

INTERNATIONAL

# DAIRY

March/April 2021

magazine

PROCESSING | INGREDIENTS | PACKAGING | IT | LOGISTICS

[www.international-dairy.com](http://www.international-dairy.com)



## The pioneer

### for groundbreaking filling technology

GRUNWALD filling machines - since the beginning of 2019 in peroxide-free ultraclean (UC) hygiene design with verifiably proven, maximum hygiene level (min. LOG4). Guaranteed reliable sterilisation of cups, buckets and lids with pulsed UV(C) radiators.

**GRUNWALD**   
Dosing · Filling · Packing

# PREVIEW **OUR** PREVIEWS

A FREE SERVICE BROUGHT TO YOU BY IDM – INTERNATIONAL DAIRY MAGAZINE

As a reader of IDM you will already know that we produce quality in-depth previews of all the major exhibitions relating to our industry but did you know that you could sign up to receive these special show guides before they are even published?



To take advantage of this free service just email [sossna@blmedien.de](mailto:sossna@blmedien.de) with the word Preview in the subject line and you will be registered – no forms, no fuss!

Don't delay, sign up today to receive your pre-publication PDF – completely free of charge!

# Not a substitute, but a supplement

## Enormous potential for nature-identical milk ingredients



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

It is to be hoped that the dairy industry will recognise the emerging market for nature-identical proteins and possibly also fats as relevant. What is meant is 'cellular agriculture', i.e. the production of milk components by 'precision fermentation' and 'stem cell cultivation'. Casein or whey protein produced by genetically modified yeast cells will in all likelihood never be able to completely replace original milk, just as plant-based milk substitutes probably have a limited substitution potential. But markets are opening up. And, if in the long run, even a few percent of the milk ingredients produced worldwide are contributed by the new processes, we are quickly talking about a raw material quantity in the order of magnitude of the milk production of an entire country. Therefore, there is a strong case for dairy companies to look at the new possibilities opened up by fermentation technology. Tnuva or Hochland, and now also Bel, have already publicly committed themselves to what probably only hopeless traditionalists would call a border crossing in the form of participation in corresponding start-ups.

Nature-identical milk ingredients are unlikely to develop much competition in the EU in the long term. The situation is different in regions where milk production simply makes no sense, such as in the Saudi desert, in countries where part of the population is still starving, or in states that strive for the highest possible self-sufficiency, such as Singapore or China. There, fermentation products are likely to be quickly and readily absorbed by a consumer base that is often tech-savvy anyway. Apart from the avoiding of by-products of low value in a dairy industry, right down to the bull calves, or the problem of exporting livestock, the sustainability advantages of fermentation products in terms of space and resource requirements will come into their own.

The extraction of individual, high-quality milk ingredients such as lactoferrin or special whey proteins, which are used as ingredients in baby food, for example, is therefore likely to take a back seat, but at the moment may be much more promising than simply reproducing milk or cheese. The best example is the market for high-quality special baby food, which literally sucks up fermentatively produced GOS and HMO, with the manufacturers of these ingredients earning splendidly.

We are currently experiencing a new industrial revolution, not only in IT, but also in food production. If you want to stay on the winning side, you should – no, you have to deal with the new opportunities. Of course, there will also be winners on the traditional side, because there will always be demand for real cheese, etc. Companies just have to decide where they want to go, says Roland Sossna.



**24** Full service, all from one source  
**Ingredients**



**16** Automatic high-speed handling of cheese slice pouches  
**Packaging**



**22** Lockdown priorities create dairy opportunities  
**Ingredients**

**Editorial:**

**3** Not a substitute, but a supplement

**Cover Page:**

**20** Successful model: "ultraclean (UC) hygiene design"

**EIT Food Trust Report:**

**5** Consumer trust in food

**Interview:**

**10** Those Vegan Cowboys: Precision fermentation

**18** DSM/CSK: Stronger together

**Packaging:**

**12** High-tech for the high-care sector

**16** Automatic high-speed handling of cheese slice pouches

**EDA Column:**

**26** Protection of dairy terms

**FMCG Gurus Column:**

**8** Probiotic claims of high appeal in the dairy sector

**Ingredients:**

**6** Nature-identical milk proteins

**7** SACCO SYSTEM New Website

**14** Cell-based vs. plant-based

**22** Lockdown priorities create dairy opportunities

**24** Full service, all from one source

**Markets:**

**26** 3A Business Consulting: Global IMF market

**Events:**

**9** Nordic Dairy Congress 2022

**15** FILTECH 2022

**Columns:**

**7, 9, 15, 17, 26, 29**

News

**30**

Suppliers guide

**31**

Imprint

**31**

Preview IDM May/June 2021

# Consumer trust in food

## EIT Food Trust Report

**W**hat is the state of consumer trust in the food system and in food products? This was a question addressed by the EIT Food Trust Report, which was conducted together with a consortium of academic partners. A total of 19,800 consumers in 18 European countries were surveyed. IDM spoke with co-author Prof. Klaus Grunert from Aarhus University about the most important statements of the report.

**IDM:** Please briefly introduce the report and tell us about your work and your scientific orientation

**Grunert:** The Trust Report reveals the trust that consumers have (or do not have) in the main actors in the food sector – farmers, producers, retailers and authorities. We measured the level of trust in a variety of dimensions and looked at how this impacts the confidence that consumers have in the integrity of food products and food technologies. The survey follows a behavioural science approach and relies on the extensive research that exists on trust, how it is formed and its impact. We surveyed a total of 19,800 consumers from 18 different European countries, making it the first-of-its-kind report in Europe.

**IDM:** Why do only a few consumers think the food industry is sustainable?

**Grunert:** Sustainability is a complex and multi-dimensional term and is therefore complex to evaluate, which makes it even more difficult for consumers to form opinions on the degree of sustainability of companies. In addition, there aren't many objective indicators. There have been many stories about greenwashing and consumers are still often unable to identify sustainable items.

**IDM:** Is the food industry actually not as sustainable or is it just being denigrated in the media?

**Grunert:** I believe that the food industry is struggling with the complexity of the sustainability concept just as consumers do, but the food industry should have the resources to define objective goals, pursue them and communicate them effectively.



**Prof. Klaus Grunert, Aarhus University:** The food industry is struggling with the dazzling diversity of the concept of sustainability just as much as consumers are

**IDM:** What can the industry do to improve its image in terms of sustainability?

**Grunert:** The industry needs to show that it understands what sustainable food production means and that it takes the sustainability issue seriously. It needs to show that it has concrete plans of action to improve sustainability and it needs to become more transparent in what it is doing. In this context, the question of a comprehensive eco-label has special importance

# Nature-identical milk proteins

## The concept of LegenDairy Foods

**B**erlin-based start-up LegenDairy Foods, which is working on the fermentative production of milk proteins, does not see itself as a direct competitor of the dairy industry. As the founder and head of the company, Raffael Wohlgensinger, explained in mid-February at a webinar "Cheese and Co. from the Fermenter. How does it work?" organised by the German Dairy Industry Association MIV, original dairy will stand alongside plant-based alternatives and nature-identical milk ingredients from fermentation in the long term. Which area will hold or gain which market share is, of course, an open question. A study by a packaging company predicts a market share of between 2 and 50% for nature-identical proteins in the long term, depending on further developments. In any case, dairy farming as well as dairies and cheese dairies will not disappear.

### Market acceptance

LegenDairy Foods has launched its own market acceptance study in which 6,000 consumers in six countries were surveyed (the subject of the question was a "LegenDairy Mozzarella", the GMO production process was mentioned in the introduction). In Germany, according to Wohlgensinger, almost a quarter of consumers will buy food with nature-identical proteins, another 40% would "maybe" do so. Only just under 8% declare themselves definite non-buyers. The first products by LegenDairy Foods are to be launched on the market in 2022. The company is also looking for cooperation with the dairy industry, as it has the appropriate machinery and the necessary market access. It is also planned to grant licences to culture producers who will provide the user, i.e. the dairy industry, with strains developed by LegenDairy Foods with precisely defined performance.

### Approval

The focus of LegenDairy Foods is on casein and whey proteins, initially mainly for use in mozzarella and ricotta, but the range of applications is to be expanded over time. For fermentation, a very large number of yeast and fungal strains are/were screened to select those that promise the highest yield. Upscaling to industrial scale is relatively complex, but will probably be solved soon, according to Wohlgensinger's forecast for a first market entry next year.

In any case, the proteins from LegenDairy Foods must receive Novel Food approval by the EU. According to Wohlgensinger, this will take about 18 months. Once the proteins are officially declared safe, this will have a positive effect on consumer acceptance. Nevertheless, the EU is not the first place for LegenDairy Foods as far as market introduction is concerned, because in other, non-European countries there is a



A supply chain without cows (Source: LegenDairyFoods)

Areas of cooperation between dairies and precision fermentation (Source: LegenDairyFoods)

much more open climate for innovation. But the EU is the largest milk consumer in the world, so this market will not be neglected by LegenDairy Foods in a later step either.

### No abandonment

The starting point of all the start-up's R&D work is to make products that promise consumers the pleasure they are used to. A concept of renunciation, as propagated by vegans in some cases, would only work in niche markets. Wohlgensinger emphasised that his 17-member team is also committed to the cultural identity of food, traditional production and the love of the product "milk/cheese" – after all, some of the employees previously worked for Danone or Nestlé. As far as costs are concerned, Wohlgensinger is talking about three times the current price of casein today, but in ten years there should be cost parity.

