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# DAIRY

November/December 2021

magazine

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## Go for gold with the Silver Generation. Palatinose™ adds vitality the balanced way.

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# Parliament drivvel, nothing more

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Roland Sossna  
Editor IDM  
International Dairy Magazine  
sossna@blmedien.de  
[international-dairy.com](http://international-dairy.com)

We have long-since been acquainted with politicians saying strange things and pretending that what they propose will solve problems or improve certain situations. Most of the time nothing happens, sometimes, if politicians succeeded in pushing through dumb concepts, situations can change – although quite often for the worse. This is an ongoing process throughout the history of mankind.

Brexit, for instance, has brought a huge number of changes, and for the moment some aggravation of the economic situation. But in the longer run, Brexit will surely offer more positive opportunities than it will harm. Luckily, the Brits now no longer have to listen to the European Parliament and the considerable number of dimwits that it houses. We need not think of the ominous European migration pact that is currently in preparation, let's just focus on the European Green Deal. There is still discussion about whether climate change is man-made or not and a good number of internationally renowned scientists simply say that at most the change has been accelerated a bit by GHG emissions. Considering we had glacial and warm periods before the arrival of mankind, vehicles and heavy industries, it stands to reason that the sole focus on GHG is not sufficient at all. We should rather adapt ourselves to the Holocene we are living in than try – effortlessly in the end – to fight global warming. But of course, we all need to consume less resources, given the rapidly growing world population and limited natural reserves.

In that sense, The EU Parliaments proposal for tightened sustainability regulations for the dairy sector under the Farm-to-Fork Strategy will not help to solve any problem. It will just decrease the milk pool by about 6% and push raw milk prices up by a third. Overall, European consumers will have to pay €40 billion more for dairy products a year without getting any additional benefit.

Surely, the EU needs no external foes when it has the European Parliament, thinks Roland Sossna.

## Arla Foods Ingredients PURE BETA-LACTO- GLOBULIN

Arla Foods Ingredients has become the first supplier with the capacity for commercial production of pure BLG (beta-lactoglobulin). Lacroprodan BLG-100 is a pure BLG ingredient with a unique nutritional profile. Produced using a patented new separation technology, it contains 45%

more leucine than commercially available whey protein isolates. The development of this new protein category presents a range of opportunities for medical nutrition and sports nutrition manufacturers.

The commercial production of Lacroprodan BLG-100 was made possible by Open Innovation – Arla Foods Ingredients' model of partnership working. The concept is at the heart of the new Arla Foods Ingredients Innovation Centre in Nr Vium.



Lacroprodan BLG-100 contains 45% more leucine than other WPI (photo: AFI)

## FIPROS Nutrition NEW SERVICES FOR SPECIALTIES AND PRI- VATE LABELS

Besides its core business of blending and filling milk-based powders, co-manufacturer FIPROS Nutrition now offers new services in the fields of specialties and private label manufacturing. In spring 2020, FIPROS Nutrition opened its brand-new production site that offers blending and canning of infant-, health-, and other nutritional powder products.

All machinery is cleaned by applying dry cleaning. A comprehensive HACCP analysis has provided the foundation for the strong hygiene concept: The vertical production flow, four hygiene zones with UV/Air sluices, rigid cleaning procedures & validation, systematically trained operators, and monitoring programs ensure highest food safety standards including 100 % line clearance.



FIPROS Nutrition has opened a state-of-the-art dry blending plant in spring 2020 (photo: FIPROS Nutrition)



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# The development proceeds

## GRUNWALD ultraclean (UC) hygiene design with advanced functions



(photo: GRUNWALD)

**M**achine manufacturers are no longer typical "suppliers", but partners for the dairy and food industry and thus have the duty as well as the responsibility to ensure, through the use of modern, advanced technologies, that the highest quality, food safety and hygiene standards are met with their filling lines. How this is implemented is demonstrated by the further developed machine generation of the GRUNWALD ultraclean inline machines for filling and packing cups.

Based on the previous GRUNWALD ultraclean technology, the development processes at GRUNWALD have been consistently advanced in the past few years. The ideas resulting from this and their technical implementation ultimately serve the productivity of our customers. The further development

of the GRUNWALD ultraclean (UC) inline machines resulted in the 10-lane GRUNWALD FOODLINER 30.000UC – the latest model of the ultraclean (UC) inline series.

### Fully electronically monitored filling and packing process

Fully-automatic monitoring systems are based on the ultraclean (UC) hygiene design developed by GRUNWALD with guaranteed sterilisation rates of at least log 4. This monitoring technology extends to product pipes, product transit pipes and product containers.

Continuous monitoring of the CIP cleaning and the cleaning of the dosing system ensures that all parts and surfaces in contact with the product are 100 % sterile at the start of production. This is the only way the cleaning in the dosing area

can meet the aseptic standard and is a further quality feature for the GRUNWALD ultraclean filling machines.

The optional camera system on the 10-lane inline machine GRUNWALD-FOODLINER 30.000UC is another example of safe and modern monitoring technology. Each lane is monitored by a camera and reports any error due to incorrect operation or technical problems. The system checks, for example, whether all seal lids are placed in the correct pattern. It detects any incorrectly sorted or damaged seal lid just as reliably as an illegible or incorrectly printed date. If an error occurs, the machine stops so that the machine operator has to react. As a result, only those cups are delivered to the final consumer for which can be guaranteed that they were tightly sealed with the corresponding seal



The filling nozzles are cleaned during the automatic CIP while being mounted (photo: GRUNWALD)



The hygiene zone in GRUNWALD fillers offers foreign body protection: (photo: GRUNWALD)

lid and with seal lids which were correctly and completely printed. Faulty cups are automatically discharged.

### Foreign body protection

Additional X-ray equipment installed by the customer downstream of the filling line can be used to search for foreign body. However, it will be even safer if foreign bodies cannot get into the product at all, as it has been ensured for many years by the logical and safe design of the Grunwald ultraclean (UC) inline machines.

All UC machines are equipped with a special hygiene zone over their entire length. Our design engineers paid attention to the greatest possible minimisation of parts so that there are no small parts such as suspended screws in the area of the open cups and buckets. The risk of a foreign body getting into the product in this closed area and causing expensive recalls is practically eliminated.

With the relocation of all safety-relevant parts, production safety has also

been increased further. This means that all drive components, all supply pipes and almost every assembly group are consistently located outside the hygiene zone. Due to the minimisation of parts, the hygiene zone is clearly visible, easily accessible and therefore very easy to clean.

The utmost minimisation of parts has a noticeable, positive effect on maintenance and cleaning time and makes the machine operator's work much easier. In addition, downtimes are enormously reduced and the availability of the system is increased.

### Fully automatic cleaning of the hygiene tunnel

In the new generation of GRUNWALD ultraclean (UC) inline machines, an externally provided foam cleaning system supports the cleaning of the filling stations and the slat conveyor and starts automatically at the push of a button. For interior cleaning, the foam cleaner can be used in an individual and flexible way, depending on the customer's preference and the filling product.

This system can also be used for individual, manual cleaning of the machine.

A small dosage is sufficient to achieve excellent cleaning power. Due to the low dosage, the foam cleaner does not have negative effects on either the machine operator or the environment.

### Innovation for filling nozzle cleaning

In the hygiene zone of the recently developed GRUNWALD-FOODLINER 30.000 UC, the filling nozzle area was revised. The innovation developed represents a real, important improvement for the machine operator. Due to design optimisations, the filling nozzles of the filling station are also cleaned during the automatic CIP cleaning of the hygiene zone while being mounted. Both disassembly and manual cleaning of the filling nozzles is no longer necessary – a considerable saving of time and a further optimisation for the already safe GRUNWALD hygiene design.

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# Sachsenmilch automated its cheese wedge packaging using a Flexpicker

Tricky conditions: an inclined area, fluctuating dimensions, irregular orientation

Author: Uwe Keiter, VP Sales and Business Development, A+F



Fig. 1: An impressive sight: with some 2,800 employees Sachsenmilch processes around 1.8 billion kilogrammes of raw milk a year into a wide range of products. (photo: Peter Schubert)

**S**achsenmilch Leppersdorf GmbH is one of Europe's most modern dairies and one of the largest investment projects in the history of the Theo Müller Group. Over one billion euro has been invested in the new development and in expansion projects since the takeover. A further investment was successfully concluded at the beginning of 2021. The goal was to automate the previously manual packing of cheese wedges.

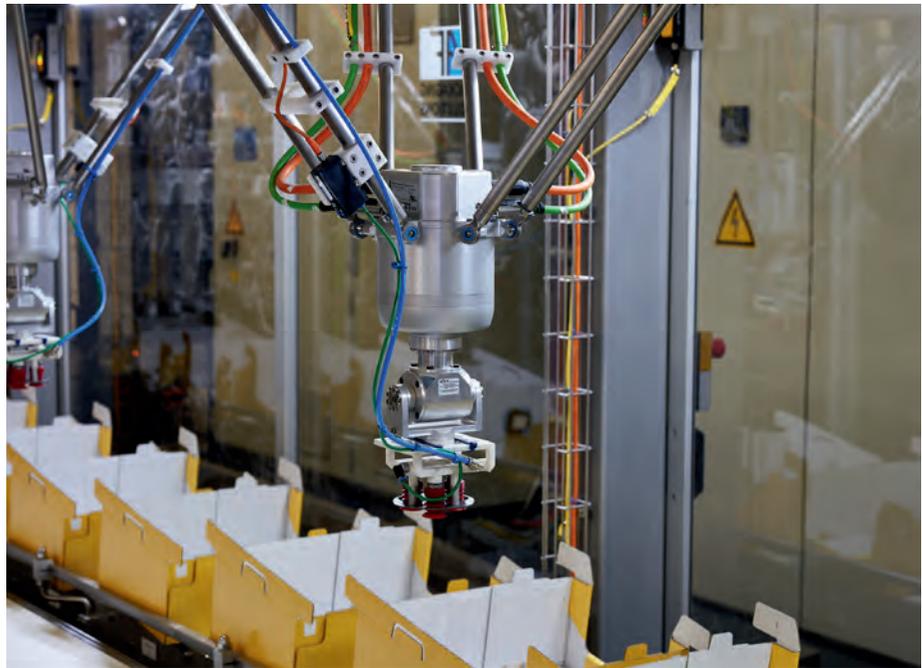
With some 2,800 employees Sachsenmilch processes around 1.8 billion kilograms of raw milk a year into a wide range of products that, besides milk, butter, yogurt and cheese, also includes whey derivatives for baby food as well as bioethanol. The food products are sold under the brand names Sachsenmilch, Müller und Loose, among others.

