

DAIRY INDUSTRIES

international

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MARCH 2020

Dairy dessert options

Inside

Foodex preview

What the Middle East wants

The science of mozzarella

Interview: Pekka Pesonen of Copa-Cogeca

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Contents

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REGULARS

- 5 Editor's Comment
- 6 World News
- 14 New Product News
- 16 Functional Focus - Julian Mellentin
- 44 New Equipment
- 45 Diary
- 50 Working Day... Alex Fubini, Ice Cream Union

FEATURES

- 12 News Focus: Value Chains**
The interlinked challenges and opportunities across the value chain of the European dairy sector
- 18 Dairy Desserts**
How hybrid ideas are affecting the dairy desserts market
- 21 Middle East**
The Middle East dairy market is expanding and its consumers are more demanding
- 24 Interview: Pekka Pesonen**
Keeping dairy sustainable and profitable are industry's twin challenges, says Copa-Cogeca head Pekka Pesonen
- 27 Pumps**
Demands on the quality of products have grown steadily heavier over the years
- 28 Pumps**
Why cavitation needn't spell bubble trouble for your pump
- 31 Equipment Focus**
Oil contamination can be a problem from compressed air
- 32 Brexit**
UK dairy farmers have left the EU amidst tight profits
- 34 Inspection**
Inspection efficiency on the incline at Vepo Cheese's automated cheese factory
- 36 Cheese Science**
A study of mozzarella and vegan cheese-like preparations
- 40 Foodex 2020**
The UK show for processing, packaging and logistics is set to land at Birmingham NEC 30 March-1 April

CLASSIFIED

- 46 The Dairy Directory



Cover photo: Courtesy of Ice Cream Union



Middle East

See page 21



Foodex 2020

See page 40





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Doing it for the kids

The news that Unilever is changing its marketing plans towards children comes as no surprise. The focus of governments globally has been towards reducing sugar and helping to remove the pressure of pester power on adults, when it comes to children's products. By the end of 2020, every ice cream in the kids' range at Unilever will have no more than 110 calories and a maximum of 12g of sugar per portion. This will reassure parents and government regulators alike.

In this issue, we are looking at dairy desserts, on page 18. Suppliers such as CP Kelco are on the front line of manufacturers' expectations, and so often have an insight into what trends are becoming ever-larger in the market. Perhaps building a less sweet palate is desirable, but this does seem to be on a country by country basis. Over in the UK, the food and beverage industry has been removing sugar for years now. This affects how a consumer perceives things, I suspect.

This month, we have an interview with Pekka Pesonen, secretary general of Copa-Cogeca on page 24. His insights into keeping dairy both sustainable and profitable in the EU and UK are worth a read.

One region that has a sweet tooth and a leaning towards dairy is the Middle East. As it looks outwards, its traditional industry is growing, and for many consumers, adventure is key, gastronomically. Our coverage begins on page 21.

Suzanne Christiansen, Editor

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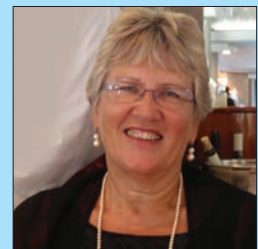
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IN BRIEF

DMK rebrands protein portfolio

Starting in the second half of 2020, DMK Group will distinguish its range of high-protein Milram products under a common umbrella concept. They now have a uniformly recognisable look and display the respective protein content. The concept will expand to other product groups as the year progresses.

UK prices stable

UK farmgate prices remained steady across 2019, despite a year of trade turmoil, exchange rate volatility and Brexit uncertainty, according to the UK Agricultural and Horticultural Development Board. Through 2019, the average monthly UK farmgate price (excluding bonuses) fluctuated between 27.84 ppl (€0.3346) and 29.85ppl (€0.3589), a range of just 2.02 pence. In comparison, farmgate prices had a range of between 4.8-6.3ppl in the three previous years.

British Cheese Awards open

The British Cheese Awards 2020 is now open for entries from cheese makers from across the UK. The awards take place on 28 May at The Royal Bath & West Show, Somerset, UK where 70 judges will score each cheese on presentation, texture, aroma, flavour and balance. Entries are invited from cheese makers by 10 April 2020.

Global cheese awards date set

The Global Cheese Awards and the Frome Cheese Show are being held on 10 September for judging in Frome, UK. This year's show will add some new classes for the smaller artisan producers. It will be open to the public on 12 September. For more information, please visit fromecheeseshow.com

DMK sells ice cream site to Schwarz

The DMK Group wants to streamline the production network for its ice cream business unit.

Specifically, it is selling the Waldfeucht-Haaren production site in North Rhine-Westphalia, where ice cream is made.

Schwarz Produktion, which unites the Schwarz Group's production facilities (Lidl and Kaufland) under one roof, will take over this location for its own ice cream production, including around 200 employees. The transition is planned for early 2021.