Precision fermentation, as practised by LegenDairy Foods, ultimately produces the same products as the animal, but uses significantly fewer resources. If "microorganisms are domesticated instead of mammals", 98% less water, 84% less energy and 91% less land is needed for the same yield, and 65% less greenhouse gases are emitted. LegenDairy Foods' concept, by the way, is nothing really new; insulin and chymosin have been produced fermentatively since the 1980s and 1990s respectively. Now, in the course of the 5th industrial revolution triggered by genetic engineering, milk proteins are being added. It is important to note that the fermentation product does not contain any genetically modified organisms, unlike meat from cell cultures, for example. And wanting to produce milk completely by fermentation will remain a vision in the very long term.



**Raffael Wohlgensinger, CEO LegenDairy Foods: The dairy industry will not disappear**

## New Website SACCO SYSTEM

SACCO SYSTEM has renewed the design, aesthetics, and navigation of its website to guide users for a more practical, efficient, and enjoyable experience. The new version of the website is designed to improve the user experience by making the navigation more immediate and facilitating the access to information about our product portfolios and services. The site offers three areas: Food, Probiotics and Agro-vet section. [saccosystem.com](https://saccosystem.com)



**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](https://dairy.khs.com)

# Probiotic claims of high appeal in the dairy sector

Consumers are looking to improve their health and wellness. This is being driven by consumers having aspirational views towards long-term health maintenance whilst at the same time, being conscious about the lingering risk of COVID-19. Functional claims that offer a nutritional boost are of high appeal to consumers. This is resulting in the growing popularity of probiotic products, as consumers look to boost their immunity and digestive health – especially as they deem the two to be interlinked. Probiotics are especially popular within the dairy sector, especially as consumers deem dairy products to be everyday food and drink that they know and trust, associate with being healthy, and believe easy to incorporate into daily diets. The promotion of probiotics within the dairy sector is also something that can help overcome any negative health perceptions associated with the sector.

Across the globe, probiotic claims are growing in popularity. This can be attributed to several factors. From a consumer perspective, people are becoming more aware of probiotics and the related benefits. Additionally, consumers are also now accepting that products that are actively positioned around beneficial bacteria content can also offer sensory appeal. Whilst consumers may continue to lack awareness of certain types of probiotics and strains, as well as CFU counts, they do believe that such products can help contribute to a healthy diet and lifestyle. This is something that is especially important in a pandemic environment and it is worth noting that in FMCG Gurus

COVID-19 survey series in 2020, 75% of global consumers say that they associated probiotics with boosting immune health.

## 59% buy probiotics

FMCG Gurus research in 2020 found that 59% of consumers said that they had purchased probiotics, either in food and drink or supplement form, over the last twelve months. This was a noticeable increase compared to the 51% who said this in 2018. This shows that a growing proportion of consumers are seeing out health boosting claims. It also shows that the probiotic market is relatively resilient to price sensitivity, with purchasing continue to be more common despite 53% of consumers saying that they are currently trying to reduce their spend on food and drink due to recession. Of those consumers who purchase probiotics, yogurt in a cup (59%) and yogurt drinks (47%) are the most popular types of products purchased. A total of 27% of these consumers also said that they purchased probiotics in kefir form.

Over recent years, there have been mixed views on the healthiness of dairy products. On one hand, such products are associated with being high in ingredients such as protein and calcium. However on the other hand, such products are also associated with being high in dietary evils such as fat and sugar. Irrespective of any negative press the sector has received in recent years, the popularity of probiotic claims means that consumers believe that dairy can help contribute to a healthy diet and lifestyle. When asked what type of probiotic product consumers prefer, 79% say that they prefer food and drink

to supplements and of these consumers, 66% cited taste as the main reason. This is something that is especially important for the dairy market. Indeed, despite efforts to try and improve health and diet over the years, the prevalence of lifestyle-related health problems continues to rise across society. This means that for many, attempts to lead a healthier lifestyle are not successful. This is because better-for-you products are often associated with compromise. The appeal of functional claims in categories such as yogurt will appeal to consumers because they are seen as tasty, everyday products that are easy to incorporate into daily diets. This will be of high importance to the 79% of consumers who say that they are planning to eat and drink more healthily in the wake of COVID-19.

When asked why they turn to probiotics, consumers are most likely to say to boost the immune system (65%), whilst 63% say to aid digestive health. These will be important claims that will appeal to consumers within the dairy sector, especially as consumers become more conscious about both these issues.

As a result of COVID-19, consumers have become less conscious about their immune health. For instance in 2020, a total of 49% of consumers said that they were satisfied with their immune health compared to 54% who had said this a year before. Meanwhile, 60% said that they have become more conscious about their immune health as a result of the pandemic. This shows that concerns about vulnerability to disease and illness are widespread amongst society overall, especially if they feel they are currently

## Dairy Opportunities of Tomorrow Nordic Dairy Congress 2022

The organizers behind the Nordic Dairy Congress have to postpone the upcoming congress due to the pandemic. The congress will be held May 18<sup>th</sup> – 20<sup>th</sup> 2022. The location will remain unchanged, Malmö in Sweden, Hotel Clarion Malmö Live. The NDC 2022 adjusted programme will be released in due time.

The congress is open for sign up via [www.nordicdairycongress.com](http://www.nordicdairycongress.com) and early bird price remains available. Contact: [info@nordicdairycongress.com](mailto:info@nordicdairycongress.com) or phone +45 66 12 40 25



not leading a healthy diet and lifestyle. As such, consumers will be looking to maximize their immune health to ensure that they are not easily susceptible to health problems. Additionally, consumers are also becoming more conscious about their digestive health. A total of 18% say that they are now more conscious about their digestive health as a result of the virus. Digestive health problems such as gas, bloating, and irritable bowel symptoms are common across the globe, something which can be attributed to factors such as an ageing society and changing dietary habits. As well as something that impacts on quality of life, consumers are also recognizing that the issues of digestive health and immunity are interlinked. As such, products that carry claims around aiding the immune system and digestive health within the dairy market will be of high appeal.

Consumers will find dairy products with probiotic claims appealing. This is because consumers want better-for-you products in sectors that they know and trust, associate with being natural, and crucially, deem affordable and tasty. The dairy sector should look to promote probiotic claims on products – especially in categories such as yogurt – to help position products as a convenient way of maximizing nutritional intake. At the same time, it is important that traits such as CFU counts and types of strains are not overly promoted at the expense of sensory appeal, and that any related health claims are need to be credible and transparent.

For more information contact FMCG Gurus at [info@fmcggurus.com](mailto:info@fmcggurus.com)

**Trepko**  
[www.trepko.com](http://www.trepko.com)

Worldwide supplier  
of filling/packaging machines 

## PACKAGING OF DAIRY PRODUCTS

- hygiene
- flexibility
- versatility
- comprehensive
- individuality
- reliability
- product safety
- high packaging quality
- accuracy
- ergonomic



DACH - Staaten  
TREPKO A/S Hinterbacher Str. 1. D-87439 Kempten/Deutschland  
Phone: +49 831 527 123 58 Mobile: +49 151 434 099 30 e-mail: [tesma@trepko.com](mailto:tesma@trepko.com)

# Presicion fermentation

Dutch start-up Those Vegan Cowboys plans to make cows redundant



**P**recision fermentation seems to be the new hype in raw material and ingredients production. Although a market entry for alternatively made milk constituents may be years away, the start-ups in precision fermentation enjoy a lot of attention in the food industry. IDM spoke with Jaap Korteweg, CEO of Dutch start-up Those Vegan Cowboys.

**IDM:** Please, say a few words about Those Vegan Cowboys.

**Korteweg:** We founded Those Vegan Cowboys at the beginning of last year, after we sold our legacy company The Vegetarian Butcher to Unilever. We were lucky to buy a fully operating lab in Ghent, with 25 scientists already working on plant-based ingredients for years. So, that's how we could make a jump-start.

Those Vegan Cowboys are up to making new vegan foods that are indistinguishable in flavor and structure from traditional milk and cheese. We develop our milk proteins using a method called precision fermentation. You can compare this method with brewing beer, only we try to use grass as a starting point. Just like a cow does. We are convinced that if we make our vegan cheeses as delicious as the traditional ones, we make a great contribution to our planet. With our method, we use five times less water and energy, in a very conservative rating. Oh, and off course: we can finally take out all animals of the industry and set them free.

I am a 9<sup>th</sup> farmer. I don't have much education. I see this as a great advantage for entrepreneurs: it's easy for me to keep my self-will, as I had to find out a lot myself. Although it would help if my English was a little bit better.

**IDM:** How did you come to milk as subject for development of alternatives?

**Korteweg:** This is an old idea of mine. It was logical for me to work on plant-based dairy, after working on the new meat. It's my mission to get all animals out of the food chain and make products in a more efficient and sustainable way.

**IDM:** What is the basis that you are working with, say soya, peas and so on, or is it modified microorganisms?

**Korteweg:** We use a method called precision fermentation to produce milk proteins very efficiently, with a much better eco-footprint compared to the traditional production using cows.

Using the genetic code for the milk proteins that is known and described in the



R&D is carried out in the own lab, but Those Vegan Cowboys also cooperate with universities



**Jaap Korteweg, CEO Those Vegan Cowboys: We are very open to work together with current players in the dairy industry**

literature, genes are synthesized, and integrated in well-known food-grade micro-organisms. Subsequently we optimize and train these micro-organisms to produce these proteins efficiently and quickly, yielding high concentrations.

