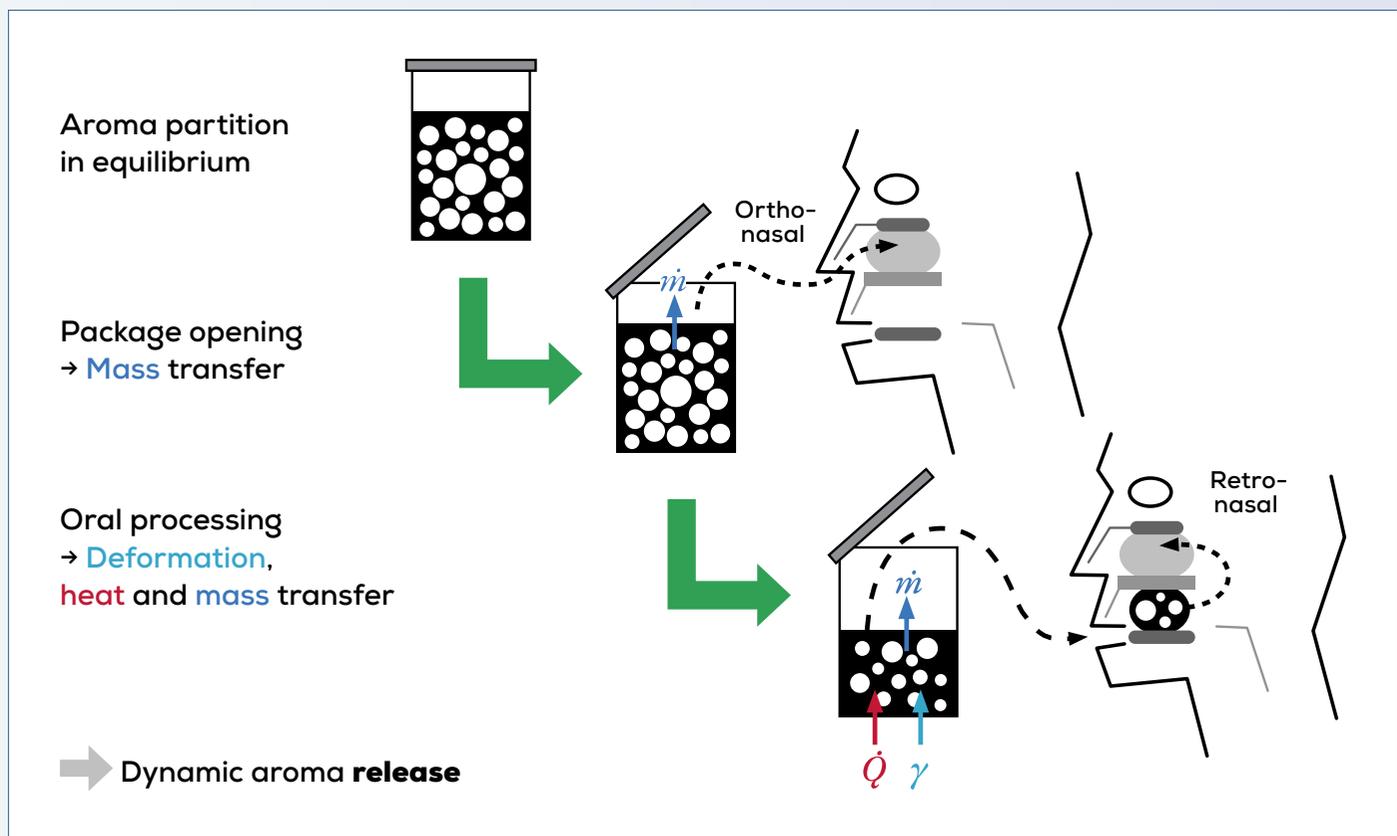


Figure 1: Physical processes during aroma release in the mouth

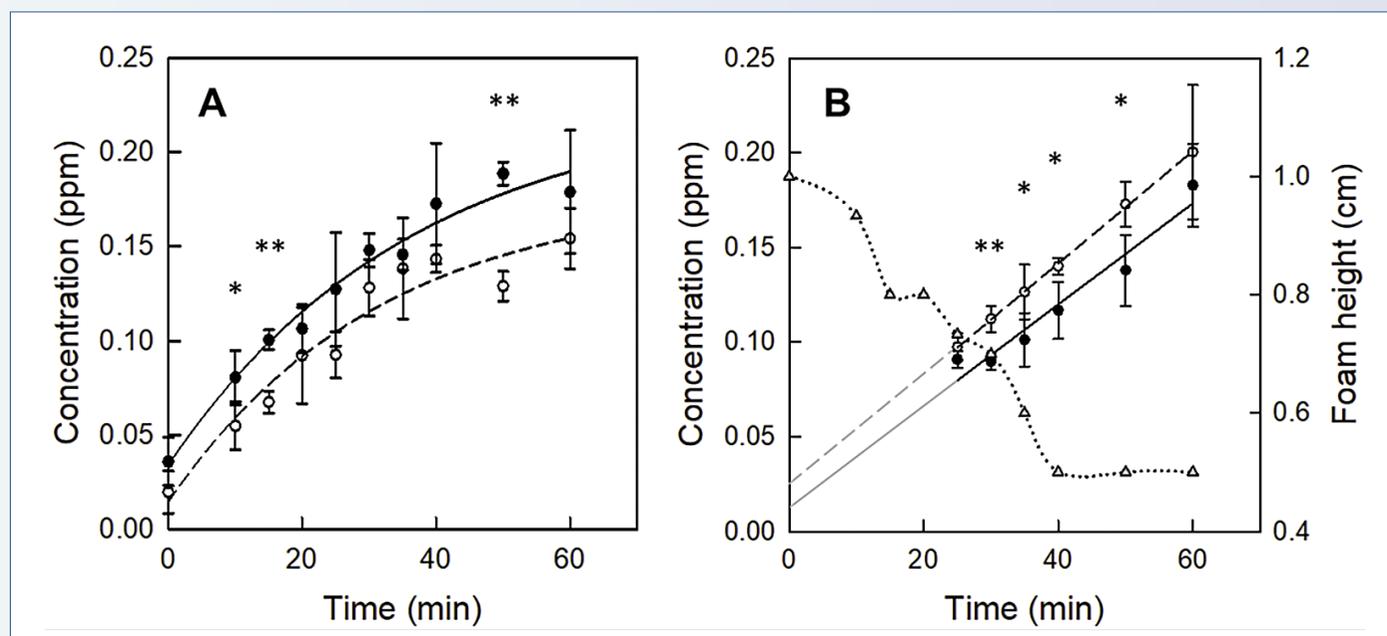


Figure 2:

Aroma release of methyl salicylate⁵ (A) and 2-dodecenal⁶ (B) from foamed (white dots) and unfoamed (black dots) milk matrix (4% milk protein, 1% gelatin, pH 4.5) and foam height (B, gray triangles) during heating to 40 °C. gray lines: Measurement signal for 2-dodecenal below limit of quantification; *, significant difference (* 10 %, ** 5 % probability of error).**

the foamed matrix. Presumably, the changed conformation of the proteins at the bubble interface leads to more binding sites for these aroma compounds.

In the mouth model experiment, the foam had completely collapsed after approx. 40 min (Fig. 2 B), so that the foamed matrix no longer differed in texture from the reference. However, as shown in Fig. 2, the aroma release curves still deviate after 60 min. Equilibrium in the system does not seem to have been reached yet. This means that – although the bubbles have disintegrated and thus an unfoamed matrix is present – the aroma compounds are bound to the matrix differently than in the unfoamed reference. After extending the observation time to 24 h at 40 °C, it was found that the effect of the introduced and collapsed gas bubbles is still detectable for hours. This "memory effect" is probably due to a reversible conformation of the proteins previously localized at the bubble interface. Only when the protein is again in the conformation as in the unfoamed matrix, the equilibrium in the aroma distribution matrix-headspace is restored as in the reference. The "memory effect" could be interesting for product development. Example: Even if a foamed, fat-free, milk protein-based spread partially loses its bubble structure during spreading, the aroma release will differ significantly from the unfoamed spread of the same composition.

After a change in aroma release due to foaming had been established with the aid of the simplified mouth model, the question

remained whether this difference was large enough to be recognizable to consumers. Sensory studies were carried out for this purpose. Firstly, the odor of the ten aroma substances in foamed and non-foamed matrix was compared. Second, the panelists were asked to quantify the "taste" during consumption, which is caused, among other things, by retronasal olfactory perception.