### Cheese wedges vary in size significantly

About half of the raw milk supplied is processed into cheese and packed in packaging variants to meet the customer demand. Sachsenmilch's 450 g cheese wedges, which are machine cut from cheese wheels of approx. 12 kg according to a defined pattern, play an important role in this process. The square-shaped middle cut which produces three wedges, is always identical. These sections can always be identified in that they only feature two sides of rind and not three, as is the case in the wedges cut from the edge. The size of the middle wedge is always the same, whereas that of the outer wedges varies significantly. The reason for this is as follows: although all cheese wheels have approximately the same weight, they vary in diameter and height due to the maturing process. If the diameter of the wheel is smaller, for instance, then the edge wedge is shorter and wider, whereas with a larger diameter the segment is longer and thinner.

### The compact and high-performance Flexpicker with integrated cartoner

At Sachsenmilch the cheese wedges have until now been put into shipping cartons manually. "This type of work has great potential for automation. We were therefore looking for a solution that would enable an efficient mechanical packing of the cheese wedges," recalls Katharina Rossow, Project Engineer for Technical Projects at Sachsen-



**Fig. 2: Rapid action unit: a total of four Delta-3 Pickers fill the cartons according to a nested packing scheme in three or four layers.**

milch. During the initial planning phase, it was even considered changing the entire cheese wedge production to mechanical processing. "The packer, however, would then be so big that it would exceed the available space at the planned site", Rossow comments. Sachsenmilch therefore focused on the main cheese type that accounts for approximately two-thirds of the production. The remaining third was to continue with manual insertion into the trays.

"We decided in favour of a cooperation with A+F due to their sound and reliable technology and the positive experience from many joint projects especially regarding the individual customised solution and project implementation," Rossow points out. The key element of the solution is a so-called Flexpicker with integrated cartoner. This Flexline design combines two proven product groups in one machine frame, both mechanically and regarding the control. The result is first of all a significant synergy effect in the control – one system is all that is needed for both tasks. Secondly, the machine boasts a very compact design which is another bonus, and not just for Sachsenmilch. This is because with existing buildings there is always the challenge of finding a machine that fits into the available space conditions. Rossow emphasises: "This worked out perfectly. Operation and maintenance of the plant can be carried out easily from all sides. The solution

simply meets all the requirements originally set out by Sachsenmilch."

### Gripper system, sensor system and condition monitoring make their debut

Unlike the components of the basic machine, the sensor system and the gripper system for the cheese wedge product had to be developed from scratch. "At Sachsenmilch we were not familiar with the chosen technology, but it quickly became our preferred solution. And we were confident that it would do the job," Rossow adds.

The condition monitoring module also made its debut at Sachsenmilch with this project and was integrated in the Flexline packaging machine. Condition monitoring automatically records comprehensive data on the production, machinery and surrounding area. This also applies to status messages, warnings and faults in the machine as well as to production data. All of these data can be stored and archived on a stand-alone industrial PC and displayed in a dashboard that is accessible via any current browser. The system architecture can thus be integrated in a company network without requiring additional hardware. Rossow: "This tool was a particular requirement of our maintenance department. It also gives us the opportunity to optimize the plant performance thanks to the accomplished transparency. This is really very helpful."

## Cheese wedges are not aligned upstream of the packer

The entire project was carried out by A+F on a turnkey basis, including the operator training. Besides the Flexline, the order included the mechanical and control-side connection to the cheese cutter, the thermoforming line as well as the remaining manual removal that forms the actual interface. "It had to be implemented in such a way that we could continue using manual removal for the remaining third of our cheese wedges. Operation can therefore take place via manual removal or the machine. Everything is functioning very well," Katharina Rossow sums up.

The plant components were delivered as planned on 02.02.21. Just one week later the first cheese wedges were passing through the plant. These are conveyed from the remaining manual workstation to the Flexpicker by a product conveyor. Instead of being aligned they are left arranged in a rather "chaotic state". At the infeed a barcode recognition system checks the cheese wedge from below for the correct product allocation. In addition, the cheese wedges are scanned for any intermediate top film roll changes from the upstream thermoforming line. Cheeses with an incorrect barcode or a detected top film change are discharged.

### 3-D inspector detects shape, position and orientation

After the inspections the cheese wedges are distributed on two lanes. On both lanes a 3-D inspector records the wedge shape, its position and the orientation of the cheese. This information enables the Delta-3 picker to approach the cheese wedge in the right position, pick it up and place it in the unfolded shoulder tray. The wedge is picked up by a vacuum that is generated using compressed air by means of the Venturi effect, similar to a water jet pump. This allows the suction head a freedom of movement that would not be possible with a vacuum pump.

### Identical control for basic machine and robot arm

The actual Delta-3 Picker is a servo-driven robot arm which besides the x, y and z axes has a rotary axis and a tilting axis. In this way it can move to any position in its operating range. Both the basic machine and



**Fig. 3: Satisfied in every respect: "The solution simply corresponds to all the requirements set out by Sachsenmilch," says Katharina Rossow, Project Engineer for Technical Projects at Sachsenmilch. (photo: Peter Goldmann)**

the robot arm have an identical control system which is beneficial for the customer regarding operation and maintenance.

The wedges passing the first picker, which are within the respective movement radius but cannot be detected in the time window, are then processed by the second of all in all four pickers. The wedges not picked up by the second picker are then picked up by the third picker and those not picked up by the third picker are finally picked up by the fourth picker. If a cheese wedge cannot be picked up due to drawn in secondary air, it is discharged via a chute into a discharge box downstream of the fourth picker.

### "We at Sachsenmilch are very satisfied with the implemented job"

The carton erector integrated in the plant with a folding station as special version doubles the cardboard at the front access to the product parallel to the packing process. The ready-sealed cartons are placed on an inclined carton conveyor. The control cycles these cartons corresponding to the filling level in the infeed. The carton stream and the cheese wedge stream flow in opposite directions. Each of the four pickers has ac-

cess to two cartons. If, for example, one of the cartons is filled and moves to the shoulder closer, this design allows the picker to continue feeding the second empty carton. If, on the other hand, a carton that is not completely filled moves on one position further, the cheese wedges are packed into this carton by the next picker. By way of a counting function, the pickers know exactly how many cheese wedges still need to be inserted into the respective carton.

In this way, the four Delta 3 pickers fill the cartons in three or four layers according to a nested packing scheme. The shoulders are then closed on the filled carton before it is moved to the take-off roller conveyor for manual removal. There are two operators on duty per shift to ensure a safe and reliable operation of the automatic cheese wedge packaging. "We have now gained so much potential that we can mechanically pack our maximum cutting capacity," Rossow comments. Does this positive outlook also mean an equally positive conclusion for the project? Absolutely, Katharina Rossow stresses: "Everything was carried out according to schedule and within budget. Putting it in a nutshell: At Sachsenmilch we are very satisfied with the job done, both on the production and on the maintenance side."

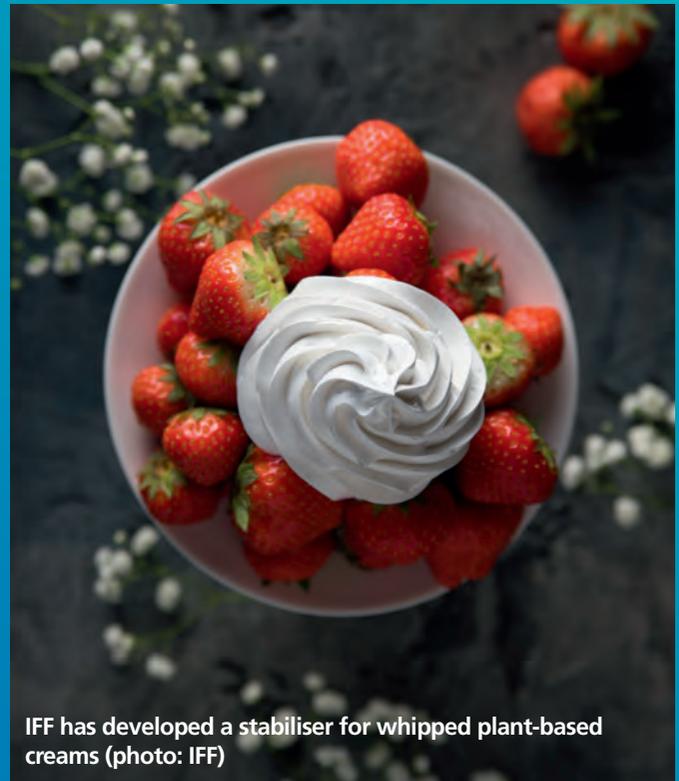
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IFF introduces a high-performing, innovative solution for the dairy alternatives market. This “revolutionary”, vegan suitable stabilizer is simple to use and stable throughout shelf life, and it delivers everything that manufacturers need to differentiate and expand into new markets with lesser risk and lower costs.