**IDM:** What exactly do you plan to introduce to the market – alternatives for liquid milk, cheese, yogurt etc. – or single ingredients like casein and whey proteins

**Korteweg:** Making cheese is our main goal. We are up to making a wide range

of cheeses, which have the same taste as the original ones. Besides that, we will be working on milk, yogurt and in the end all dairy products. We want to make products; we will not sell white-label ingredients. But we are very open to work together with current players in the dairy industry. We are a strong believer of co-branding and working together with traditional players, just like we did with The Vegetarian Butcher.

**IDM:** How do you do the development works; do you cooperate with third parties/universities?

**Korteweg:** We have our own lab and we work together with universities like Wageningen University, Ghent University and several other researchers. Furthermore, we are in good contact with other players working in the precision fermentation field and several companies related to our field.

**IDM:** When do you think we will see first products enter the market?

**Korteweg:** The milk and cheese we work on in our lab will take another few years. But, in the meantime, we will bring a line of plant-based cheeses to the market with our partner Westland Cheese. We hope to be in store in The Netherlands, Belgium, Germany and Spain pretty soon and plan to roll out further.

All photos: Those Vegan Cowboys



Those Vegan Cowboys have available a fully-equipped pilot facility in Gent



Let's mix something up! With Hydrosol.

**Mix something up for fast success with delicious milk drinks from classical cocoa drinks to any other flavor type.**

Our Stabiprime MFD range consists of carefully selected hydrocolloids for a rich and extra creamy mouthfeel – with no sedimentation.

flexible stabilising systemrange

beverage filling at high temperatures

low development costs

safe and simple manufacture

**hydrosol**

THE STABILISER PEOPLE

Telephone + 49 4102 202-003  
info@hydrosol.de, www.hydrosol.de

# High-tech for the high-care sector

## New machine for evacuating, gassing and seaming infant formula products



**O**ptima Consumer has developed a solution concept for fully automatic evacuation, gassing and seaming of infant formula containers.

OPTIMA EGS is the name of the innovative machine concept that makes processes safer and more efficient. The new development is the result of a detailed market study and takes into account the increased demands for production safety and product quality in the infant formula industry.

For sensitive products such as infant formula, absolutely safe manufacturing processes are required. Optima Consumer has taken the increased awareness of product safety as an opportunity to carry out a detailed product market study. The market requirements determined a new machine concept: the OPTIMA EGS, a machine for fully automatic evacuation, gassing and seaming of infant formula products.

### Focus on safety, production and resource efficiency

"The OPTIMA FS filling machine and the OPTIMA EGS enable us to offer infant formula production lines from a single source," says Christoph Held, Managing Director of OPTIMA consumer GmbH. "The OPTIMA EGS is our answer to the current demands of the market," Held adds. During development, the company focused on maximum production reliability, resulting in high product quality and resource conservation.

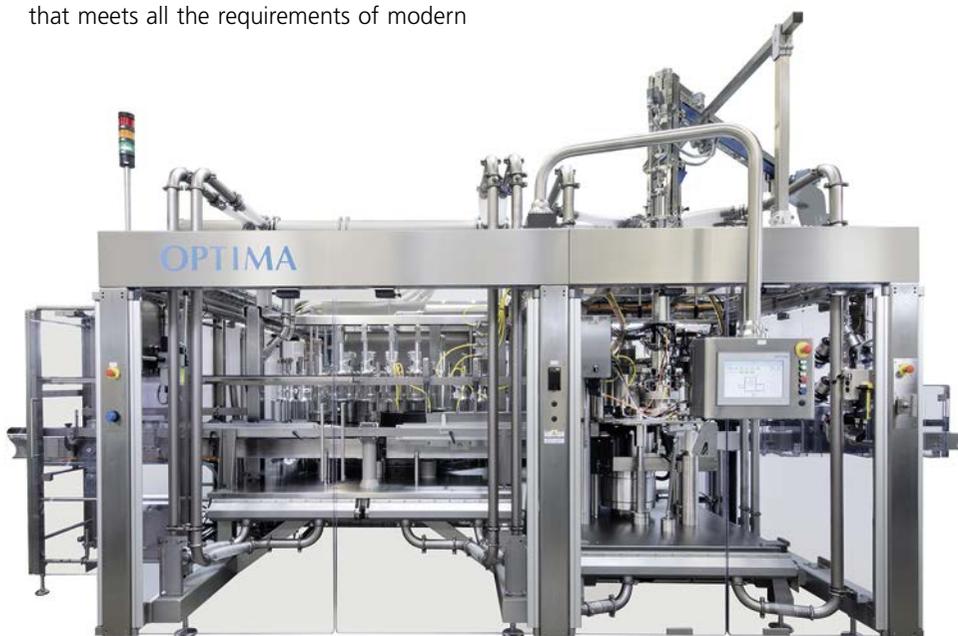
### First OPTIMA EGS at Elb-Milch successfully in production

At Milchwerke Mittelbe, also known as Elb-Milch, the first OPTIMA EGS was commissioned in mid-2019. "The OPTIMA EGS is an optimally tuned system that combines high speed with maximum safety and quality," says Uwe Bedau, Managing Director of Elb-Milch. The company is part of the Krüger Group and has been producing dry milk products in Stendal, Germany, since 1991. "The residual oxygen levels are officially below 1 percent and thus in a range that meets all the requirements of modern

infant nutrition. In the reality of production, the values are usually even far below that," says Bedau.

### Machine footprint reduced by more than 40 percent

The compact design should also be emphasised, because the total cost of ownership is an important basis for decision-making when investing in new machines and lines. "All functions – evacuation, gassing and seaming – are accommodated in a small



**The OPTIMA EGS is particularly characterised by its small footprint which optimises the total cost of ownership. (Source: Optima)**



The OPTIMA FS (left) and the OPTIMA EGS (right) – the centerpiece of every infant formula production line. (Source: Optima)

space," adds Bedau. This effectively minimises the operating costs for the cleanroom. Compared to conventional post-gassing systems, the space required has been reduced by more than 40 percent. The OPTIMA EGS also harmonises ideally with the high speed of the OPTIMA FS filler. "These points and Optima's commitment prompted us to purchase the OPTIMA EGS after the pilot phase," explains Bedau.

### Track and trace of all relevant process parameters

In addition to the small footprint, users benefit from a clear traceability of all containers. With the OPTIMA EGS, it is possible to assign important production data to each container clearly and comprehensibly throughout the processing steps. This also includes the documentation of all process parameters, such as the vacuum levels for achieving the required residual oxygen values of each individual can at all process steps. This is possible because

each can is evacuated, gassed and sealed individually. The production data can be stored using the line management system developed by Optima and important key figures are clearly displayed. In addition, entire production lines can be networked with machines from different manufacturers, thus optimising the overall line efficiency in a targeted manner.

In combination with software tools, for example for predictive maintenance, which increase machine availability, Optima Smart Services make production processes even safer and more efficient.

### Patented function cover protects against contamination

In the past, foreign bodies in the product led to recall from the market. Protecting the unsealed can is therefore a must. This requirement is met with the patented functional lid. Cans containing product are not transported open, but are closed with a functional lid during evacuation and gassing. The complex ad-



The functional lids ensure maximum production reliability. (Source: Optima)

ditional function of clinching is no longer necessary. This reduces the risk of imploding cans.

### Innovative evacuation method reduces the residual oxygen content

Sophisticated products, some with innovative ingredients, require increased product protection. Focus is on reduced residual oxygen levels. An evacuation process specially developed for infant formula meets this requirement. Without valves, the product is "brought to the boil" in the process using different pressure levels and the oxygen bound in the product is released. Depending on the product, a residual oxygen content of 0.5 percent is achieved at an output of up to 250 cans per minute.

Optima Consumer's development team is already working on further key systems to provide even more safety and efficiency in the infant formula production. A 100% non-destructive leakage check is Optima Consumer's next goal on the development roadmap.

we design and engineer food processing facilities



**foodfab**  
consultants for food production plants

**ATP** architects  
engineers

[www.foodfab.eu](http://www.foodfab.eu)  
[www.atp.ag](http://www.atp.ag)



# Cell-based vs. plant-based

## What is the future of the protein industry?

Looking at cell-based and plant-based protein, FoodTech Invest Days took a closer look on 28 January onto the development of alternatives to meat and dairy. The online event organised by Hungry Ventures and dfv Conference Group hosted an abundance of topics highlighting the fundamental changes that the food industry and food retail is undergoing.

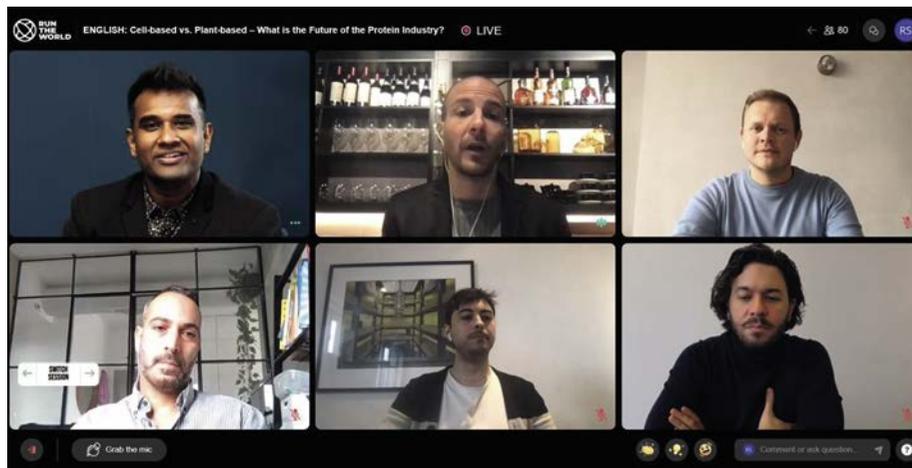
While plant-based alternatives aim to provide the same nutritional value as animal based food, cell-based protein offer a 100% equivalent to animal-derived products. By combining cell-based protein and conventional and/or plant-based stuff, different sources of protein can be used and more nutritious products can be manufactured in a sustainable way for the growing world population.