The aroma compounds were added to the matrix individually, at concentrations previously determined to be pleasant. The attributes that best described the aroma compounds were recorded using descriptive analysis and the panel was trained on them. During consumption, intensity was queried immediately after sample intake, during chewing, and after swallowing.

Significant differences were found between the foamed and unfoamed samples in both odor and during consumption. For example, most panelists rated the intensity of allyl isothiocyanate (occurrence in mustard) as higher during consumption of the foamed milk sample compared to the reference. Camphor (occurrence in rosemary) was perceived more intensely in the unfoamed reference. Thus, both effects – increased as well as decreased aroma release by foaming –, which were found analytically, could be detected during the sensory studies. For five of the aroma substances investigated, the results of the sensory studies were in agreement with those determined in the mouth model. The differences can probably be attributed to the longer observation time; a food spends only seconds in the mouth rather than an hour. Addition-

ally, the mouth model considers physicochemical processes alone; individual physiological differences in saliva, respiration, and mechanical processing are not considered.

The next step is to investigate how a product should be foamed (gas content, bubble size) in order to specifically control aroma perception.

Acknowledgements

These studies were made possible by funding within the project "Introduction of gas bubbles into fat reduced fermented milk products to generate a creamy texture with forced release of aroma compounds upon consumption" (AiF 20529 N), which is a collaboration between the Department of Soft Matter Science and Dairy Technology at the University of Hohenheim led by Prof. Hinrichs and the new Department of Flavor Chemistry led by Jun.-Prof. Zhang. Our thanks go to the students who supported us with their bachelor or master thesis in this topic, the staff of the departments and the PhD students of the previous projects on which we could build. The idea for this project is based on results of the

- 1 Sensory perception by inhaling through the nose
- 2 Diffusion: naturally occurring process to compensate for differences in concentration due to Brownian molecular motion
- 3 Whether a substance is more likely to dissolve in hydrophilic or hydrophobic solvents is often expressed as a log P value, which describes the partition coefficient between water (negative value) and octanol (positive value). Many aroma substances are very hydrophobic.
- 4 The affinity of a substance for the gas phase is expressed by the saturation vapor pressure p_0 . Aroma substances are often highly volatile.
- 5 Odor sweet, minty, balsamic; key odorant of wintergreen
- 6 Odor of citrus fruits; key odorant of coriander

Dold, S., C. Lindinger, E. Kolodziejczyk, P. Pollien, S. Ali, J.C. Germain, S.G. Perin, N. Pineau, B. Folmer, K.H. Engel, D. Barron & C. Hartmann (2011): Influence of foam structure on the release kinetics of volatiles from espresso coffee prior to consumption, *Journal of Agricultural and Food Chemistry* 59(20): 11196-11203.

Thomas, C. F.; Ritter, J.; Mayer, N.; Nedele, A.-K.; Zhang, Y.; Hinrichs, J. (2022): What a difference a gas makes: Effect of foaming on dynamic aroma release and perception of a model dairy matrix. *Food Chemistry* 131956.

Thomas, C.F., K.J.F. Thienel, T. Stefan, C.M. Schmidt & J. Hinrichs (2020): Design of in vitro model to study oral aroma release: Experimental study and numeric simulation of heat transfer in a foamed dairy matrix, *Journal of Food Engineering* 278 109940.

Thomas, C.F., E. Zeh, S. Dörfel, Y. Zhang & J. Hinrichs (2021): Studying dynamic aroma release by headspace-solid phase microextraction-gas chromatography-ion mobility spectrometry (HS-SPME-GC-IMS): method optimization, validation, and application, *Analytical and Bioanalytical Chemistry* 413(9): 2577-2586.

project "Influence of foam composition and structure on aroma release and aroma perception of foamed food systems", which was carried out 2011 – 2014 within the DFG-AiF Cluster 5 "Protein foams in food production – mechanism elucidation, modeling and simulation" in collaboration with the German Research Institute of Food Chemistry under the direction of Prof. Schieberle.

MULTIVAC

New Business Unit

MULTIVAC has set up a new Business Unit, called Corporate Training & Innovation Center and Partner Products (CTIC PP). The expansion of the Corporate Training & Innovation Center includes Partner Products & Consumables, particularly films and trays.

The range of products and services of the new Business Unit extends from packaging development and consultancy on packs and materials right up to packaging application technology, including sample productions and customer trials with suitable materials.