VEGEDAN WP 1800 is a customized, protein-free solution developed to cater to the growing consumer demand for plant-based whipping creams that comes with a vegan label. To make the offering even more on-trend, IFF has specially designed it for use with coconut fat. According to Mintel market insights, new cream products containing coconut grew 20 percent from 2018 to 2020.

With VEGEDAN capacity for stable air incorporation, the cream is transformed into a stable, firm foam with just 90 seconds of whipping, making it the perfect long-lasting decorative topping.



IFF has developed a stabiliser for whipped plant-based creams (photo: IFF)



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# Safe in PET

## COVAP's first complete aseptic PET line from Sidel



**T**hanks to Sidel's end-to-end complete aseptic PET line, UHT liquid dairy products (LDPs) from Spanish dairy COVAP are now also available in PET bottles for the very first time. This new PET bottle opens the door to meet changing market demand and ensures product integrity and safety.

COVAP, a Spanish cooperative, is one of the major milk processors in Spain. The company has one of the most technically advanced dairy plants in the whole of Europe and has been a family of farmers for over 60 years. With a large operating area of 22,650 m<sup>2</sup>, COVAP can process 400 million liters of milk per year. Traceability is their key to sustaining high-quality products. By

implementing strict control from animal feed to the production process, they are able to keep their commitment of bringing a range of high-quality LDPs to consumers.

COVAP also produces ready-to-drink dairy products for other retailer brands in Spain. Although LDPs are dominated by carton packaging, major supermarket players have decided to sell them in PET bottles as



well based on market preference. To meet demand, COVAP partnered with Sidel for the first time on a complete aseptic PET line with the Sidel Aseptic Combi Predis™ at its heart, after visiting various dairy plants using Sidel's equipment in Spain and Italy. The line was installed not only for COVAP UHT dairy products, but also for retailer brands from hotel, restaurant and café channels.

Sidel experts worked in close collaboration with COVAP from bottle design to line start-up. The new PET bottles were designed with a sleek shape, providing a similar look and feel to glass bottles. Thanks to the PET barrier properties, the shelf life of milk drinks has been extended by 4 months to retain their fresh taste. All three bottle formats – 225 l, 1 l and 1.5 l – can be labelled with sleeve or roll-fed labels based on different brand positioning.

Thanks to 40 years of aseptic packaging expertise, the safe and simple aseptic PET line requires only a few operators and thus facilitates a smooth and efficient production, running at up to 13,200 bottles per



**Spanish dairy co-op COVAP has installed end-to-end complete aseptic PET line supplied by Sidel (photo: Sidel)**

hour. As a result, COVAP is now producing 30 million PET bottles annually. Furthermore, Sidel provided intense training for operators to ensure successful production on the line. "Since PET packaging is a new territory for us, Sidel is the right long-term partner to advise us in every phase and to provide end-to-end solutions," commented Vidal Madrid, Director of Operations

and Digital Strategy at COVAP. "After the launch of new PET bottles, consumer reaction has been quite positive, especially regarding the sleeve label, which enhances the attractiveness of the LDPs. Additionally, the retailer's brands have also been receiving high acceptance and satisfaction with the new packaging," concluded Vidal.



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# Fi Europe / Hi Europe

Frankfurt, Germany 30 November – 2 December

**F**i and Hi Europe return as life events. Co-located in Frankfurt, Germany, both trade shows will be open from November 30 to December 2, 2021 to international visitors. The show is accompanied by an online event that will open on November 22. This allows those who are interested but cannot travel to participate nevertheless. The organisers of Fi/Hi expect 17,000 visitors both life and online and more than 800 exhibitors from 135 countries making the show again the worldwide most important ingredients event. More information is available at [figlobal.com](http://figlobal.com).

## Evolution of bioactives shaping sports nutrition

Sports nutrition is evolving at incredible speed, according to global solutions provider Glanbia Nutritionals, and the category is now worth £1.08bn (\$1.5bn) in the UK. Growing at a CAGR rate of 8.7% out to 2025, the sports, active and healthy nutrition market is increasingly catering to a mass consumer audience seeking holistic solutions that support fitness & performance goals. It is no longer a product segment restricted to athletes and body builders.

Glanbia Nutritionals has a portfolio of dairy-based protein solutions, including Hydrovon, a premium, instantised partially hydrolysed whey protein isolate.

Hydrovon is a unique solution offering excellent flavour in a partially hydrolysed whey protein for rapid absorption of whey peptides, helping to stimulate protein synthesis and decreased prevention of protein breakdown.

Glanbia Nutritionals also offers Bioferrin lactoferrin which is a superior iron balancing solution that offers a gentler and safer alternative to inorganic iron sources.

## Collagen peptides, an endless story

New to the GELITA roster is IMMUEPT optimized to support immune health after it has been discovered that collagen peptides



Joywell Foods has a vision to eliminate the prevalence of sugar in the Western diet (photo: Joywell Foods)

support the immune system.

Soft gels are a preferred delivery method for all kinds of nutrients and active ingredients. By choosing the right type of gelatin from the GELITA release profile portfolio manufacturers can modify the specific effect, timing, and duration of the fill release to tie in with consumer needs. GELITA can provide food makers with a shelf-ready collagen product.

### Precision fermentation

Precision fermentation promises to make protein sweeteners, such as brazzein, miraculin and thaumatin, cheap and plentiful, offering food brands new ways to reduce sugar in food and drink.

Karen Huh, CEO of Joywell Foods, said the company had a vision to eliminate the prevalence of sugar in the Western diet. "Sweet proteins – many of which are over 1000 times sweeter than sugar – can reduce how much sugar we consume in our daily lifestyle," she said.

Israeli company Amai Proteins uses computational design and programming to create novel protein sweeteners. Every protein is composed of a necklace (sequence) of twenty types of beads called amino acids. Computational Protein Design (CPD) delivers designer protein that are 100% protein with a novel sequence of amino-acids. Non-GM proteins are between 70 and 100% identical to sweet proteins found in nature and have been optimized for taste, stability, and expression yield.



**Glanbia will put sports nutrition in the spotlight (photo: Glanbia)**

### Flexibility in perfection

#### WEBER WESLICE 4000 SERIES

Weber Maschinenbau has expanded its slicer product range to include a slicer series that redefines the term flexibility. The weSLICE 4000 models are a solution for full-range suppliers. At an average output, they offer maximum flexibility for many small-batch applications – all on a very modest footprint. Depending on the individual performance requirements, food processing companies can choose between the weSLICE 4000 circular blade slicer or the weSLICE 4500 involute blade slicer. The

compact slicers allow the option of manual and automatic loading as required. Radical reductions in set-up times, combined with lower staff requirements, also help to minimize costs in the long term.



**The new weSLICE 4000 models operate especially flexible (photo: Weber)**

# Cleaning 4.0 – News from Membrane Cleaning

Ensuring flawless dairy products is the speciality of Horpovel® GmbH. As experts in the manufacture of cleaning and disinfecting products for the dairy industry, its focus is set on cleaning membrane filtration systems.



**H**orpovel® GmbH, manufacturer of membrane cleaning agents and cooperation partner of Koch Separation Solutions\*, has been involved in the development and furthering of cleaning chemicals and strategies for the cleaning of membrane filtration plants in the food industry as well as the optimisation of CIP plants and standard cleaning processes for more than 25 years.

The driving force for Horpovel® GmbH is the implementation of a solution for resource-saving, effective and repeatable cleaning that is adapted to the respective application.

In addition to the further development of own cleaning strategies with simulation of the process on a laboratory scale, new cleaning processes for membrane systems can also be tested in laboratory trials for their cleaning success and membrane compatibility.

On this basis, Horpovel® GmbH was able to test a two-step cleaning strategy for various ultrafiltration processes in the field of ultrafiltration cleaning, for example, and later implement it on an industrial scale.

As a result, the cleaning time of the tested ultrafiltration systems could be reduced by up to 20 % and the amount of rinsing water by up to 33 %. In the example mentioned, the cleaning time was under three hours.



## New CIP-Inline-analysis-technique for Membrane Systems

In addition, Horpovel® GmbH uses the latest CIP inline analysis techniques to further optimise existing processes.

In collaboration with ALPMA/LTH Dresden, Horpovel® GmbH has developed a CIP inline analysis tube. This analysis tube

can be installed in various cleaning processes with little technical effort in order to record the parameters for optimising the cleaning steps and rinsing phases in real time for a corresponding observation period.

In contrast to manual sampling for analyses or for the adjustment of rinsing phases, it is thus possible to record a large number of parameters exact to the second.



Photo: Koch Separation Solutions

This data acquisition option further makes it possible to record any fluctuations in the controlled area. A defined period of two weeks on average is set for this control segment.

The newly introduced cleaning concepts also provide a sustainability effect. The Horpovel® additive system (see technical article on [www.horpovel.de/press/](http://www.horpovel.de/press/)) can achieve a reduction in transport volumes of up to 25% and thus save CO<sub>2</sub>.

Horpovel® GmbH currently introduces a new cleaning concept that is intended specifically for ultrafiltration membranes designed or suitable for high-temperature cleaning. The advantage of this new cleaning concept: It makes the addition of a single additive to the raw material components caustic soda and nitric acid in the application solution possible, if the technology is available in companies.

The reduction thus achieved in hazardous material storage and chemical supply speaks for itself. Not to be neglected is the cost saving that results from dispensing with the ready-made cleaning agents.

In addition to cost reduction and the reduced wastewater load, the Horpovel® additive system offers advantages both in the area of membrane cleaning and in general CIP cleaning. On the one hand, with the help of the additive system, it is possible to adapt the cleaning solution exactly to the existing fouling and technical conditions. On the other hand, additives can also be used in higher concentrations that are not stable in acidic or alkaline raw materials.

The market launch of the further developed enzyme generation in the cleaning concepts generated a reduction of enzyme consumption by up to 30 % and enzymatic cleaning times by up to 20 %.