Global investment in start-ups in the area of cell and plant based protein totaled \$1.5bn in 2020. Singapore and Israel are the two major hubs worldwide where most of the actual work is done in developing these alternative proteins. Israel alone counts about 40 start-ups in the alternative protein field, the investment has grown from \$44m in 2019 to \$123m in 2020. As it is, it will be these places that are open for innovation in food tech that will attract the best scientists and experts and finally gain the biggest pioneer profit. It will also be these markets that will be first adopters of alternatively made protein.

Currently, there are three crucial trends in the food industry. No. 1 is food security, no. 2 is functional ingredients that promote human health and thirdly there is sustainability. Consumers, at least the younger generation, will no more accept that food represents 26% of global GHG emissions.

### Food tech evolution

Now that plant-based proteins have opened the way, a boom for cell and other based



The online event FoodTech Invest Days took a look into the alternative protein development at the end of January. On the screenshot (upper row from left) event moderator Dan Ram, Aviv Oren (GFI) and Frank Cordesmeier (Good Seed Ventures). Lower row from left: Ido Savir (Super Meat), Raffael Wohlgensinger (Legendairy Food) and Mazen Rizk (Mushlabs)

protein is just a logical consequence. Fermentation and cell culture are at the forefront in the technical development of alternative protein, but there is also insects, mushrooms, algae and plants that will more and more be used to feed a protein-hungry world population. Public opinion is moving finally away from the conception that technology is bad thing for food manufacturing. Generally, youngsters have a much higher acceptance for food technology. And this shift of perception takes place even before alternative proteins actually have hit the market. It will be most important to inform consumers that there ain't no Frankensteins in the labs and that the products that the start-ups are developing are not out of the ordinary. They are rather the same products as nature supplies, only the production process is different. One may name this a food tech evolution.

But there is still the big question as to when alternative proteins might become comparable in price with conventional protein. Ido Savir, Super Meat, is positive that this important fact will be given within 5 to 7

years from now. Hybrid products, made from conventional and alternative protein, might become available at attractive prices within 2 to 3 years. A very limited number of first products can be expected to come to the markets already this year.

### Farmers' role

So, will farmers skills in protein production no more needed in Future? Aviv Oren, GFI, is contrary. He says that the cell cultures and bacteria in fermenters need feed. This is what agriculture will still have to grow. And of course, on a planet with 10 billion people by 2050 there will be plenty of room for both, modern and traditional production. People simply will no more eat meat six times a week but maybe only once a week, filling the gap with some plant, cell or fermentation-derived produce. Asis seems, only a cooperation of conventional farming and modern food tech will be able to feed 10 billion mouths.

Farmers in Israel are not all contra alternative protein, reports Oren. A number of them has just placed investments in start-ups just to be on the safe side ...

## FILTECH: New date in March 2022 Innovation Guide offers online service

The next FILTECH will be held from March 8 to 10, 2022. Until the world's leading platform for the filtration and separation of all types of media can open its doors again at the exhibition center in Cologne, the FILTECH online service will help suppliers to connect with everyone interested in their products and services.

The online stand booking system (<https://filtech.de/exhibition/book-a-stand/>) is open again for any new exhibitors interested in taking part. In 2022, the FILTECH will be held for the first time in the modern flagship halls 7 and 8 of the exhibition grounds in Cologne.

### Innovation Guide for filtration and separation

The Innovation Guide ([filtech.de/exhibition/innovation-guide](https://filtech.de/exhibition/innovation-guide)) enables prospective buyers and users to find a wide range of products and services online that are highly relevant for tackling every type of filtration challenge. The website also provides an overview of the entire range of products, services and talks that the participating companies and institutes intend to offer. FILTECH

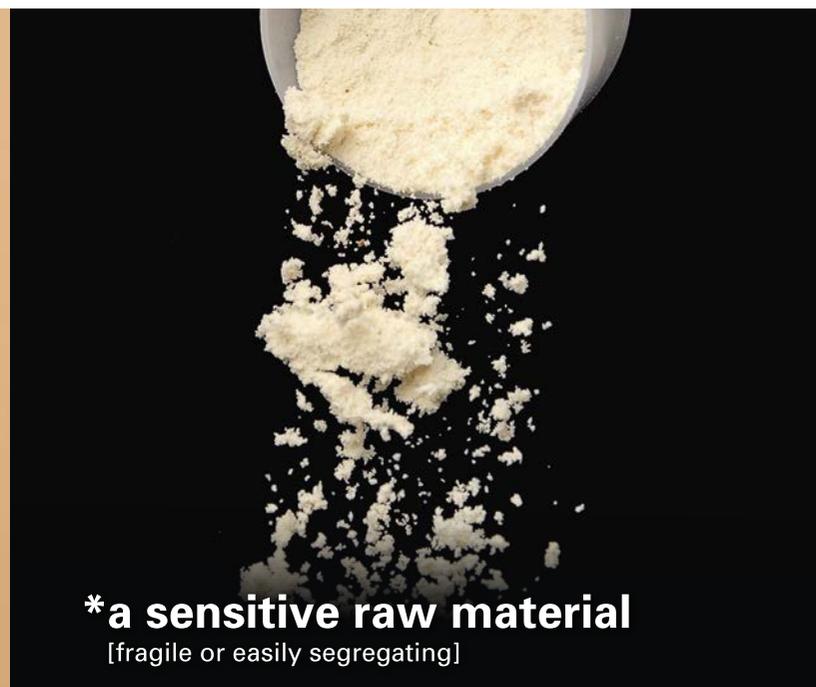


FILTECH has been postponed to 2022 – the gap is bridged by a new online service (photo: FILTECH)

is therefore also providing virtual support by highlighting suppliers whose products and services offer effective ways of minimizing the risk of infection as well as highly efficient filtration and separation technology solutions for production scenarios.



# 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 ... ]

**AZO.**

[www.azo.com](http://www.azo.com)

# Piab /CAMA Group

## Automatic high-speed handling of cheese slice pouches of different formats

**W**ith the use of piGRIP suction cups, certified for food contact, and COAX vacuum generators, both Piab products, CAMA Group has created a cutting-edge packaging system that allows to handle 280 pouches of cheese slices per minute.

In a complete line for the packaging of cheese slice pouches, precisely on the loading machine, CAMA Group has installed grippers made of plastic material using Piab's piGRIP FDA approved suction cups together with COAX vacuum generators, Piab's highly efficient vacuum ejector.

The process is characterized by a very high number of pouch formats to be managed: ten product formats and about fifteen box formats, with many possible combinations. Leading up to more than 100 formats in total. In case of multiple formats (box plus pouches) weights of up to 1 kg can compile.

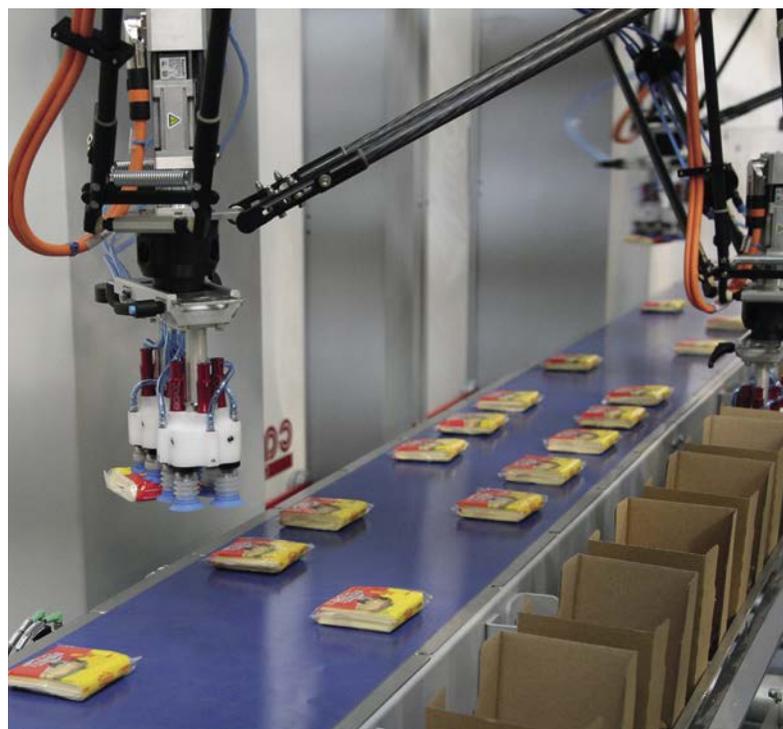
The first requirement was to minimize the replacement of the grippers resulting from format changes. CAMA Group has thereby developed two types of grippers, with which the company is able to handle all formats of cheese slices: one with 2 and one with 3 gripping units. Each unit consists of 4 suction cups and 4 vacuum generators and grips one pouch of cheese slices at a time.