No.1 specialist in reconditioned dairy machines



Milk

Yogurt

Butter

Margarine

Processed cheese

Cheese



2.000 machines in stock

Warranty

Fast delivery times

Low investment

Complete projects

+31(0)348-558080
info@lekkerkerker.nl

www.lekkerkerker.nl



IDF Dairy Innovation Awards

Focus on Sustainability – Entries can be submitted



Join us at the IDF Dairy Innovation Awards 2022

Author: Caroline Emond, Secretary General International Dairy Federation

Designed to celebrate and encourage innovative practices across the global dairy sector, the International Dairy Federation (IDF) has recently launched the IDF Dairy Innovation Awards (DIA) in partnership with Zenith Global and supported by headline sponsorship from Tetra Pak.

With a particular focus on Sustainability, both in terms of environmental care and positive social impact, the awards seek to stimulate innovative practices that improve farming and processing of milk and dairy foods. New technologies such as Robotics, the Internet of Things, Artificial Intelligence, Alternative Energies applied to Dairy are some of the cutting-edge processes that the organizers expect to find among registered candidates.

The entries can be submitted from April 1 to July 1 through the IDF DIA's website within twelve awards categories: Innovation in sustainable farming practices for the environment, animal care, and socio-economic impact, Innovation in sustainable processing, Innovation in research and development for farming, collecting & processing, new product development, food safety consumer nutrition, Innovation in sustainable packaging, Innovation in school milk programs and Innovation in Climate Action.

"Innovation is part of IDF's DNA from its foundation back in 1903", explains Piercristiano Brazzale, President of IDF. "Our mission is to foster the use of science, technology, and innovation to ensure the production and processing of milk and dairy products

in safe, nutritious, and sustainable ways", he adds. "We believe that this award will help innovative practices to be known and shared among relevant dairy actors at a global level", Mr. Brazzale states.

The award winners will be announced on 12 September 2022 in a ceremony at the IDF World Dairy Summit in New Delhi, India. The World Dairy Summit is considered the most important meeting of the year for the global dairy community. As this edition will be held after a two-year recess due to the pandemic, the 2022 summit is expected to be attended by many participants from all over the world. This will give the winners of all the categories an unparalleled opportunity to be acknowledged and to have their innovations promoted among the most influencing personalities in Dairy's global agenda.

"We really expect to have entries from all over the world since innovation takes place everywhere at many different levels", Mr. Brazzale affirms. "We wish to identify these innovations to see them being put in practice globally to help dairy advance at a similar pace in all regions", he adds. "This is particularly important for sustainability, one of the pillars of our organization, since we aim to have the best sustainable practices as a gold standard for dairy all around the world", he concludes.

For further information, please check IDF Dairy Innovation Awards - Zenith Global

Against stress and lack of sleep

Micronutrients for mental well-being and cognitive performance

Many micronutrients support mental well-being, cognitive performance and brain health. SternVitamin has developed new micronutrient premix concepts that support cognitive performance and mental well-being. They relieve stress and improve brain function, while also reducing the negative effects of stress.

Foods and drinks with selected vitamins and minerals that support brain functions and performance are seeing strong growth around the world. The number of new product launches in this segment rose by around 55 percent just from April 2020 to March 2021.



Vitamin-mineral supplements with mental health claims grew 23 percent annually from 2017 to 2021 (photo: SternVitamin)

News

DSM Delvo Guard culture range extended

DSM has launched four new Delvo Guard bioprotective cultures, enabling yogurt manufacturers to naturally extend shelf life while maintaining a great taste and texture. The new cultures contain naturally occurring dairy microflora and provide a cost-effective solution to improve the quality and safety of dairy products. The new culture range provides better control for dairy manufacturers over post-acidification, gas production and decolorization, as well as improvements to creaminess and mouthfeel while extending shelf life.

The extended range includes Delvo Guard 302 and Delvo Guard 303 which offer protective properties that prevent or delay the growth of spoilage organisms by days or even weeks, even during challenging situations such as cold breaks in the supply chain. Also in the range, Delvo Guard 304 and Delvo Guard 305 have a lower post-acidification impact while still providing protection against microbial spoilage.