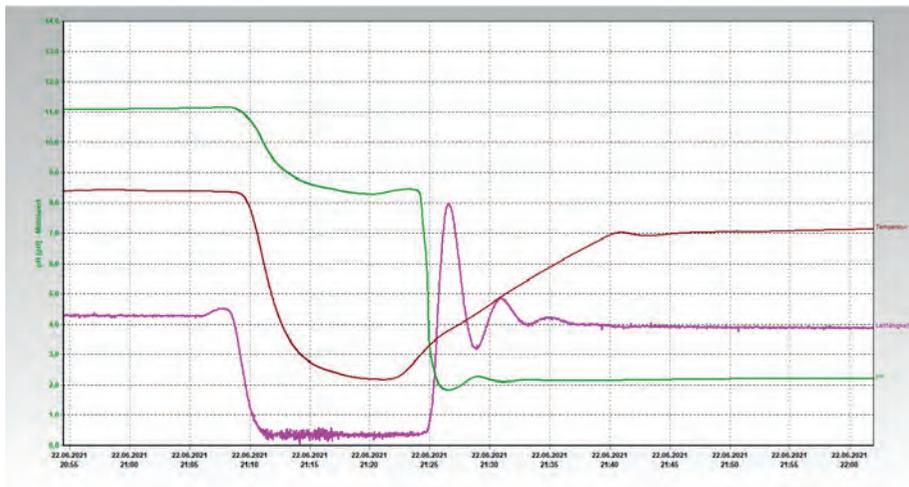


Image: Example curve analyser tube.

## New phosphoric acid-free cleaning agent

In addition to the latest generation of enzymes, Horpovel® GmbH was also able to successfully launch the new, phosphoric acid-free cleaning agent for MF, UF, NF and RO plants.

By using the newly developed product (compared to many products containing phosphoric acid and low in nitric acid), a quantity saving of up to 25 % in the cleaning solution could be achieved.

At the same time, the introduction of the phosphoric acid-free product has led to a significant reduction in wastewater pollution from cleaning agents. The product therefore has no effect on the operational wastewater in terms of P input.

Horpovel® GmbH considers itself not only a manufacturer and supplier of cleaning agents and disinfectants, but also as a service provider in the field of cleaning and disinfection.

The company will be happy to advise you on cleaning concepts and hygiene monitoring, especially in combination with the persulphate technology used. With this technology, it is possible to detect the smallest organic residual contamination. Due to the high oxidation power of persulphate technology, it is also possible to detect biofilms.

Horpovel® GmbH also provides comprehensive staff training on cleaning-related topics. This can take place both within the framework of training courses held personally in your company, and as online training via our "e-Learning" training portal (to be found on homepage [www.horpovel.de/e-learning/](http://www.horpovel.de/e-learning/)).

The training portal provides, among other things, training on the topics of haz-

ardous substances and hygiene as well as special presentations on CIP and membrane cleaning.

Please read this article online on our homepage.



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### Your Contact



Martin Patzelt  
Head of Sales & Application  
Technology



Horpovel® GmbH  
Carolinenglückstr. 25a  
44793 Bochum

Tel.: +49 (0) 234 52992-0  
[patzelt@horpovel.de](mailto:patzelt@horpovel.de)

# Transition from drinking to eating

## Yili comments on actual business developments

**M**ajor Chinese milk processor Yili has ambitious goals for its business development. IDM spoke with Dr. Zhanyou Yun, Assistant President of the Yili Group, about import, growth and economy.

**IDM:** Yili ranks quite high amongst the world's top dairy companies. What exactly can you deduce from a such a ranking position? Is it just size that matters?

**Yun:** In 2021, Yili successfully retained its ranking among the Top 5 brands on Rabobank's 2021 Global Dairy list. The ranking allows Yili to have a clear view of its position in the global context, thereby generating further motivation for its future development.

Pan Gang, Chairman of Yili Group, said, "We not only seek high growth in performance, but also the common prosperity of commercial values and social values." In the context of the pandemic, Yili has continued to strengthen its competitiveness throughout the entire industry chain, including the supply chain, products, and channels. Behind the scale of growth, Yili adheres to innovation, strict quality control, and a global network of qualified resources, while pursuing sustainable development goals and corporate social values. Yili is committed to becoming one of the most trustworthy healthy food providers worldwide.

**IDM:** What are the growth ambitions of Yili, are there any special categories which Yili wants to grow? And where are the global focus areas for growth?

**Yun:** Yili has led the Asian dairy industry for eight consecutive years. Looking ahead, we will join hands with global partners to facilitate cooperation throughout the whole industry chain to boost a "global health ecosystem". Yili will move steadily towards a higher level of development.

In the dairy section, Yili's liquid milk and yogurt have maintained solid market share, while continually expanding into other market segments. Products such as Satine A2 $\beta$ -Casein Organic Pure Milk and Yili ZhenNong High-Calcium Milk were launched to meet consumers' diversified needs. For future development, milk pow-



**Our overseas markets are mainly in the Asia-Pacific region. We will gradually develop international markets such as Southeast Asia and Africa**

der, low-temperature liquid milk, and cheese are among the key fields. We have developed and rolled out several high-end infant formula milk powder products, such as Jinlingguan ZhenHu, RuiHu, Seine Mouiller, and Uitstekend Geitenmelk, which are now popular among consumers. In the non-dairy section, more new plant-based beverage products under the brand of PLANT SELECTED are in development, and Inikin Yike Live Fountain natural mineral water is being produced at full capacity and being sold via both online and offline channels.

Currently, our overseas markets are mainly in the Asia-Pacific region. We will gradually develop international markets such as Southeast Asia and Africa to serve more consumers around the world. By the end of this year, our factory in Indonesia will be put into operation, producing dairy products, especially ice cream, to meet large demand in Southeast Asia.



Yili's cheese product portfolio

**IDM:** Is Yili processing solely own milk or do you also make use of imported milk or whey powders, respectively MPC or WPC?

**Yun:** Yili actively combines high-quality resources all over the world for better products. We have milk supply from the world's golden milk source belt across Asia, Europe, Oceania, and America.

In New Zealand, three billion RMB was invested to build the Yili Oceania Dairy Production Base. Yili later purchased Westland Milk Products, the second largest dairy enterprise in the local market, and has continuously enhanced cooperation with local farms. High-quality milk sources from New Zealand are used in products such as Satine New Zealand High-End Organic Milk and Jinglingguan RuiHu Milk Powder, providing consumers with more choices. Imported whey powder, MPC, and WPC are currently used as ingredients in infant formula milk powder, yogurt, ice cream, and so on.

**IDM:** How is Yili's cheese business doing?

**Yun:** Yili has set up a business unit for cheese. In the first half of 2021, the retail market share of Yili cheese products increased by 6.7 percentage points YoY, and the retail sales more than tripled over the same period. Yili now has products such as Cheese Bar for Kids, Wonderful Cheese Pocket Cheese Bar for Adults, and Mozzarella Shredded. In 2020, Yili launched a series of professional dairy products named "Oriental Inspiration". In the field of reprocessed cheese, Yili innovatively developed and launched the "squeezeable cheese" which contains five times the calcium of milk and dietary fiber that help children digest better.

The cheese market has strong growth prospects in China, and it will be one of our key businesses. Driven by the upgrading of consumption and consumer trends shifting towards health, the nutritional value of cheese has been gradually recognized by Chinese consumers. Accordingly, there is an ongoing transition from "drinking milk" to "eating milk". While the catering, hotel, and baking industries are developed rapidly and use cheese as an important food ingredient, there are major opportunities for the cheese business to grow further.

**IDM:** Looking at the Chinese economy: what is the influence of the government in Yili's decisions and strategy?

**Yun:** Yili abides by local laws and regulations and fulfils its corporate social responsibilities both in China and other markets.

The Healthy China 2030 Plan sets out China's long-term approach to promote public health and fitness and upgrade the related indus-

tries. Dairy products and other healthy foods, which provide abundant nutrition, are important to healthy living. Yili will take advantage of the improving industrial chain and invest more in R&D to provide consumers with more diversified product choices.

The Chinese government has announced the goals of achieving peak carbon emissions by 2030 and carbon neutrality by 2060. In response to the national climate goals, Yili has undertaken corresponding social responsibilities. We have taken the lead in committing to achieving carbon neutrality on schedule through a series of actions, such as improving energy efficiency, reducing greenhouse gas emissions on farms, and building green factories. In 2021, Yili launched the official Carbon Neutralization Project, measuring the carbon footprint of liquid milk, ice cream, milk powder, yogurt, and other product lines through their whole life cycle.



Three billion RMB were invested in Yili's Oceania Dairy Production Base in New Zealand

# Dutch cheese plant supplier back on track

## The return of de Klokslag

**A**fter an eventful history, Dutch cheese making equipment manufacturer de Klokslag Engineering in Bolsward has regained its independent momentum. Founded in 1990 as a two-man company, de Klokslag developed into one of the leading equipment suppliers for yellow cheese dairies in Central Europe and elsewhere. The integration into the GEA Group in 2015 did not work out in the end because the customers had most individual requirements. Without further ado, company founder Evert IJntema took the helm again in 2019. IDM visited the new de Klokslag Engineering.

Those who still know the company from the time before 2015 are surprised at the size to which it has grown in the meantime. On the Bolswarder industrial estate, de Klokslag Engineering owns 15,000 m<sup>2</sup> of floor



de Klokslag recently delivered this double cheese unloading station to a cheese dairy (photo: de Klokslag)



Closed, CIP-capable cheese presses are one of de Klokslag's specialties (photo: de Klokslag)

space, on which four halls with a total area of over 10,000 m<sup>2</sup> have been placed, as well as a newly occupied modern administration building. A fifth hall was just waiting to be fitted out at the time of the editorial visit. Evert IJntema: "What our customers had been used to for many years, namely quick decisions, good service, fast delivery, could not be offered in a corporate environment that necessarily depends on strict planning. The orders gradually decreased. In 2019, together with friend Jan Dijkema, I took over my old company again in order to give it and, above all, the long-standing, experienced employees a new perspective. However, we effectively had to 'start from scratch'.