"We are continuing to build on the DMK of the future: Germany's largest

dairy co-operative, with brands such as Milram, Humana, Uniekaas or Alete, is one of the largest suppliers to the German food retail trade. It should continue to develop into a strongly market

and consumer-oriented company. In order to position ourselves as best as possible, one component is to further optimise our own production network," summarises Ingo Müller, CEO of the DMK Group.

In this context, DMK plans to focus its ice cream production on the Everswinkel and Prenzlau sites. In Ever-



swinkel, DMK intends to increase production capacity at the existing location from around 65 million litres of ice to around 100 million litres in the future.

"The sale of the Waldfeucht-Haaren location enables us to concentrate our ice cream production on two locations. This creates further synergies," says Müller.

Austrian farmers want a fair share

There is growing dissatisfaction among Austrian farmers about the price situation, which has already led to protests by farmers in several countries.

This has led Helmut Petschar, president of the Association of Austrian Milk Processors (VÖM), to note: "Significant cost increases in advance payments for the dairy industry in the areas of packaging, energy, wages, sugar and fruit, further increasing international quotes, especially for cheese and powder and protein dairy products are leading to firmer

prices throughout Europe."

In 2019, Austrian dairies were faced with massive cost increases, which included higher costs for energy, packaging, wages and inputs. Without higher retail prices, this led to pressure on farmers' milk payment prices, while at the same time other quality requirements, such as sustainability criteria for non-GMO production, led to increased pressure on farm income. However, there is an upwards price trend in international markets, especially for cheese, milk powder and protein. The reasons for this

are good global demand, with increased exports from the EU, as well as a worldwide lower supply of milk, partly as a result of the droughts and environmental issues in Australia and New Zealand.

On average, Austrians have one of the highest incomes in the EU and the share of consumption expenditure for dairy products is only 0.7%. It is therefore clear to VÖM that these positives can also aid Austrian dairy farmers. "In any case, it must be guaranteed that domestic dairy farmers receive a fair share," adds Petschar.

Thomsen joins Arla Foods Germany

Christian Thomsen has been named as the senior category director for cheese and butter, spreads and margarine at Arla Foods Germany.

He will be responsible for brand and private label marketing and category development for these product segments in Germany. He comes from Coca-Cola and

follows Randi Wahlsten, who has moved to Arla Foods in Denmark.

The graduate in business administration had also previously worked as a research and media manager at Danish confectioner Toms. At Arla, Thomsen reports to Markus Mühleisen, the Germany head of Arla Foods.



Germany's MIV expects lower milk production

The German Milk Industry Association (MIV) says milk volume in Germany increased continuously in the last weeks of 2019, due to mild winter weather and in accordance with seasonal development. The previous year's line was last exceeded by 1.1%.

"The milk market has stabilised in the past year, the fluctuations of previous years have subsided. The signs for the milk market in 2020 are good, even if the increasing protectionist tendencies within the EU and worldwide will pose challenges for the trade in milk products – this year and the next decade," notes Peter Stahl, chairman of the association.

Overall, however, raw milk production in Germany in 2019 was set to be slightly below the previous year. At the same time, the fat and protein content of the milk delivered was higher than in previous years.

The latter is in line with developments in the EU-28. EU milk deliveries in the past year were slightly higher than the previous year at 0.5%,

not least due to strong increases in only a few countries. For the German milk producer price, the MIV expected an annual average of €0.335 to €0.34/kg raw milk for 2019. The 2018 price was €0.344/kg. Overall, 2019 milk prices tended to move sideways.

"If you consider the volatility of the past few years, better prices for sustainable milk production are essential so that milk producers can meet the increased requirements," the MIV chairman states. "Two points were decisive for the market development in 2019: butter has become significantly cheaper than in previous years and skimmed milk powder prices have recovered strongly. Butter prices in the EU have been at their lowest level in three years but continue to exceed the long-term average."

In Germany, butter consumption stabilised in 2019 due to lower prices, while demand in other EU countries and exports also rose slightly.

After an unusually long pe-

riod of weak prices, SMP prices rose in 2019 and were thus able to compensate for the lower prices for butter.

With stable production and stimulated demand, intervention stores have been cleared and EU exports are now expected to reach a historic high of almost one million tonnes of skimmed milk powder.

Most of the milk produced in Germany is processed into cheese. This development continued in 2019 and is expected to lead to a new record in cheese production. Consumption in Germany is still high, and there is considerable cheese demand for international trade.

Consumer behaviour when it comes to drinking milk is interesting. While customers consumed less drinking milk overall, organic milk (+8.6%) and pasture milk (+14.8%) grew. For the first time, more than 10% of German drinking milk is organic.



Meggle transfers shares to farmers

After more than 20 years of partnership, German dairy Meggle will transfer its shares in SalzburgMilch to the Austrian Salzburg co-operatives for strategic reasons. The third largest Austrian dairy is now 100% owned by local dairy farmers.