Another critical parameter of the process is the high speed with the consequent risk of damaging the flow packs, resulting in the possible creation of undesired wrinkles on the product.

### FDA-compliance

"We were looking for FDA-compliant suction cups – which not all suppliers are able to deliver – that would allow us to handle different formats, at high process speeds, without damaging the products," explains Massimo Monguzzi, CAMA's R&D Manager, responsible for the project. "With Piab we went straight to the point. We carried out feasibility tests with the help of the Italian branch's technicians and we developed a gripping solution that is characterized by a great flexibility. Since each suction cup is coupled with a single vacuum generator, we can choose to operate only some of the four suction cups of each gripper. All this results in important savings in the consumption of compressed air and

electricity. Before choosing Piab's vacuum generators, we also tested some types of vacuum blowers. This technology failed because vacuum blowers have a response time that is too long, difficult in regulating vacuum and finally can lead to damages to the products, with consequent high production waste. We therefore focused on Piab's COAX technology, which allows the vacuum generator to be installed close to the gripping point, solving all our problems. With regards to the suction cups, we opted for the use of four suction cups and decided to deploy Piab's piGRIP, with a diameter of 34 mm, at every location of the gripper. The reason is that this solution offers a solid grip, but leaves no marks on the pouches, and hence turned out to be the optimal solution for our process."



Piab's vacuum generation technology COAX minimizes energy consumption, while offering a secure and fast grip. (photo: Piab)



**CAMA Group's packaging line with grippers using piGRIP suction cups and COAX vacuum generators (photo: Piab)**

### Unique configurable suction cup concept

The piGRIP is a unique configurable suction cup concept with individually optimized parts for gripping, lifting and height compensation. Packaging small bags in cartons is the specialty of Piab's piGRIP suction cups that have specifically soft lips to hold on to the changing surface of a bag. They allow secure and quick moves to enable fast automated processes.

Piab's vacuum generation technology COAX minimizes energy consumption, while offering a secure and fast grip due to its high initial vacuum flow. COAX ejectors are up to twice as fast as other ejectors and deliver three times more flow than a conventional vacuum ejector with identical air consumption. The pump unit can deliver high performance even with low or fluctuating supply pressure. This was proven in independent comparison tests at the Fraunhofer Institute for Machine Tools and Forming Technology IWU in Dresden. These tests have shown that the Piab ejectors require significantly lower compressed air to achieve the same output compared to ejectors from other manufacturers. Accordingly, their use reduces the cost of providing compressed air and thus the total cost of production.

Founded in 1981, CAMA's core business is the engineering and the production of complete high technology secondary packaging systems for major multinational groups both in the food and non-food markets. Digitization is part of the company's DNA. CAMA Group produces smart and responsive systems, ready for data analysis, which allow the realisation of virtual Factory Acceptance Tests through video conference call (Live FAT).

## EU Circular Economy Initiative Krones

Krones, as a high-tech company, has signed up to the European Circular Economy Stakeholder Platform. The supplier promises a substantial contribution towards turning the vision of a closed-loop recycling economy into hands-on reality. Krones entered into a self-imposed commitment to the following eight targets:

rPET compatibility, plastic-free secondary packaging, support for recyclable packaging design, changing over from linear production to circular economy, permanently attached closures, sustainable labelling, investing in recycling, beyond PET packaging (packaging-free solutions, paper bottle).

High-quality plastic materials like PET can be recycled almost endlessly (photo: Krones)



### SIDEL EVODECO LABELLING SOLUTION

**DESIGNED FOR  
TOTAL FLEXIBILITY  
OPTIMISED FOR  
UNMATCHED PERFORMANCE**



The EvoDECO Multi offers customers total flexibility to deploy different labelling technologies and switch among them, fulfilling any need – all in one machine. You can easily change from high-performance cold glue, Pressure Sensitive Labels, or roll-fed, to hot-glue modules and quickly ramp-up your production. It delivers high efficiency and low Total Cost of Ownership with high output.

The new solution ensures 30% faster changeover time and requires 40% less maintenance time compared to the previous generation, while reducing electrical consumption by 40%.

**Performance  
through  
Understanding**

**Sidel**

# Stronger together

## How DSM is helping dairy brands innovate and differentiate

**The acquisition of CSK (photo: factory in Leeuwarden) has enabled DSM to extend its product portfolio and bring new products to market**



**Andre de Haan, Business Director, Cheese at DSM Food Specialties (formerly Commercial Director at CSK): Although CSK as a separate entity has ceased, its values, expertise and commitment to customers remain in DSM's offering**



**Nicolas Touillon, Business Director, Fresh Dairy DSM Food Specialties: A key driver behind the acquisition of CSK was to allow DSM to better serve customers' needs in an increasingly fast-paced and competitive dairy culture market**

One year after DSM announced its acquisition of specialty dairy solutions provider Royal CSK Food Enrichment C.V. ("CSK"),

Andre de Haan, Business Director, Cheese (former Commercial Director at CSK) and Nicolas Touillon, Business Director, Fresh Dairy at DSM Food Specialties share an update on the behind-the-scenes progress of the integration. Here, they outline the key milestone moments, important changes for DSM and CSK customers and the dairy industry, as well as their thoughts on the future for the newly aligned business.

**IDM:** What progress has been made since the official announcement? Where are we now?

**de Haan:** It has been an exciting and busy year since the announcement; we worked tirelessly to ensure a seamless integration process between DSM and CSK, and to bring our combined, broader portfolio of products, ingredients and solutions to our dairy customers worldwide. We also explored how we can continue to take DSM's offering to the next level for our customers – from an R&D perspective, for example, the team has prioritized further strengthening our market-leading cultures business, focusing on enabling technologies and culture development to support ongoing innovation together with and in support of customers.

**IDM:** What were the key drivers behind the integration?

**Touillon:** We know that, for our customers, having a partner that will help them innovate, differentiate and bring compelling dairy products to consumers across the globe is more important than ever, and elevating our ability to meet these needs was, and remains, a significant driver behind the acquisition. Bringing CSK's strengths and deep understanding, particularly in Europe, into the DSM family allows us to be an even stronger partner for customers worldwide, offering solutions that enable sustainable and efficient production, speed-to-market and – above all – fantastic taste and texture, to help them grow their brands.

Another aspect that will bring significant benefits to our customers is the expansion of DSM's global manufacturing network, to include the state-of-the-art dairy application center in Wageningen (the Netherlands) and the high-tech fermentation facility in Leeuwarden. Besides the additional production capacity in Europe – a key strategic region for many of our customers – the Wageningen R&D hub, alongside DSM's Rosalind Franklin Biotech Center in Delft, will allow us to further strengthen our R&D capabilities and unlock unique innovation potential.



**IDM:** What are DSM and CSK's objectives, now the integration is complete?

**Touillon:** We are always exploring new ways to leverage our combined R&D and innovation power to offer added value for our customers, such as providing a range of taste differentiation options for companies of all sizes. We aim to continually develop and expand our product range to meet changing customer requirements, as well as provide high-quality technical support globally.

The acquisition of CSK has, for instance, already enabled us to extend our product offering by adding the twarog cultures to our portfolio. Our newly aligned Fresh Dairy segment is also a fantastic opportunity to showcase our uniquely broad solutions offering, which leverages DSM's full range of nutritional ingredients and hydrocolloid solutions alongside our cultures, enzymes and shelf-life solutions to provide producers with the tools they need to deliver optimal texture and taste, health and nutrition, stability and clean-label credentials.

Similarly, we aim to further expand our capabilities in the wider cheese sector, by helping our customers reach their goals via (COVID-proof) on-site support and technical advice, as well as providing ingredient solutions that deliver on taste, texture, protection and preservation. Our customers are looking to grow their offerings in the Continental, Cheddar and Mozzarella cheese spaces, to name just a few, where we are well-placed to support them with ingredients and insights. This is further complimented by our

offering in other cheese applications, comprising adjuncts, cultures, coagulants and Dairy Safe bio-protection culture ranges. We also understand that guaranteeing secured supply and efficiency in our customers' production process is key – and we are now able to boost this capability further.

**IDM:** What can you offer your customers now to complement your existing portfolio?

**de Haan:** Combining expertise, portfolios and experience – as well as a shared Dutch heritage – will be a significant benefit to both customers and the dairy industry now that we are operating as one company. Today, thanks to our extensive application expertise DSM can support businesses no matter their size or objective – whether they are looking for more traditional or unique options. Already a leader in acidification (fermentation), the acquisition of CSK will enable DSM to become a leader in taste differentiation, and customers will be able to leverage DSM's experience as a solutions provider to innovate and get new, leading products to market quickly, with support from start to finish.

DSM customers can now also benefit from our combined, broader portfolio – this includes the addition of the FlavorWheel range of adjunct cultures, enabling producers to create a unique, distinguishing flavor profile for cheeses, providing further application potential. We are also expanding DSM's product offering to include Ceska Star bulk starter cultures for traditional Gouda-type cheese, comprising a wide range of gas- and non-gas-forming aromatic starter cultures. Plus, incorporating Dairy Safe cultures into the DSM portfolio will enable us to better support and tap into the growing interest in bio-protection in the fresh dairy space. Designed to avoid defects in ripened cheese, like late blowing defects, without the use of preservatives or additives, Dairy Safe is a label-friendly range of direct vat inoculate (DVI) cultures designed to address concerns around spoilage.