### The main thing was in place

In the beginning, de Klokslag Engineering only had an assembly hall and a

much too small office wing. But the main thing, the customer contacts, were there. IJntema decided to build more production halls and an office building in order to become really efficient quickly. For a few months now, everything has been concentrated at the new location in the industrial area. In the meantime, large orders for a number of well-known cheese dairies have been and are being processed. Sales Manager Joeke van der Heide comments: "Historically, de Klokslag Engineering has received and completed to the satisfaction of the customer almost 80% of the projects that come into question for us along the Dutch and German North Sea coast as well as in Austria and Switzerland. This is a great asset with which we have been able to build the new company."



Evert IJntema (left) and Henk Simon Ferbeek have got de Klokslag Engineering back on track (photo: mi)

### Unchanged programme

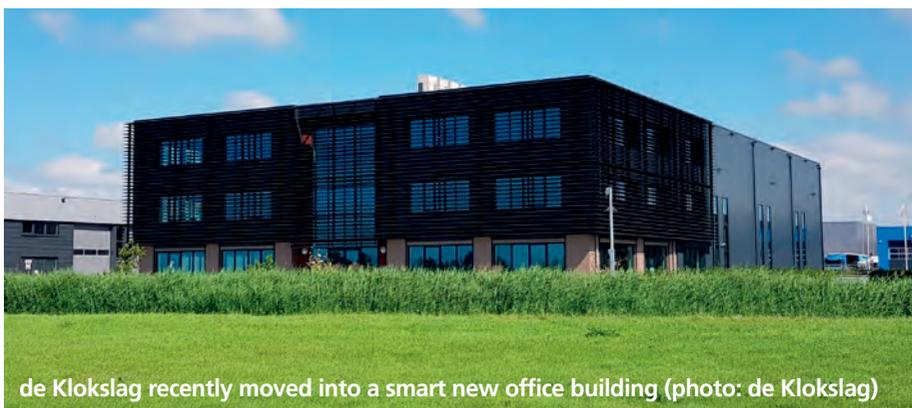
Meanwhile, nothing has changed in de Klokslag Engineering's actual programme. The subcontractor builds equipment for cheese making, cheese presses in closed CIP-capable design, equipment for mould handling and brine baths. But all this on a really large scale. Technical manager Henk Simon Ferbeek describes it this way: "Our installations start from capacities of 100,000 litres per day. The largest installation so far has a daily capacity of 5 million litres, divided into four lines. Currently, our machines can produce up to 12 tons of cheese per hour." "Presses and salt baths are our core business, plus installations for portioning and draining if necessary," IJntema specifies, "And of course we have also got the service business back on its feet."

When it comes to brine baths, de Klokslag can serve with both traditional large self-built racks as well as with single- and flush-out baths, guided and un-

guided. All systems are constantly being developed further, and robot technology has long since found its way into de Klokslag's systems. Relatively new in the range are the "Conomatic" whey removal towers, which are currently being installed in a large dairy.

"What makes our solutions very special is that they are always dimensioned for the total output of a cheese dairy," explains IJntema. "This means that our machines and lines are never the bottleneck in a cheese plant, but are always aligned with the downstream performance."

In addition to the machines, de Klokslag also offers services such as planning, engineering, automation, installation and technological consulting. In the current team of 90, 30 employees each are responsible for engineering and automation, 45 work in assembly, and only a few employees are assigned to overhead. In the long term, de Klokslag Engineering intends to further expand its workforce.



de Klokslag recently moved into a smart new office building (photo: de Klokslag)

# say cheese

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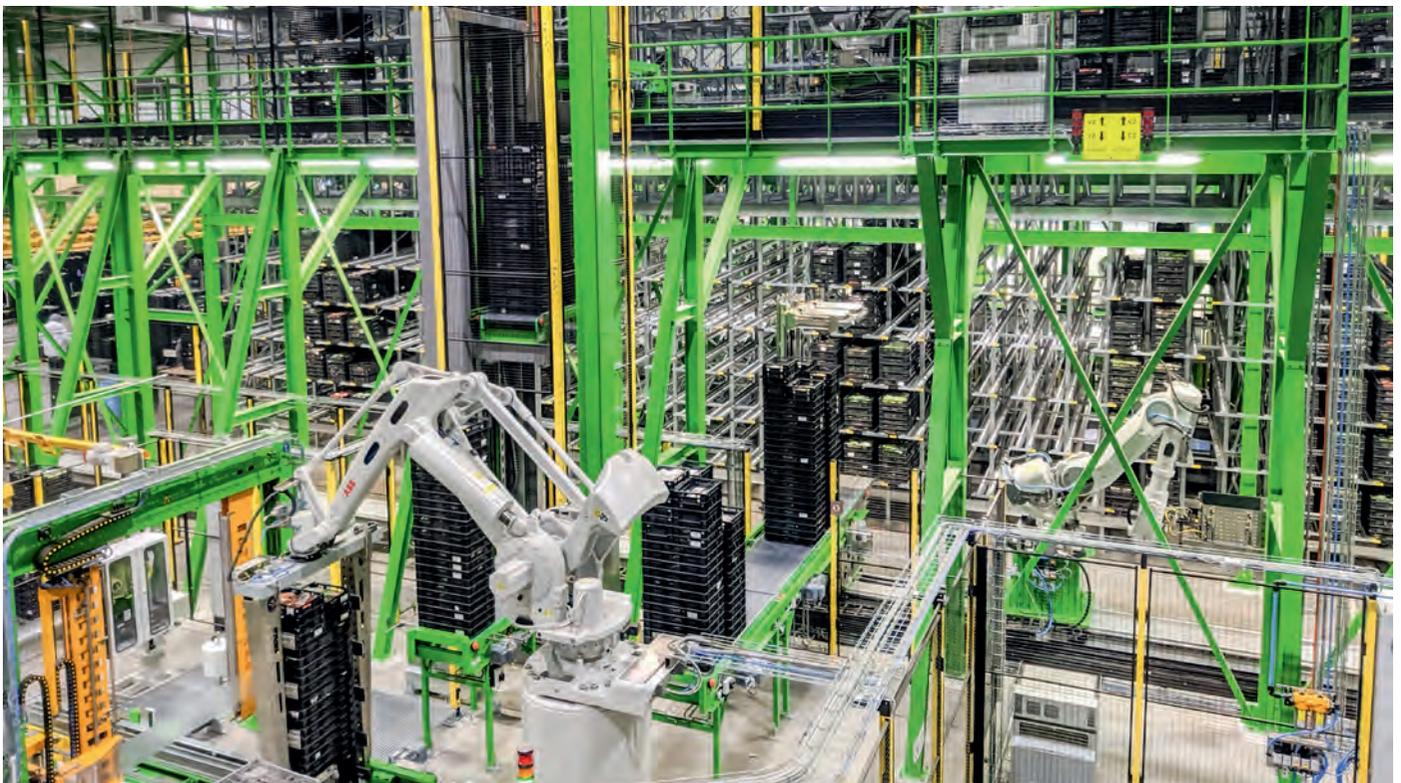
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# How robots guarantee freshness

## Automation solutions for healthy convenience food



At the Dutch company Heemskerk Fresh & Easy, a total of ten ABB robots help to pick the food deliveries as quickly as possible.

**W**hether it's a ready-to-eat salad including dressing, pre-packaged cheese bites or the yoghurt muesli cup to go: from the consumer's point of view, today's convenience food has not only to be nutritious and quick to consume, but also fresh, healthy and sustainable. The demand for healthy convenience food places high demands on the entire value chain in the food industry – and thus on the dairy industry, especially since dairy products are a central part of many healthy nutrition trends. The challenge ranges from the sustainable sourcing of raw materials to the gentle processing of fresh ingredients in compliance with the highest hygiene standards to resource-saving packaging and just-in-time de-

livery. The latter is often necessary to keep the promise of freshness due to the fact that many convenience products often only have a shelf life of a few days. Therefore the timespan needed for products to hit the refrigerated shelves should be kept as short as possible in order to prevent food waste. Last but not least, competition is increasing: The growing market of plant-based milk substitutes is competing with traditional dairies.

### Efficiency advantage through automation

In order to address these diverse requirements in an economical way and thus secure their competitiveness in times of changing nutritional trends, many food manufacturers rely on digitization and



**ABB supports suppliers in the food industry by providing customised automation solutions for everything from mixing of products to packaging and logistics.**

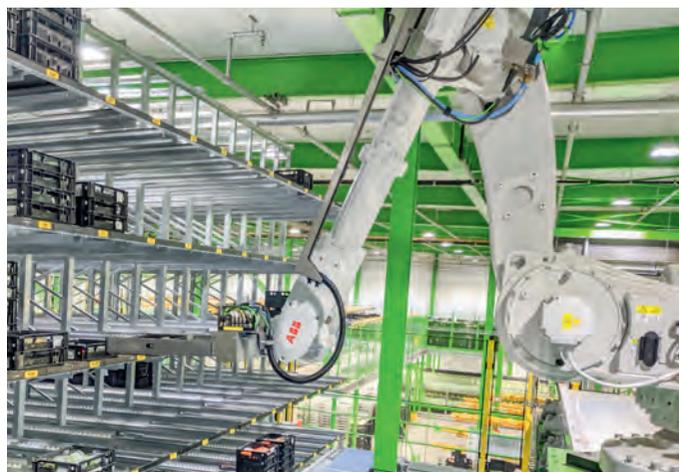
automation. By modernizing equipment and workflows, efficiency and thus production speed can be increased, while at the same time reducing the use of resources and energy in terms of sustainable production. In addition, the accelerated workflows from processing to packaging to transport help to extend the potential time of fresh products in the display and therefore prevent food waste.