DSM has extended the Delvo Guard bioprotective cultures range (photo: DSM)

News

CHR. HANSEN Study of consumer understanding of probiotics

Chr. Hansen has made a global survey deployed in 16 countries around the world to gauge consumer awareness of probiotics and their potential benefits. The data was collected in 2021 and results reflect a strong interest in learning more about probiotics among consumers worldwide, signaling a new chapter for market trends and a valuable opportunity for players in the global food industry. In total, 16,000 people participated in the survey. Key findings:

- » 75% of the surveyed population reported being very or somewhat familiar with probiotics
- » 50% are familiar or very familiar with the term 'gut microbiome'
- » 48% of respondents consume probiotics daily or almost daily.

More than half of consumers have received a recommendation to consume probiotics from someone they trust. The flavor of the product and trust are top drivers for choosing and staying with a particular brand of probiotic food.

Despite reported awareness, there is a range of misconceptions about probiotics. For example, 47% of consumers agree or somewhat agree to the incorrect statement that all dairy yogurts contain probiotics (when in fact most contain live cultures but not all contain probiotic cultures).
chr-hansen.com



A new survey has unveiled continued consumer interest in probiotics (photo: Chr. Hansen)

News

EDA Dairy Policy Conference 2022

The New Policy Framework for European Dairy



The crisis in markets and energy supply triggered by the Ukraine war is no reason to neglect sustainability efforts. "Now is not the time to pause," said Michael Scannell, Director for Markets & Observatory at DG Agri, in a welcome address at the Dairy Policy Conference of EDA (European Dairy Association) in Brussels on 15 March.

The conference, which was attended by 130 live and 60 online participants, was held under the motto "The New Policy Framework for European Dairy". The importance of the food and dairy sector, emphasised EDA President Giuseppe Ambrosi, has become much more prominent with the Ukraine crisis. In fact, the European dairy industry has a global leadership role to play in ensuring food security at a reasonable price. The crisis triggered by Putin should not be a reason to abandon the path towards a 100% sustainable dairy industry, Ambrosi stressed.

The Ukraine war has global consequences, explained Scannell, particularly with regard to the supply of wheat to North Africa and

the Middle East. Ukraine itself is now also facing an emergency situation, as the fields of this country cannot be cultivated or can only be cultivated insufficiently. "We may have to supply Ukraine as well," the EU official said. In addition to energy imports, the EU's dependence on feed and fertiliser from Eastern Europe is also a problem. But the EU entered the crisis from a strong position, and the benefits of the CAP, especially for food security, have now been proven, Scannell said. The overall goal now must be to reduce the EU's dependence on fossil fuels. The Green Deal is not a contradiction to overcoming the crisis, said Scannell, who is convinced that EU food & dairy will master both challenges.

The EU Commission has set up a Food Security Crisis Committee and will adopt a package of measures to address the crisis on 23 March 2022. Brussels will make funds available to the member states, which are to increase them nationally to support the most affected sectors and increase the production of feed and food. Milk, however, is not a priority here in view of the current milk prices.



EDA President Giuseppe Ambrosi: The crisis triggered by Putin should not be a reason to abandon the path towards a 100% sustainable dairy industry



Michael Scannell, Director for Markets & Observatory at DG Agri: EU food & dairy will master the challenges from the Ukraine war and the Green Deal



Barbara Otte-Kinast, Minister of Agriculture of the German Bundesland Lower Saxony: We have to prevent disruption of rural structures



Marie Thérèse Bonneau, Vice-President FNPL: France Carbon Agri Association helps farmers finance CO₂ reduction



Dr Anne-Catherine Dalcq, Vice-President of the Walloon Fédération des Jeunes Agriculteurs: Farmers must receive a fair share of the added value

Regional circular farming

Barbara Otte-Kinast, Minister of Agriculture of the German Bundesland Lower Saxony, stressed in an online presentation that the Ukraine crisis has highlighted the importance of a functioning food and agricultural sector. Otte-Kinast said she wanted to prevent structural disruption in any case, as this would have far-reaching social and also ecological consequences. Animal husbandry has an important climate protection function, especially in grassland. Although milk prices are currently high, one has to ask how much of this ends up with producers, Otte-Kinast said, stressing that the position of agriculture in the market must be improved. The politician sees a pillar for the future in regional economies with stable supply chains and reintegration of previously outsourced processes. This is circular economy as outlined in the farm-to-fork strategy.

CO₂ reduction in practice

Marie Thérèse Bonneau, Vice-President of the French Milk Producers' Federation (FNPL), explained a way in which farmers can finance their commitment to CO₂ reduction. For this purpose, the organisation France Carbon Agri Association (FCAA) was founded. Participating farmers set up individual programmes for CO₂ reduction, partners in industry and relevant organisations buy CO₂ certificates based on this and thus reduce the emission burden. There are now 950 farms participating in FCAA, which together reduce 600,000 t of CO₂. The industry partners pay 30 € per ton of CO₂.