Meanwhile, DSM's capabilities in microbial protection have also been further boosted by the addition of the Ceska Coat cheese coating – complementing DSM's natamycin-based Delvo Coat solution to offer a portfolio that is backed by more than 50 years' experience in cheese coating. This combined offering enables us to provide customers with superior technical performance for every type of coated cheese, from sliceability through to application performance, as well as solid

microbial protection against yeast and molds over ripening time and shelf life.

**IDM:** Is it important to preserve the CSK heritage? Why?

**de Haan:** Although CSK as a separate entity has ceased, its values, expertise and commitment to customers remain in DSM's offering. It was important to us that the company's specialized portfolio of bacterial cultures and extensive knowledge of the Dutch cheese industry, which complements DSM's growing portfolio well, would be protected – offering legacy CSK customers peace of mind throughout the integration process and beyond. Preserving this strong Dutch heritage, company values and passion for dairy continue to be a priority for DSM as we move forward through the integration.

**IDM:** What can the dairy industry expect from DSM and CSK in the future?

**Touillon:** DSM will continue to bring exciting, new dairy creations to the table, through a broad portfolio supported by the right expertise. We are also expecting to increase production capacity for our customers significantly, thanks to our expanded manufacturing footprint, which will enable us to support our partners – both DSM and legacy CSK customers – better than ever before. Ultimately, we aim to lead the way in meeting the diverse needs of consumers in the fermented milk products, cheese and fresh dairy spaces, so watch this space for more exciting news! (All photos: DSM)



**Preserving the strong Dutch cheese heritage, company values and passion for dairy continue to be a priority for DSM as it moves forward through the integration of CSK**

# Successful model: “ultraclean (UC) hygiene design”

The up-to-date sterilisation system  
for maximum hygiene



**R**eliably high product safety and observance of the hygienic rules regulated by law are one of the most important issues of Grunwald in terms of the development of new machines. We successfully implemented this in the past few years with various new machine concepts by using the latest technology and inno-

vative ideas. The further development of the rotary-type and inline bucket fillers has especially focused on the compliance with the maximum hygiene levels, the health of the operators as well as the reduction of the operational costs. In addition, it had to be considered that trade and consumers increasingly demand extremely long shelf lives for the products from the dairy and food industry – even for highly sensitive products. These long shelf lives can only be achieved if the products are filled at a guaranteed maximum hygiene level and if techniques are used which reliably sterilise the surfaces of food packages (cups, buckets, lids and film).

So far, the sterilisation with conventional, chemical methods such as hydrogen peroxide was very reliable and widely used. Even if the general trend has been towards a heavy reduction of cleaning and sterilisation agents for several years this still means that chemicals are used for the sterilisation of packing materials. The market requirements for natural products, the avoidance of chemical additives and the necessity to protect the environment inevitably leads to putting into question this sterilisation system.

Since at least the beginning of the meanwhile successful actions for damages in the Monsanto proceedings in the USA, many people have become aware that the production processes of the food industry also bears many risks. It is an open secret that the machine operators are exposed to a significant health risk as long as peroxide is used for the disinfection of packaging material. This is especially true for workers at the older cup and bucket filling machines. The involuntarily bleached hair and eyebrows of the workers operating these machines often show the impacts of peroxide.

But what is going to happen if the first doctor attests the health risks of peroxide? If the work council will demand to in-



**Fully-automatic bucket filling and closing machine  
GRUNWALD-ROTARY XXL, 1- to 2-lane in ultraclean  
design for 1, 5 and 10 litre buckets (photo: Grunwald)**



**For dairy products: fully-automatic cup filling and closing machine GRUNWALD-FOODLINER 20.000 UC in 10-lane design with pulsed light high-performance UV(C) sterilisation system and with integrated tray packer (photo: Grunwald)**

invest in other technologies in order to avoid the often enormous contamination? Isn't it high time to realise that disinfection with peroxide is a dead-end technology and that it is time to stop it and choose a healthy, acceptable alternative for ultramodern and economic disinfection proceedings?

### UV(C) sterilisation is the alternative

With the hygienic solution developed, Grunwald set new standards in terms of hygiene several years ago and has already offered an alternative for the sterilisation of all packaging materials which is completely safe to use and does not represent any health threat. The pulsed light high-performance UV(C) sterilisation used verifiably guarantees a sterilisation rate of at least LOG 4 for cups, buckets, lids and seal lids.

The sterilisation system works without the use of peroxide – guaranteed and reliable. It has been demonstrably tested by several, independent German institutes. They confirmed that “it works completely without chemicals and it does not have any impact on the environment and staff”. Thus also the prob-



**View on the UV(C) sterilisation on a rotary-type bucket filler GRUNWALD-ROTARY XXL (photo: Grunwald)**



**Double pulsed light high-performance UV(C) cup sterilisation with guaranteed sterilisation rate of at least LOG4 (photo: Grunwald)**

lem with the overdosage of chemicals has been solved when using pulsed light high-performance UV(C) sterilisation! Another advantage is that this process can be used for all standard cups and buckets of the food industry.

### The new machine generation

Another milestone of the development of filling machines is the bucket filler GRUNWALD FLEXLINER XL UC. In the design of this inline bucket filler, the pulsed light high-performance UV(C) sterilisation system, which has already been well-proven on Grunwald cup fillers, was further developed. The result was a patented procedure which also guarantees a sterilisation rate of at least LOG 4 for buckets (up to 10 litres). This ultraclean version as well as UV(C) packaging material sterilisation is also available for rotary-type bucket fillers

So far this ultramodern and efficient sterilisation system was only considered to be a supplement to the peroxide sterilisation. Now it is time for rethinking. In the current corona pandemic the UV(C) technology was also recognised to be effective for other sectors and is now used as an effective, disinfecting method for keeping rooms clean and for rapid disinfection of the air (e.g. in schools and restaurants) for the protection and thus against the risk of infection with Covid 19 viruses.

Both with customers who have successfully been using this innovation for a long time GRUNWALD are convinced that the pulsed light high-performance UV(C) sterilisation is the trend-setting technology of the future. It is a safe alternative to the use of peroxide and represents no health hazard. Today this pulsed light high-performance UV(C) sterilisation system is used as a technical standard for all cup and bucket filling systems when a higher hygiene level is required.

[www.grunwald-wangen.de](http://www.grunwald-wangen.de)

# Lockdown priorities create dairy opportunities

Cleaner labels, healthier choices and comforting indulgence – the yogurt and dessert categories are primed to satisfy individual consumer needs through the pandemic and beyond

**A** number of dairy trends have spiraled into the foreground since the COVID-19 pandemic forced the first lockdowns in the spring of 2020. Spanning everything from the healthiest yogurts to the most indulgent desserts, they reflect the rapid shift in consumer priorities from the first to the second wave – and a swell of opportunities for dairy manufacturers that catch the tide.

One thing remains certain despite the fluctuation in consumer demands. There will always be room for dairy products at each end of the health and indulgence spectrum, says Michelle Nguyen, regional dairy marketing manager at IFF.

“With the first wave lockdown, we saw people spending more time at home, making homemade yogurts with a focus on health, less sugar and natural ingredients.

“The second wave brought another reality as people juggled with the multiple responsibilities of working from home while taking care of children and elderly family members. This renewed the focus on convenient, on-the-go yogurt snacks and personalized nutrition. At the same time, the uncertainty and stress of the pandemic led to an increased demand for comfort food in the form of indulgent dairy desserts.”

Although the move towards more personalized nutrition and natural ingre-

dients has been underway for some time, both trends have become increasingly pronounced over the past year. When it comes to healthy indulgence, Lightspeed/Mintel research has found that two out of five adults struggle to find free-from desserts that taste good. Euromonitor also notes that, despite the rising interest in clean labels, all-natural desserts currently only account for less than 2% of dessert

launches in Europe, the Middle East and Africa (EMEA).

So, for manufacturers that can combine targeted nutrition, a cleaner, more natural label and uncompromised taste and texture, the potential for success seems high.

## Perceptions of healthy yogurt

As a supplier of ingredient solutions to the dairy industry, IFF conducted its own survey



**A basic yogurt recipe is the most favorable starting point for developing clean-label dairy products (photo: AdobeStock)**



**Kirsten Lauridsen, principal application specialist at IFF: The recent survey shows that consumers largely agree on the ingredients they see as healthy, highlighting protein, fiber and probiotics (photo: IFF)**

in Germany, France and Russia to investigate how specific consumer groups – millennials, families and seniors – perceive the yogurt category. The findings show that protein, fiber and probiotics are the ingredients consumers most often associate with natural nutritional benefits.

To gain deeper insights into actual preferences, IFF presented the survey respondents with a series of fermented dairy and plant-based product concepts – each one tailored to the anticipated needs and expectations of individual family members.



**Michelle Nguyen, regional dairy marketing manager at IFF: The pandemic led to an increased demand for comfort food in the form of indulgent dairy desserts (photo: IFF)**

“The concept that performed best across the board was a fermented plant-based snack developed for the family’s teenager which was seen to unite healthiness, environmental awareness and indulgence,” says Kirsten Lauridsen, principal application specialist at IFF. “The overall feedback to the concepts confirmed that personalized nutrition has strong prospects.”