ABB is a solutions partner to food manufacturers throughout their automation journey, across the entire value chain. Food manufacturers benefit from ABB's diverse expertise in a wide range of areas: from mixing of products to packaging as well as logistics. The modular, scalable approach of ABB's solutions makes it possible to successively automate the individual work steps as required. ABB's robotics and automation solutions are embedded in a digital ecosystem, including digital services and suitable software solutions for user-friendly control, programming and maintenance of the robots and systems.

ABB offers a range of pick-and-place robots specifically for the needs of the food industry. They combine the usual quality features such as flexible application options and precise operation with a hygienic design. Due to their special geometry, the robots offer virtually no surface for contamination and are particularly easy to clean, even under high temperatures. This design enables them to meet the high hygiene requirements in food production.

### **Automated picking of fresh produce**

If dairy companies are looking for inspiration on how to address the trend towards healthy convenience food through automation, they will find it at Heemskerk Fresh & Easy. The Dutch company delivers up to 4 million fresh convenience products such as salads and ready meals to supermarkets and fast-food chains around the world every week. Heemskerk was quick to respond to the demand for healthy convenience food and now has over 400 products available in this product range, including fresh salads, boxed ready meals and pre-cut fruit and vegetables. That is why the minimum dwell time of fresh products in the supply chain and just-in-time delivery are crucial for Heemskerk. At a certain point, these increased requirements could not be reconciled with manual picking in the factory. To make its processes in this area more efficient and therefore more future-proof, Heemskerk in-



**The use of automation solutions in running operations ensures an immediate boost in efficiency and a higher competitiveness of the company.**

vested in a comprehensive robot automation solution from ABB. Today, a four-axis IRB 660 from ABB picks the boxes with the orders for a particular supermarket and places them on a conveyor belt on which they are transported to the picking zone. There, six six-axis IRB 6700 robots, positioned on a rail, pick up the boxes and place them in the sorting bins intended for different supermarkets. Two more IRB 6700 robots on the other side of the picking zone form stable, mixed and high stacks from the crates. Finally, an IRB 660 four-axis robot picks up these stacks of crates and places them on trolleys, which can be transported directly to the supermarket. This solution allows an endless variety of orders to be picked quickly and efficiently – especially helpful given the daily changing volume orders in the fresh produce industry. The modular and standardized design of ABB's robotic solution makes it easy to expand capacity by adding new robot zones.

In traditional logistics processes, packaged food is usually first stacked in the supermarket chain's central warehouse. Only when orders are received from the individual shops are the products picked, stacked and transported further. This process alone takes about half a day – and the shelf life of the fresh products is correspondingly reduced by this time. With the automatic picking function of the ABB robot solution, logistics companies now get the opportunity to dock their products directly to supermarkets. Retailers receive already picked quantities for each of their shops. This efficiency gain in the supply chain extends the shelf life of fresh produce by about one day.

### **Head start in the race against time**

Heemskerk is not an isolated case: the learning from the acceleration of the logistics process can be transferred to all areas of the food industry, where fresh, healthy products with a limited shelf life have to find their way to the end consumer as quickly as possible. Here, the gain in efficiency and time through the automation of processes offers food manufacturers the opportunity to maintain their competitiveness even when facing increasing and volatile demands. They are put in a position to react flexibly and economically to nutritional trends. The use of robotic solutions is a tried and tested way to increase efficiency along the entire value chain, comply with high hygiene requirements and flexibly scale capacities.

# UV light pasteurization comes to U.S. dairy industry

## Lyras

**U**.S. dairy processors can soon pasteurize milk and other non-transparent liquids with patented ultraviolet (UV) light technology that uses 90% less energy and more than 60% less water than traditional heat/cool pasteurization processes. Introduced to the U.S. market by Lyras, Inc., the safe and sustainable cold pasteurization solution inactivates bacteria without heating the liquid, preserving its natural flavor and extending its shelf life, all while reducing carbon dioxide emissions, the need for water and expensive cleaning chemicals and equipment.

With Lyras' technology, dairy processors quickly experience lower operating costs, higher product quality, more uptime and stronger compliance with environmentally friendly initiatives.

"Our claims might sound grand, but our studies show that if the global dairy industry switches to our patent protected UV light pasteurization process, we could – each year – save at least 40 million barrels of crude oil and enough drinking water to meet the needs of 45 million people," said Rasmus Mortensen, CEO and founder of Lyras. "That doesn't include all of the pipes, tanks and cleaners that would no longer be needed. If you add the use of this technology on juices, wine, beer and other liquids, there's potential for even greater environmental savings."

### UV light "as effective as heat," research shows

Tatiana Koutchma, PhD, a research scientist for Agriculture and Agri-Food Canada, has studied UV light for low UV transparent (UVT) liquids and beverages for nearly 20 years and has worked with manufacturers aiming to develop nonthermal methods to process both liquid and solid food products. "We've long known that UV light can disinfect water, but as we're learning, with the right methods, UV light is also capable of preserving and improving safety of other less transparent liquids such as milk and juice products. UV is as effective as heat against food borne pathogen and spoilage organisms, but it requires less energy and water, has no effect on taste and flavor, and actually extends the shelf-life of the liquids."



**UV light, the principle Lyras machines are working on, inactivates even the most hardy thermoresistant bacteria and spores without compromising product quality (photo: Lyras)**

Lyras has devoted the last six years to extending the capabilities of UV light with a patent-protected light filter. This filter lets through only the precise UV wavelengths needed to remove microorganisms in milk without heating or cooling it and inactivate even the most hardy thermoresistant bacteria and spores without compromising product quality.

## DSM

### 1-HOUR PHAGE DETECTION

DSM has launched the new Delvo Phage test kit and Delvo Analytics app. The 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%. The new Delvo Analytics app 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. Together with DSM's whey testing and culture rotation services, the new digital solutions enable cheese and fermented milk product producers to make smarter, data-driven decisions in real-time for more efficient and cost-effective production processes.



DSM's newly expanded, integrated phage management solution delivers the speed producers need to outsmart phages and minimize costly downgrades in product quality (photo: DSM)

## Weber Maschinenbau

### ULTRA-MODERN PRODUCTION PLANT

Weber Maschinenbau has at the Neubrandenburg site installed a new sheet metal construction production plant. With this new, fully automated plant from TRUMPF, the company can produce stainless steel parts and components that are required for the production of slicing and packaging lines in the food industry in a highly efficient and networked manner. The new lasering and bending automation resolves this bottleneck and a greater number of parts can be supplied for subsequent processing steps.



Taking the new sheet metal production plant in operation, from left: Tobias Weber, Günther Weber, Dr. Stefan Rudolph, Bernd Jaehner (photo: Weber Maschinenbau)

## Arla Foods Ingredients

### NEW DRY-BLEND MFGM

Arla Foods Ingredients launched a dry-blend version of its MFGM ingredient, helping formula manufacturers reduce energy usage and production costs without compromising on safety or quality. Lacprodan MFGM-10 was the first MFGM (milk fat globule membrane) ingredient for the global infant formula market. It is rich in phospholipids and gangliosides.

Now Arla Foods Ingredients has made MFGM available in a dry-blend option – Lacprodan Premium MFGM-10, free from Cronobacter sakazakii.



MFGM ingredients made from whey (photo: FI)



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# Stevia solutions for dairy alternatives

## Marrying two consumer trends



Author: Delphine Forejt, Category Development Manager for Dairy and Baby Food at Tate & Lyle Europe, looks at how dairy alternative and sugar reduction trends are beginning to overlap, the opportunities it brings, and the challenges manufacturers face in meeting this new demand.

Over the past few years plant-based food and drink has become more than just a trend. It's no longer something just for those observing a vegan diet but accessible to everyone, with more people than ever labelling themselves 'flexitarian'.

Dairy alternatives are becoming an increasingly popular choice, whether it's a dash of plant-based milk in a tea or coffee, or more complex desserts and ice-creams made exclusively from plant sources. There is now more variety on offer, with plant sources such as oat, coconut or almond milk, all of which have overtaken soy in terms of popularity in recent years<sup>1</sup>.

Across Europe, the number of dairy alternative launches grew by 32% between 2016 and 2019 with almost 4,000 new product innovations being launched in 2019 and 2020. It demonstrates that the demand is there, and manufacturers have an opportunity to tap into this if they can create something that is unique and will stand out from the crowd.

One of the key drivers behind the growing shift towards plant-based products is perceptions around health credentials. We know that nutritional value is one of the considerations behind food purchasing decisions – 41% of French consumers check nutritional content when buying cheese, while a third of UK consumers check the nutritional content on food package when shopping<sup>2</sup> – and this is no different when it comes to dairy alternatives.

However, it is important to remember that taste remains the most important factor in many consumers' food and drink choices. In fact, 88% of consumers say that taste has the greatest impact on food and beverage purchases<sup>3</sup>, so this should undoubtedly be the foremost concern in any dairy alternative formulation.

Manufacturers face a challenge in finding a balance between the growing health demands of consumers and continuing to deliver the products they enjoy, but there are solutions available to help them achieve this. At Tate & Lyle, we have a broad toolbox of ingredient



(photo: Tate & Lyle)

solutions that are designed to help manufacturers tap into the plant-based trends, and our expert team works closely with our customers to help them find the bespoke solutions that best suit their needs.

## Sugar reduction

As health remains at the forefront of the agenda for consumers, sugar is seen as a growing concern. This is already evident in their dairy choices, with several low-sugar dairy products entering the market in recent years. We know that 37% of people in Europe are likely to buy a yoghurt with no added sugar<sup>4</sup>. However, when taking sugar out, any sugar alternative used should still deliver on the plant-based and natural credentials consumers are seeking.