The view of young milk producers

Dr Anne-Catherine Dalcq, dairy farm owner and Vice-President of the Walloon Fédération des Jeunes Agriculteurs (Young Farmers' Federation), stressed that the next generation of dairy farmers is ready for the necessary change. However, in view of the diversity of farms, no uniform set of measures should be imposed on agriculture. All measures have to be defined on the basis of reliable data and be geared to the long term. This applies in particular to agricultural services for the ecosystem, and farmers must receive a fair share of the added value.

Clotilde Eudier, herself a farmer and vice-president of the French department of Normandy, outlined in an online contribution how her region wants to secure the future of dairy farming. The focus is on keeping farmers financially viable even in this time of change.



Worldwide trading

Tel: +31 348 460 009

sales@useddairyequipment.com

www.useddairyequipment.com



We are looking for

Used machines:

Processed cheese machines

Brands: Stephan, Karl Schnell, IMA Corazza, Kustner

Margarine machines

Brands: SPX Gerstenberg - Schröder, Bock & Sohn

Butter machines

Brands: Benhil, SIG Ecopack, Hassia, Trepko, GEA Ahlborn, Egli, SPX

Also complete dairy factories

Cheese cutting machines



ALPMA Alpenland Maschinenbau GmbH

Alpenstrasse 39 – 43
83543 Rott am Inn, Germany
Phone: +49 (0)8039 401 0
Fax: +49 (0)8039 401 396
Email: contact@alpma.de
Web: www.alpma.de



GROBA BV

Mangaanstraat 21
6031 RT Nederweert, Niederlande
P.O. 2740, 6030 AA Nederweert
Telefon: +31-475-565656
E-Mail: info@groba.eu
Web: www.groba.eu



holac Maschinenbau GmbH

Am Rotbühl 5
89564 Nattheim, Germany
Phone: +49 (0)7321 964 50
Fax: +49 (0)7321 964 55 0
Email: info@holac.de
Web: www.holac.de

Cheese technology



ALPMA Alpenland Maschinenbau GmbH

Alpenstrasse 39 – 43
83543 Rott am Inn, Germany
Phone: +49 (0)8039 401 0
Fax: +49 (0)8039 401 396
Email: contact@alpma.de
Web: www.alpma.de

Ingredients



Improving food & health

Chr. Hansen GmbH

Große Drakenburger Str. 93-97
31582 Nienburg, Germany
Phone: +49 (0) 5021 963 0
Fax: +49 (0) 5021 963 109
Email: decontact@chr-hansen.com
Web: www.chr-hansen.com

Packaging technology



ALPMA Alpenland Maschinenbau GmbH

Alpenstrasse 39 – 43
83543 Rott am Inn, Germany
Phone: +49 (0)8039 401 0
Fax: +49 (0)8039 401 396
Email: contact@alpma.de
Web: www.alpma.de

Reconditioned dairy equipment



Lekkerkerker Dairy & Food Equipment

Handelsweg 2
3411 NZ Lopik, the Netherlands
Phone: +31-348-5580 80
Fax: +31-348-5548 94
Email: info@lekkerkerker.nl
Web: www.lekkerkerker.nl

Software



CSB-System AG

An Fürthenrode 9-15
52511 Geilenkirchen, Germany
Phone: +49 2451 625-0
Fax: +49 2451 625-291
Email: info@csb.com
Web: www.csb.com

The business IT solution for your entire enterprise



(photo: Emerson)

Radar solves level measurement challenges
Technology/IT



(photo: Stäubli)

Fully automated cheese maintenance with a robot
Technology/IT



(photo: Vorotnikov)

Dark times for the dairy industry in Iran
Country report



(photo: Miona Dairy)

The first 100% regenerative cheese plant
Site report

Imprint

Publisher:

B&L MedienGesellschaft mbH & Co. KG Hilden, Verlagsniederlassung Bad Breisig, Zehnerstr. 22 b, 53498 Bad Breisig/Germany, Fax: +49 (0) 26 33/45 40 99, Internet: www.international-dairy.com

Managing Director:

Harry Lietzenmayer, Stephan Toth, Björn Hansen

Object Manager:

Burkhard Endemann, Direct line: +49 (0) 26 33/45 40-16, Email: be@blmedien.de

Editor:

Roland Sossna (responsible), Office Dülmen/Germany, Direct line: +49 (0) 25 90/94 37 20, Cell phone: +49 (0) 1 70/4 18 59 54, Email: sossna@blmedien.de

Anja Hoffrichter, Office Dorsten/Germany, Cell phone: +49 (0) 178 233 0047, Email: ah@blmedien.de

Food Ingredients:

Max Schächtele, Mengener Str. 2, 79112 Freiburg im Breisgau, Germany, Direct line: +49 (0) 76 64/61 30-96, Cell phone: +49 (0) 172 357 0386, Email: ms@blmedien.de

Correspondents:

Ferda Oran, Middle East, ferdaoran@hotmail.com; Jack O'Brien, USA/Canada, executecmktg@aol.com; Joanna Novak, CEE, Joanna.Novak@sparks.com.pl; Tatyana Antonenko, CIS, t.antonenko@molprom.com.ua; Mario Schacher, South America, supermario@gmx.com; Brian Norwood, Australasia & Pacific, ttoronto@bigpond.net.au; Chris Walkland, UK & Ireland, chriswalkland@ntlworld.com; Bent Oestergaard, Scandinavia, OCon ApS, bent@ocon.one, Claudia Vasquez Alarcon, Spain/Portugal, cva@blmedien.de

Graphics, layout and production:

Silvia Schneider, Office Solingen/Germany, Cell phone: +49 (0) 170 297 5864, Email: s.schneider@blmedien.de

Advertising Manager:

Heike Turowski, Office Marl/Germany, Direct line: +49 (0) 23 65/38 97 46 Fax: +49 (0) 23 65/38 97 47, Cell phone +49 (0) 1 51/22 64 62 59, Email: ht@blmedien.de

Publisher's International representative:

dc media services, David Cox, 21 Goodwin Road, Rochester, Kent ME3 8HR, UK, Phone: +44 845 393 1574, Email: david@dcmediaservices.co.uk

Subscriptions:

B&L MedienGesellschaft mbH & Co. KG, Office Munich, Ridlerstr. 37, 80673 Munich/Germany

Sales manager: Patrick Dornacher, Direct line: +49 (0) 89/3 70 60-3 71 Email: p.dornacher@blmedien.de

IDM International Dairy Magazine is published eight times a year (January, February, April, June, August, September, November). Annual subscription rate: € 86.00 incl. postage Subscr. in Germany: € 70.00 incl. postage + VAT Single copy: € 16.00 incl. postage Orders from Germany add VAT

Bank details: Commerzbank AG, Hilden; IBAN: DE58 3004 0000 0652 2007 00; SWIFT-BIC.: COBADEFFXXX

Cover page:

GRUNWALD

Print:

Ortmaier-Druck GmbH, Birnbachstraße 2, 84160 Frontenhausen, Germany The magazine is printed on chlorine-free paper.

Economically involved in the legal sense of § 9 Abs. 4 LMG Rh.-Pf.: B&L MedienGesellschaft mbH & Co. KG, Verlagsniederlassung Bad Breisig, Zehnerstraße 22b 53498 Bad Breisig.

Economically involved in the legal sense of § 9 (4) LMG Rh.-Pf.: Owner of B&L Medien-Gesellschaft mbH & Co. KG D-40724 Hilden (shares in brackets): Renate Schmidt (38.8 %), community of heirs Ulla Werbeck (31.2 %)

Subscribe to International Dairy Magazine!



The magazine for business success

A subscription to IDM International Dairy Magazine pays off rapidly! Readers receive up-to-date information about production and market trends. This helps readers to optimise their processes.

What you get for a €86 annual subscription:

IDM has exactly all facts and information that successful managers in the dairy industry need:

- » each topic professionally investigated and summarized for the busy reader
- » comprehensive and precise – without any inert information
- » Six printed copies with articles and reports about process technology, automation, packaging, ingredients and logistics. In addition: markets, opinions, backgrounds
- » Chart service for all graphics published in IDM International Dairy Magazine

Please send your answer to Email:

m.reischl@blmedien.de

Fax: + 49 (0) 89/3 70 60-1 11

B & L MedienGesellschaft mbH & Co. KG
Abo-Service "International Dairy Magazine"
Ridlerstraße 37, 80339 Munich, Germany