### Defining clean label

The IFF survey shows that consumers largely agree on the ingredients they see as

healthy, highlighting protein, fiber and probiotics. But, when it comes to definitions of clean-label, opinions are more diverse, as Mintel reveals in a review of the dessert category across the EMEA region.

While clean-label product launches in Russia, the UK and Denmark continue to rely on a no additives/preservatives claim, Mintel points out that manufacturers in the Netherlands and Germany increasingly put a sustainability claim on product packaging. In France, consumers tend to equate clean-label with organic, and, in Spain and Italy, the most popular claim is allergen-free.

“In other words, perceptions of clean-label are complicated. Generally speaking, though, the shorter and simpler the ingredient list, the better the chances of satisfying a wide range of consumer expectations. This can drive premium pricing in some markets,” Nguyen adds.

### Uncompromised desserts

On the face of it, a basic yogurt recipe may seem the most favorable starting point for developing clean-label dairy products that meet consumer demands for health and indulgence. It is no secret, for example, that the right starter culture can restore full-bodied creaminess to a low-fat yogurt.

In the dairy dessert category, on the other hand, ‘better for you’ products with reduced fat and sugar have typically relied on tailored blends of emulsifiers and stabilizers for their rich taste and texture.

However, thanks to the latest developments in ingredient technology, new clean-label opportunities are now becoming available to manufacturers of dairy and plant-based desserts – drawing on kitchen-cupboard ingredients that consumers know well. Just as important, these solutions are being designed for manufacturers’ existing processes.

Natural functional blends like these are well timed to meet the expectations of consumers who have had plenty of time over the past year to reconsider their priorities. In the dessert category, the quest for healthy indulgence has usually been linked with compromise – sensory or nutritional. Manufacturers can today look forward to delivering the best of both worlds, topped off with a clean label.

Through well-aimed innovation, the dairy industry has renewed opportunities to capture the consumer’s heart. Ingredient technology is ready and available to cater for today’s personalized needs.



**In the dairy dessert category, ‘better for you’ products with reduced fat and sugar have typically relied on tailored blends of emulsifiers and stabilizers (photo: AdobeStock)**

Can filling capacities  
have been installed  
at SternMaid

# Full service, all from one source

Contract manufacturing:  
keeping pace with the times

**M**ore and more companies are outsourcing the manufacture, blending, filling and packaging of their products to specialized service providers. Product cycles are becoming shorter all the time, and circumstances like the corona crisis have shown that manufacturers sometimes have to react quickly to new market conditions and consumer needs. Changing buying habits, peaks in demand and lock-downs can lead to shortages in the supply chain and are just a few examples of the challenges companies may have to face. Cooperation with contract manufacturers allows them to respond quickly and efficiently to such developments and new trends in the market.



Processing products on the fluidized bed plant of SternMaid

## Focus on core business

Quite apart from that, the company placing the order cuts costs as well as saving time – especially in administration and preparatory work. There are no further costs for plant adjustments, training and personnel, no need for investments in operating supplies or the firm's own premises and plant. The customer can concentrate fully on its core business, for instance research & development or marketing and sales. In times when there is a shortage of skilled labour and temporary workers are hard to find, service providers can help to handle peak demand or safeguard the basis for a regular supply. So nowadays there is an ever-greater demand for experts who can offer an "all-round carefree package".

## The whole production chain, from raw materials to packaging

The contract manufacturer SternMaid specializes in the production, filling and packaging of food ingredients and supplements in powder form. On various blending lines, filling machines and a fluidized bed processor it manufactures premixes for the downstream food industry and finished products such as dietetic and whey drinks, protein preparations and dry beverage bases for the retail trade. The service chain extends from blending and processing through contract packaging to procurement of raw and packaging materials, warehousing and delivery. Even the development of new formulations or the enhancement of existing products can be arranged within the Stern-Wywiol group of companies. "Our customers decide individually which services they wish to make use of, depending on their needs," Commercial Director Mark Riemer explains. "Some only want to have bagged goods filled into FIBCs, for example, while other companies outsource the entire production chain and opt for an overall solution."

It makes sense to outsource processes if, for example, the company's own plant is working to capacity or if it simply lacks the necessary technical equipment or does not wish to invest in it. For instance, if a manufacturer of dietetic drinks receives an enquiry for a very large delivery but his own production capacity is exhausted, contract manufacturers can absorb such peaks.

As Mark Riemer says: "Outsourcing is an interesting option for smaller firms that are expanding but hesitate to make additional investments. For after all, plant of one's own binds capital, space and personnel. And there is no endless planning and construction phase if you engage a contract manufacturer. Larger companies, on the other hand, may want to reorganize their production processes and outsource only a part of them."

For well-known brand manufacturers, especially, it is becoming more and more important to have a second-supplier strategy to safeguard their own ability to deliver in the event of large orders or as a buffer against crises. But enhanced quality or additional know-how may be arguments in favour of outsourcing to contract manufacturers, too.

## Service providers as partners

The know-how of service providers like SternMaid is not restricted just to handling the products. They know the market,

can identify the latest trends and give their customers comprehensive advice, for example on suitable packaging. In this way, customers benefit from their partner's long years of expertise.

One current example is ecological aspects such as sustainability and recyclability that are becoming more and more important to many customers. At SternMaid, customers can have their products filled into spiral-wound cardboard cans with an aluminium-free interior lamination. A sealing machine for cardboard can bottoms is also available, making it possible to replace the traditional tinplate bottom and thus improving recyclability.

"Customers' expectations concerning the range of services offered by a contract manufacturer have increased enormously over the past few years," says Mark Riemer. Contract production now includes a diversity of services from mechanical packaging through making up to quality assurance, warehousing, logistics and procurement of raw materials, that go far beyond mere production processes like blending, granulating or microencapsulation. That is why we continuously invest in new plant and machinery in order to respond even more flexibly to customers' needs and the demands of the market."

**SternMaid GmbH & Co. KG**

[www.sternmaid.de](http://www.sternmaid.de)

## No.1 specialist in reconditioned dairy machines



**LEKKER  
KERKER**  
- SINCE 1996 -

Milk
Yogurt
Butter
Margarine
Processed cheese
Cheese



dairy & food  
equipment



- 2.000 machines  
in stock
- Warranty
- Fast delivery times
- Low investment
- Complete projects

+31(0)348-558080  
info@lekkerkerker.nl  
[www.lekkerkerker.nl](http://www.lekkerkerker.nl)





## Global IMF market continues growth towards 2025

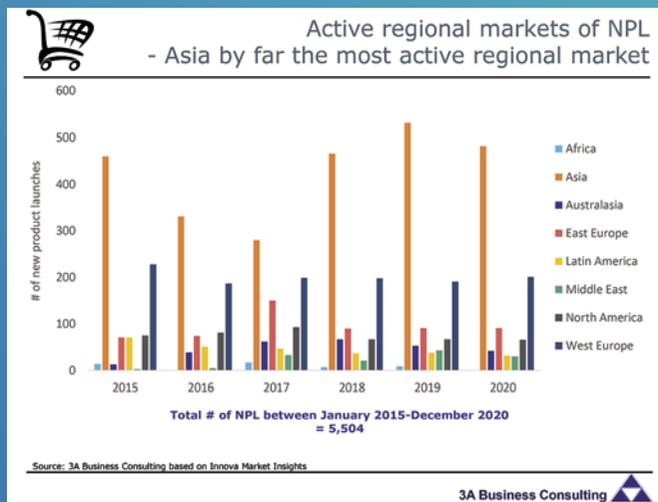
### 3A Business Consulting

3A Business Consulting has published a brand new analysis of the global infant formula (IMF) market:

The IMF market amounts to approx. USD 55 Bn and around 2.6 mio MT in 2020, growing approx. 5% in value annually from 2015 to 2020. Market value is expected to continue growing 5% annually to reach approx. USD 69 Bn and more than 2.77 mio MT by 2025. Asia is projected to drive growth in the global IMF market, accounting for 65% of value growth towards 2025. Asia is projected to drive growth in the global IMF market, accounting for 65% of value growth towards 2025.

The report contains abundance of information on regions, countries and ingredients as well as on the key players in the market.

More information: 3A Business Consulting, Marselis Boulevard 1, DK-8000 Aarhus C, Denmark, phone: **+45 70 21 00 98**, Web: [www.3abc.dk](http://www.3abc.dk)



## Safe conveying of instant milk powder granules

### Piab

Polmlek Raciaz, a Polish producer of various milk-based products faced a problem of breaking instant milk powder granules during the transfer within its process. In Piab's piFLOW p vacuum conveyor they found the solution they were searching for. Equipped with an ejector with a high vacuum flow, they were able to adjust the speed to maintain the granules as planned.

Facing continuous quality problems during the transport of granules of instant milk within their process line, Polmlek Raciaz, a member of the Polmlek Group – Poland's largest 100% Polish-owned dairy company, needed to modernize their system. The blower, screw and rotary valved used for this process did not render the expected result and let to regular product damage and waste.

"Since we already have two Piab vacuum conveyors in use at other stations and considering our satisfaction with the service experienced so far by Piab's Polish entity, we decided to replace the old system by Piab's premium product, the piFLOW p vacuum conveyor," explains Bogdan Graczyk, Technical Manager at Polmlek Raciaz.

**Piab's piFLOW p conveys instant milk granules at Polmlek in Poland (photo: Piab)**



Tadeusz Fobke, responsible Product Sales Manager at Piab Poland adds: "to confirm that the vacuum conveying process would indeed improve the process and avoid damages of the granules, we ran test at our inhouse demo unit and established the necessary parameters to ensure a smooth process at Polmlek."