At Tate & Lyle we have a broad portfolio of stevia sweeteners, plant-based sugar alternatives that are suitable for a range of applications. These can offer various sweetness and taste profiles to deliver on different formulation needs. For example, we have developed a UHT coconut-based cocoa drink with no added sugar made with our Intesse Stevia 2.0, CLARIA Bliss, PROMITOR Soluble Fibre and HAMULSION Custom Stabiliser Systems. The formulation provides a clean taste, a creamy indulgent mouthfeel and a stable visual appearance.

Stevia delivers on the plant-based trend while making great-tasting, healthy options for food and beverages. It is becoming increasingly popular and has now overtaken aspartame as Europe's third most popular sweetener, accounting for more than a quarter of all sweetener launches in Europe<sup>5</sup>. There is also an increasingly positive attitude from consumers towards stevia – 31% say they are likely to buy a product containing stevia<sup>6</sup>.

## Holistic health

While sugar is a key concern for some consumers, manufacturers must also consider the wider health credentials of their products. Fat content and fat type for example are key concerns for many. Coconut fat is often used as a substitute for animal-based fats in products, such as plant-based desserts and ice-creams. While this can allow manufacturers to closely replicate the taste and texture that consumers are familiar with, it is higher in saturated fat than some of the fats found in cows' milk. Moreover, in 2019, 80% of plant-based ice-creams and fermented desserts new launches in Europe contained added sugars, with on average 13% total sugar<sup>7</sup>.

We have worked with manufacturers to create dairy alternative desserts using oils that are low in saturated fats alongside our plant-based clean-label texturizing solutions to replace coconut fat, bringing stronger all-round health credentials. Our team has successfully worked with customers across a host of different desserts with a range of textures, from mousses to Panna-Cotta style desserts.

## Maintaining quality

Of course, removing sugar and fats can pose some technical difficulties for manufacturers. Despite a growing range of plant-based dairy alternatives being readily available, many of these do not function in the same way during the manufacturing process, which risks negatively impacting the taste, texture and mouthfeel of products.

There are several solutions out there to help ensure the removal of sugar or fat does not impact the quality of the final product or a product's plant-based claims. At Tate & Lyle we have a range of fibres such as PROMITOR Soluble Fibre, and starches such as CLARIA Functional Clean Label starches, which can be added to recipes to maintain texture and mouthfeel when ingredients are removed, without affecting taste nor the appeal of the ingredient list.

Our HAMULSION Stabiliser Systems are customised to meet the

specific needs of different food products, helping to meet the specific needs of dairy alternatives, helping to improve product mouthfeel and texture profile, including clean label options. The versatile range can act as a thickening or gelling agent, emulsifying component, or functional proteins across a host of different plant-based sweet formulations.

We expect the growing popularity of dairy alternatives to be a long-term shift in consumer behaviour. And there is a sense that we are only beginning to scratch the surface of the opportunities in the plant-based category, with much more innovation still to come. It's important for manufacturers to make sure they stay ahead of the trend, so they don't fall at the first curdle.

<sup>1</sup>Mintel GNPD 2015 – 2019

<sup>2</sup>Lightspeed/Mintel 2020

<sup>3</sup>International Food Information Council Foundation, 2020 Food & Health Survey, April 2020

<sup>4</sup>Tate & Lyle Proprietary Research, 2020 Global Consumer Ingredient Perception. Research – France, Germany, UK – Base: 2802 respondents

<sup>5</sup>Mintel, Global New Products Database (GNPD) Aug 2020

<sup>6</sup>Tate & Lyle Proprietary Research, 2020 Global Consumer Ingredient Perception. Research – France, Germany, UK – Base: 2802 respondents

<sup>7</sup>Mintel GNPD 2019 plant-based yogurts and ice-creams new launches – Europe.

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# EDA Annual Convention 2021

## Sustainable food systems and European dairy

**S**ustainable food systems and European dairy was the general motto of this year's agm of the European Dairy Association (EDA) held on 1 October in Brussels. The event counted 90 live participants and about 100 online attendees spread across the world. In the opening speech, EDA President Giuseppe Ambrosi highlighted the European lactosphere's ambitions in terms of sustainability. The European dairy industry did not wait for the EU Commission and the European Green Deal but has taken the United Nations Sustainable Development Goals seriously publishing carbon net zero objectives far ahead of the Green Deal.

The industry's ambition is based on excellence of products, processes and people, Ambrosi said, which is recognized at global level. Thus, the world is calling for more European dairy. But for being an accepted global player, the European Union must operate on a secure basis in terms of energy, workforce and security in food supply. Ambrosi made it clear that any regulations under the roof of Green Deal or Farm-to-Fork must be science-based and science-assessed calling for an official impact assessment by the EU Commission.

### Sustainable food systems and European dairy

**Prof. Roel Jongeneel**, Wageningen University, analysed probable consequences of the Green Deal and the Farm-to-Fork Strategy for the EU dairy industry and showed the way forward. The EU's key challenge is not the environment, Jongeneel said, pointing out to the Southern Hemisphere where



### Annual Convention

### Sustainable Food Systems and European Dairy

uniting dairy excellence & ambition

sustainability has not come as far as in our place. But in the future, the effects of the EU's green policy will make cow herd numbers decrease. This will especially happen in the some 15 hot spots around the EU where dairy is concentrated – with possibly serious consequences for these areas.

The impacts of the various targets issued by the Commission (a.o. 35% less GHG until 2030, 50% less pesticides ...) have been partly evaluated by JRC, Jongeneel reported. Overall, these targets may lead to a 12% drop of milk production depending on the region and an up to 36% price increase. Farm income may benefit only if markets work in favour. On the processors' side, small players active in domestic markets as well as large corporations may benefit from the changes while

large co-ops that are dependent on world markets and have a narrow portfolio may be the losers, Jongeneel said.

The Dutch economist recommends that while the Green Deal is the long-term vision advancements should be made in incremental steps in a regional approach. The market, i.e. tradeable emission rights, would be the best means to reduce emissions in a cost-effective way, Jongeneel told the audience.

### The Green Deal and its consequences

**Lukáš Víšek**, member of cabinet of First Executive Vice President Frans Timmermans and one of the main architects of the Green Deal, said that the climate crisis we face would not allow wasting time for improv-



**Lukáš Víšek, EU Commission: EU-made food will become a global sustainability standard**

ing sustainability. The EU has taken it all into law so there won't be a chance for later politics and upcoming crises to change the fundamental goal of climate neutrality. The Green Deal, he added, was made to speed up all processes for climate protection that have already been started, some of them years ago as with the EU dairy industry.

The Green Deal and the Farm-to-Fork Strategy look at the whole food supply chain incl. consumers' diet and food waste at this stage. The dairy industry, Víšek stated, is in a powerful position in midst these changes, as it can reach out to farmers as well as to consumers. The sector can demand milk produced in a sustainable way and stimulate demand for more sustainable products from consumer side. The Commission will develop Eco Schemes to help farmers adopt the right practices, Víšek promised.

In the end, Víšek hopes, that EU food will be high in demand worldwide for its sustainability, helping manufacturers to compete in the world market, and that EU-made food will become a global sustainability standard. He invited all involved stages of the dairy chain to feed the Commission with relevant insights (incl. labelling) for assessment of the consequences of the Green Deal that will be made science-based and science-evaluated.

### FrieslandCampina's route to sustainability

**Hester Maji**, Corporate Director Public & Regulatory Affairs FrieslandCampina, explained how F/C is pursuing sustainability. The co-op active in 38 countries around the globe has explicit targets that



**Hester Maji, Corporate Director Public & Regulatory Affairs FrieslandCampina: A glass of milk cannot be compared to a chair in terms of sustainability**

were defined according to the UN climate plan. For instance, F/C is the first dairy in the world offering farmers a biodiversity monitor that allows them to assess any progress they made in this respect.

As dairy farms are highly individual, there can't be a sustainability policy that fits all. Therefore, Maji said, legislation must be customised. And the EU must look at the overall picture including side effects. Maji cited the target of 50% reduction of pesticide use that could well lead to higher mycotoxin levels in food. Addressing the EU target of 25% organic land by 2030, Maji took the Netherlands as example: the total milk market has a



**Prof. Roel Jongeneel, Wageningen University: The EU's key challenge is not the environment**

volume of €10 billion. If 25% of volume sales should be made by organic dairy, consumers would have to pay an annual €250 million more for dairy products. She, Maji said, can't see a solution to this dilemma. Maji added that Brussels needs to look outside the EU – the dairy industry has competitors and needs a level playing field. Pointing out to carbon labelling, the F/C exec sees a difference: "A glass of milk cannot be compared to a chair". With this Maji meant that milk brings a whole lot of valuable nutrients which must be appreciated as well. Maji favours to bring together eco and nutrient scores in one food label.



**EDA President Giuseppe Ambrosi: The European lactosphere has long since set carbon zero objectives**

## Cutting technology from holac

### SWISS CHEESE SPECIALTIES COME INTO SHAPE

Swiss cheese manufacturer Imlig, based in Oberriet, has just installed a new high-performance machine from cutting specialist holac into their line operation. For Imlig, the focus was on being able to process a wide range of different types of cheese with a single machine. The high demands on hygiene were also decisive in the company choosing for holac.

The new cutting machine is an integral part of the production line. Imlig specializes in large industry packs for hotels, restaurants and canteens, in addition to medium and smaller packs for discount. Imlig produces a wide range of different types of cheese - including semi-hard cheese, grated cheese, raclette cheese and fondue cheese. The cutting machine had to be adaptable to process com-

plete blocks with varying consistencies and fat contents. "With this machine, holac has helped us to close a very important gap in our product range," says CEO Urs Imlig.

#### Top performance in terms of service and hygiene

Imlig was also convinced of the ease of use and hygiene: "We have also found that the machine is very easy to disassemble, clean and re-assemble, which is vital for the production of food."

The cheese manufacturer Imlig focuses on the quality and reliability of the systems: over 60 employees work in the company, some of whom work in three shifts. Up to 1,000 tons of cheese ripen in the fully automated warehouse, 50 percent of which is exported.



Swiss cheese manufacturer Imlig relies on cutting technology from holac (photo: holac)



## CP Kelco

### DUAL-FUNCTION GELLAN GUM FOR DAIRY ALTERNATIVES

CP Kelco launched KELCOGEL DFA Gellan Gum, a single-ingredient, dual-function solution for formulating plant-based, dairy alternative beverages. It can help deliver both the desired suspension and mouthfeel, enabling product developers to simplify their ingredient list.

Shaw Gilmer, Sr. Director, Biogums Strategic Platform at CP Kelco: "With our newest gellan gum grade, developers can deliver a simpler product label and potentially reduce their total cost in use without compromising on quality. It's a win-win for both the dairy alternative drink producer and consumers."

**KELCOGEL DFA Gellan Gum allows for simpler labelling of dairy alternatives**

## Palsgaard

### CONTINUED CO<sub>2</sub>-NEUTRALITY THROUGH BIOGAS

Palsgaard has started to build a biogas facility, named Palsgaard Bio Energy A/S, which will produce biogas from the treatment of wastewater from Palsgaard's production. The energy will be used for heating. Partner in the project is the wastewater treatment facility Hedensted Spildevand.

The key to developing the biogas facility was for the partners to change their mindset and see wastewater as something other than just waste. Instead, they considered it a useful material that could become a vital part of a circular system. The development of the facility will ensure that Palsgaard's production in Juels-

minde remains CO<sub>2</sub>-neutral as the production of emulsifiers and stabilisers expands significantly towards 2030, which is expected to increase the volume of wastewater by 8 percent annually. By producing biogas in the wastewater treatment process, annual emissions of about 1,200 tons of CO<sub>2</sub> can be avoided. At the same time, the facility will provide 50 percent better wastewater treatment than previously.

The facility will be able to treat a maximum of 350 m<sup>3</sup> of wastewater a day and generate 70 m<sup>3</sup> of biogas, which means Palsgaard can cut their consumption of natural gas and supplement it with biogas instead.



Kim Bøjstrup, COO Palsgaard, Ole Pedersen, CEO Hedensted Spildevand, and Anders Brix, CEO of the Schou Foundation at the groundbreaking of the new biogas plant (photo: Palsgaard)

## PTFE seats from EBRO comply with EG1935/2004

### SUITABLE FOR BASIC FOOD CONTACT MATERIAL REQUIREMENTS

The PTFE seats from the Hagen-based company EBRO ARMATUREN meet the European Regulation EC 1935/2004 which is a framework regulation that defines the basic requirements for contact materials in the food industry. Applications are mainly found in the food, beverage and pharmaceutical industries.

The PTFE seats offer advantages. The chemical resistance of PTFE, e.g. during regular cleaning processes, ensures greater safety and increases the service life of the fitting. They do not take on the colour, odours or tastes of the media and can therefore be used for a wide variety of batches after cleaning. There is no need for costly and time-consuming replacement of the seals. Production interruptions are minimised and, as a result, plant availability is increased.



The wafer-type butterfly valve type EBRO T 211-A with its PTFE lining complies with the European Regulation EC 1935/2004 (photo: EBRO ARMATUREN)

## Austria

### CLIMATE-NEUTRAL CHEESE PLANT

The SalzburgMilch cheese plant in Lamprechtshausen has recently become climate-neutral. In recent months, the largest rooftop photovoltaic system in the Austrian province of Salzburg has been installed there. Each year, it supplies as much electrical energy as 460 private households consume. A total of over 4,200 photovoltaic modules generate a combined output of around 1.6 megawatts peak on a roof area of 13,000 m<sup>2</sup>. More than 99% of the solar power generated goes directly into the operation of the cheese dairy. SalzburgMilch offsets the rest of the GHG emissions.



The cheese plant in Lamprechtshausen, Austria, generates 1.6 MW solar energy (photo: SalzburgMilch)

## SIG

### MORE PLANT FLEXIBILITY AND EFFICIENCY

All new SIG filling line systems and downstream units are now equipped with built-in bi-directional digital recipe management. The solution is also available as an automation upgrade.

Digital recipe management enables automatic recipe synchronisation across all relevant parts of the filling line including the downstream. For

manufacturers, this means a significantly faster change to the next lot or product, considerably more flexibility in the production process, and ultimately helps to ensure a smarter and more connected filling plant. The new built-in capability also means that the latest downstream equipment for SIG filling lines can now make automatic format and volume changes.



Bi-directional digital recipe management was developed through SIG's solution-based Smart Factory platform (photo: SIG)

## Strategic partnership

### SACCO SYSTEM & DÖHLER

Döhler and Sacco System entered a strategic partnership in the area of plant-based dairy alternatives and food cultures. This partnership is to boost the development and success rate of new products and brands in this dynamic and growing market segment.

Producers are challenged to work with numerous new ingredients, complex formulations and multiple suppliers, which is both time-consuming and may even represent a risk for the successful launch of new products. This is the challenge that the Sacco System and Döhler partnership is set out to address.

## Groba

### DETECTING FOREIGN BODIES IN GRATED CHEESE

Together with partner company SWAT Automation, Groba has developed the ShredScan control system (patent pending), which detects previously undetectable foreign bodies and impurities in grated cheese, thus preventing product contamination. The system optically inspects a falling stream of grated cheese and can detect foreign bodies and impurities made of plastic and other materials from a size of 2 mm.

The cheese coming out of the grating machine falls through a light channel onto a conveyor belt. The camera system is mounted directly in front of the product stream and a contrast plate, the detection field in the product stream is uniformly illuminated. A detected foreign body leads to a visual display and an alarm signal, which is used for an evaluation adapted to the system, e.g. system stop. The de-



tected foreign object can be removed by the operator.

The ShredScan system has been in development since 2018 and is already working reliably on several production lines.

The new foreign object detection system from Groba also detects contaminants made of plastic using an optical process (photo: Groba)



## NDT

### ONE CHEESE VAT FOR ALL TYPES OF CHEESE

With its new MCV multi-cheese vat, NDT is presenting what it describes as a groundbreaking development. The vat can produce everything from cottage cheese to traditional yellow cheese to vegetable substitutes without compromise.

The MCV vat (sizes 4,000 - 20,000 l) is supplied as standard for one cheese category and with one cutting format. Expansion to another type requires a plug-in consisting of a control unit and a "quick-change" knife set for the respective curd format. A new generation of the control system creates full flexibility in terms of filling level, stirring, cutting, discharging while stirring, temperature control (temp. over time and delta T) and unlimited number of recipes.

The new highly flexible MCV cheese vat can produce all types of cheese (photo: NDT)

**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](mailto:contact@alpma.de)  
Web: [www.alpma.de](http://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](mailto:info@groba.eu)  
Web: [www.groba.eu](http://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](mailto:info@holac.de)  
Web: [www.holac.de](http://www.holac.de)



**TREIF Maschinenbau GmbH**

Toni-Reifenhäuser-Str. 1  
57641 Oberlahr, Germany  
Phone: +49 (0)26 85/944-0  
Fax: +49 (0)26 85/1025  
Email: [info@treif.com](mailto:info@treif.com)  
Web: [www.treif.com](http://www.treif.com)

**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](mailto:contact@alpma.de)  
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Email: [decontact@chr-hansen.com](mailto:decontact@chr-hansen.com)  
Web: [www.chr-hansen.com](http://www.chr-hansen.com)

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**ALPMA Alpenland Maschinenbau GmbH**

Alpenstrasse 39 – 43  
83543 Rott am Inn, Germany  
Phone: +49 (0)8039 401 0  
Fax: +49 (0)8039 401 396  
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## Swiss cheese specialties in shape Cutting technology from holac

Swiss cheese manufacturer Imlig relies on cutting technology from holac. The company, has just installed a new high-performance machine by cutting specialist holac into their line operation. For Imlig, the focus was on being able to hygienically process a wide range of different types of cheese with a single machine. The high demands on hygiene were also decisive in the company choosing for holac.

Imlig produces a wide range of different types of cheese, the cutting machine had to be adaptable to process complete blocks with varying consistencies and fat contents. Imlig was also convinced by the ease of use and hygiene as well as by the quality and reliability of the system.



Swiss cheese manufacturer Imlig relies on cutting technology from holac (photo: holac)

## Separating cold cut slices or prolong shelf life

### Weber

Weber SprayTech allows for better separation of cheese slices (photo: Weber)



Weber SprayTech makes it possible to spray a non-stick agent that cannot be detected by consumers onto a product, allowing individual portion slices to be removed more easily and without damage. It is used for products that are highly sticky due to their consistency, such as cheese and vegan products. In many cases, Weber SprayTech can replace the function of traditional paper or foil separators and is therefore an environmentally friendly, sustainable alternative to the interleaver.

The use of SprayTech technology is particularly exciting for products where it is simply impossible to use paper or foil for separating the individual slices. One such example is the use for shaved applications.

Weber SprayTech only starts spraying when the blade releases the product, in order to use resources more sustainably. SprayTech can also be used for the application of agents that extend the product's shelf life (bioprotection).

Weber SprayTech can be integrated in all current Weber and TEXTOR slicers.

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### 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

Office Dorsten: Anja Hoffrichter, ah@blmedien.de, Cell phone: +49(0)1782330047

### 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:

Katja Ledder, Cell phone: + 49 (0) 1 72/3 25 70 99, Email: k.ledger@kontrastdesign.com

### 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

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