In addition to solving the initial problem with product quality, the deployment of Piab's piFLOW p vacuum conveyor also allowed to reduce the manpower required as the process needed less supervision. Furthermore, due to reduced machine downtimes and maintenance requirements, the production output could also be increased.

Piab's piFLOW p conveyors for powders and bulk solids are perfectly matched to the high standards of operational safety and hygiene in the food and pharmaceutical industries. They are made of electropolished stainless steel and materials that comply with US FDA and EU 1935/2004 regulations. As a conveying line, a suction hose made of PU is used. An internal steel spiral helps to minimize the electrostatic charge of the product or diverts it to equipotential bonding. The filter in the upper part of the conveyor is cleaned with a filter shock after each conveying cycle. The device control is located in a separate control cabinet. The piFLOW p conveyors are ATEX Dust and Gas certified. Typical applications are powder and granules transfer, form-fill-seal machines, big bag loading and unloading, drum/bag filling and emptying, mill/sieve/mixer/blender filling, tablet/fragile products transfer, applications in explosive atmosphere, hygienic applications or places where space is at a premium.

# Learn from the expert!

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

Further information and order:  
[www.cheese-technology.com](http://www.cheese-technology.com)

## THE BOOK HAS 9 CHAPTERS:

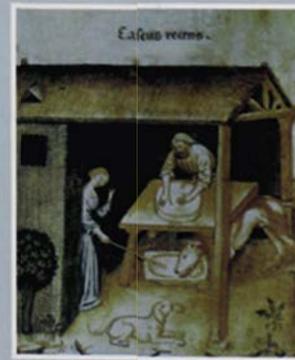
General overview, divided into definition, processing scheme, history, significance of the various groups of cheese concerning nutrition Raw material and additives for the production for various groups of cheese Varieties of the respective groups of cheese as well as their manufacturing processes and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

CHEESE TECHNOLOGY

by Josef Kammerlehner, 930 pages, ISBN: 978-3-00-021038-9, €109 plus shipping

Josef Kammerlehner

# Cheese Technology



2009

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

# “Ceci n’est pas un fromage”: protecting dairy terms means protecting consumers

‘Amendment 171’ stands as guardian of consumers’ quality expectations by ensuring clarity and fairness within the EU Single Market



Author: Alexander Anton, EDA Secretary General

**C**heese’, ‘milk’, ‘butter’ or ‘yogurt’ — essential products in our households. Delicious and nutritious, they belong to our dairy industry, one of the most important agricultural sectors and one that represents a vital element in the diets not only of Europeans, a key value creator for rural territories and an ally of sustainable development, in line with the European Green Deal objectives.

Whether it is Danish butter or Italian cheese, we know that EU milk and dairy products have a well-recognized quality excellence that comes from sophisticated, traditional, and distinctive creation processes. The EU dairy value chain ensures the highest food safety and excellence standards for our milk and dairy products that are displayed on the supermarket shelves.

At this latest stage of the value chain, when consumers pick up their products, it becomes crucial that information is conveyed in the clearest way possible to assure that their daily dietary choices are made accurately and in line with their needs and preferences. Consumers need to be able to recognize at first glance if the product they put into their shopping basket is or is not a dairy product, so that their quality expectations can be fully protected.

Milk and dairy products are unique and cannot be replaced by the so-called “plant-based alternatives” — they are simply different in terms of origin, ingredient composition and nu-

tritional value. The same way they cannot be replaced, they should not be imitated.

As our Codex Alimentarius based EU legislation stipulates, ‘milk’ is made by milking dairy animals. Dairy foods are natural sources of high-quality proteins, as well as essential vitamins such as B2, B12, and minerals including calcium, phosphorus, and iodine. Uniquely in milk, these nutrients all interact together to provide even greater nutritional and health benefits through the milk matrix, which is not found in any other products on the market. In comparison, even though plant-based beverages intend to imitate milk composition, they cannot provide the full nutritional benefits that come naturally from milk.

It is simply wrong to consider plant-based beverages as nutritionally equivalent to milk. For instance, they do not naturally contain calcium, it is added artificially. They tend to have a lower protein content and more importantly a lower quality of protein. Naturally occurring in milk, high quality protein and calcium are needed in sufficient amounts for normal and healthy growth, development, and maintenance of bones, along with many other benefits. A wide range of studies shows the health benefits of milk, while there is — to put it diplomatically — currently little scientific evidence supporting the health benefits of plant-based beverages.

Attempts by the plant-based sector to take advantage of the highly reputed dairy industry, to hijack our dairy terms and

to blur the lines between milk and dairy and plant-based products implies a threat to consumers' capability to make properly informed decisions that directly influence their diets. Such attempts have prompted a heated debate around the so-called 'Amendment 171'.

### What is the 'Amendment 171' discussion all about?

First, it is important to remember that the already-existing legislative framework guarantees an EU-wide protection of dairy terms. Back in June 2017, the European Court of Justice concluded that the terms milk, whey, cream, butter, buttermilk, cheese, and yogurt shall not be used to designate any plant-based product even if a description indicating their non-dairy nature is added.

Therefore, such terms are protected by EU law against usurpation and misuse by non-dairy products. As a further step towards clarification, 'Amendment 171' comes onto the scene with the aim of limiting the "imitation or evocation" of dairy products by the plant-based sector. What do we get as a result? The respect to EU product definitions and marketing standards, the easiness of trade by setting common references and, last but not least, the protection of consumers from deception.

Every product in the market has its own characteristics and naming, defined by its components, nutritional value, and nature. This, of course, should be reflected in their communications and advertisement. If plant-based products widely differ from milk and dairy in terms of origin, ingredient composition and nutritional values, why would they use dairy terms at all? Doing so does not only challenge the existing EU rules, but also threatens consumers' capacity to choose consciously during their shopping rush.

However, opposing the "imitation or evocation" of dairy products by plant-based drinks is not the same as opposing plant-based drinks themselves. We are not at war against the plant-based sector. All we ask for is an effort, with the support of EU law, to foster fair competition and common sense in the internal market. A plant-based spreadable fat is a margarine and not a 'veggie butter'.

Plant-based alternatives have their place on the shelves and in the market. However, the first requirement of co-existence is respect, respect to our dairy products and their denominations, but also to the marketing rules and to the integrity of consumers' choices.

With the amendment having been approved by the European Parliament back in October 2020, we at EDA firmly believe that fairness in the EU Single Market will prevail. We are confident that the trialogue negotiations between the European Parliament, the European Commission the EU Council and will turn the 'Amendment 171' into effective law.

The European lactosphere shall receive the recognition it deserves on behalf of the quality and taste of its products, of their unique blend of micro- and macronutrients, of their modern, but tradition-based production process, and the health and pleasure of all Europeans.

## From reduced sugar and fat to protein-rich improved stabilising systems

The Stabiprime MFD product range by Hydrodol can be used to make reduced-sugar milk mixed beverages for children, as well as many other attractive products. Stabiprime MFD consists of selected hydrocolloids. These stabilising systems are soluble in water as well as in sweet whey. They are easy to use, and enable economical production of milk mixed beverages. In addition to its proven Stabiprime MFDC system with carrageenan, Hydrosol also offers a gellan version, Stabiprime MFDG, which enables milk beverage filling even at high temperatures, up to 40°C. The main benefit of Stabiprime MFDC is that it lets manufacturers make stable products without high-pressure homogenisation. Thanks to its improved formulation, this stabilising system prevents sedimentation even in the most difficult cases, including with cocoa, where it keeps the particles in suspension.

Stabiprime stabilisers allow for manufacturing of high-quality milk drinks (photo: Hydrosol)



**Worldwide trading**

Tel: +31 348 460 009  
[sales@useddairyequipment.com](mailto:sales@useddairyequipment.com)  
[www.useddairyequipment.com](http://www.useddairyequipment.com)



**Used machines:**

### Separators, Bactofuges

Brands: Tetra Pak, Alfa Laval, GEA Westfalia

### Homogenizers

Brands: Tetra Alex, SPX APV, GEA Niro Soavi

### UHT & Sterile / Aseptic units

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

**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**  
 Manganstraat 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



**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  
 Web: www.treif.com

**Cheese cutting machines**



**Weber Maschinenbau GmbH**  
 Günther-Weber-Straße 3  
 35236 Breidenbach, Deutschland  
 Telefon: +49 (0) 6465-918-0  
 Telefax: +49 (0) 6465-918-1100  
 E-Mail: info@weberweb.com  
 Web: www.weberweb.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  
 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: Gropper)

Liquid milk: Climate-neutral and animal welfare  
Markets



(photo: Grunwald)

Two ultraclean filling machines installed  
Packaging



Utilising salts from RO permeate  
Technology/ IT



(photo: Vorotnikov)

Russian dairy industry is at a major pivot  
Markets

## 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

### Object Manager:

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

### Editor:

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

Nikolai Janz, Direct line: + 49 (0) 26 33/45 40-25, Email: nj@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 %)

General Manager of B&L MedienGesellschaft mbH & Co. KG: Harry Lietzenmayer

A photograph of two men in business attire (white shirts and ties) sitting at a desk in an office. They are both smiling and looking at a laptop screen. The man on the left is pointing at the screen with a pen. The background is a bright, out-of-focus office window.

# **IDM has a brand new website!**

Have a look at [international-dairy.com](http://international-dairy.com)