"Meggle's participation in SalzburgMilch was our first foreign investment in 1999 and was a matter close to our owner Toni Meggle. Due to the strategic realignment of the company and the concentration on our core markets, we decided to transfer our shares to our long-term partners," says Matthias Oettel, CEO of Meggle Consumer Products.

"We are thankful for the successful cooperation over the past 20 years. A lot has been achieved together, which is unique in Austria, between co-operatives and a private dairy entrepreneur. The farmers' owners will continue to pursue this path consistently for our 350 employees and 2,600 milk suppliers in the future," says SalzburgMilch chairman Robert Leitner.

Palsgaard buys Teknaroma in Turkey

Danish emulsifier ingredients supplier Palsgaard has announced its purchase of the Turkish food ingredients distributor Teknaroma.

In February, Palsgaard acquired 90% of the company's shares, with Teknaroma's previous owners retaining 10%. The deal reinforces a long-standing relationship between the two companies.

Teknaroma has had exclusive distribution rights to Palsgaard products on the Turkish market since 1997.

Jakob Thøisen, CEO of



Palsgaard (far left in featured photo), says, "We are delighted to have concluded the purchase of Teknaroma and to be able to secure the services of all the highly experienced staff in its Istanbul office.

Teknaroma has successfully represented Palsgaard in the Turkish market for more than 20 years and adding the business to the global Palsgaard family will offer significant advantages to all parties."

Palsgaard is now looking to expand Teknaroma's existing application facilities in Turkey. The facilities will cover chocolate as well as other categories, including bakery and dairy.

As a result of the takeover, Teknaroma managing partner Cengiz Altop (to Thøisen's right in the photo) has become managing director of Palsgaard Teknaroma.

Teknaroma will continue its current agency and distributor activities for the foreseeable future.

SPX sells yellow cheese technology

Through its Danish subsidiary SPX Flow Technology Denmark, SPX Flow has signed an agreement with Primodan for the transfer of its yellow cheese activities and technologies. The technology offers cheese making solutions that includes curd making, pressing and final brining systems.

Primodan is a Danish-owned company that designs, manufactures and supplies plants and equipment for the dairy and food processing industries. The company designs and supplies white cheese plants, as well as filling and packaging machines for pre-made containers for markets worldwide, it says.

Jan Olsen, food & beverage director, business transformation in Europe, Middle East and Africa at SPX Flow, says, "The agreement transfers some excellent technology to Primodan, which

is itself a leader in cheese production.

"New yellow cheese plants are now part of our core growth strategy and the sale of this portion of our business makes sense for both companies and our customers."

The equipment included in the sale includes the CurdMaster, which is used to produce cheese curd from cheese milk; the OPD Pre-Press System, used for batch draining, pre-pressing and cutting of cheese curd; and the SaniPress system, for final pressing and handling of hard and semi-hard cheeses. These machines have proven performance and efficiency excellence across a range of cheese types.

As part of the agreement, SPX Flow will continue to provide aftermarket service for customers with existing yellow cheese plants until the end of 2021.

Cheese exports up in Switzerland



Switzerland was able to export 4.5% more cheese in volume in 2019 versus 2018. Exports were also increased by 3% in terms of value.

A total of 75,877 tons (+3,282 tons) of Swiss cheese worth CHF667.7 million (€616.3m) were exported, says Switzerland Cheese Marketing (SCM).

The data collected by TSM Treuhand show that the different product categories have developed very differently.

The average export price of CHF8.80/kg (€8.12/kg) was slightly lower than in 2018. One-third more cream cheese, mozzarella and curd

were exported, and 10% more semi-hard cheese. The export figures for ready-made fondue rose by almost 8%.

The main sales market is Europe with over 80% of the exported volume, around half of which goes to Germany. At the same time imports rose by 2.8% to a total of 64,129 tons, which corresponds to a value of CHF434.1 million (€400.6m). The value-based trade balance closed at CHF233.5 million (€215.5m), or 5.7% higher than in 2018. Almost 10% more hard cheese was imported. Around 82% of all cheese imports come from Italy.

Kennedy named as Omsco chairman

After 18 years at UK organic dairy co-operative Omsco, Nicholas Saphir will step down as executive chairman and hand over to Neil Kennedy on 4 May 2020. Saphir steered Omsco from existing as a small specialist organic producer group to become the world's second largest dedicated organic dairy co-operative.

Saphir explains, "Omsco has come a long way. From small beginnings Omsco is now a cooperative of 250 farmer members who produce over 50% of the UK's organic milk supply. Our long-standing partnerships in the UK with Yeo Valley and Wyke and in the US with Organic Valley (CROPP) have been the cornerstones of

our success. Omsco's opportunities at home as well as our added value exports to markets from the US and EU to Australasia, place Omsco in an excellent position to take advantage of the future.

"Success is totally down to the readiness of our members to innovate. They have responded to market demands and standards, supporting a management team that is committed to seeing the future as part of a global market.

"I'm proud to have been involved with such a forward-thinking group of farmers, management and



customers. I'm confident that, under Neil's chairmanship, Omsco and its members will continue to prosper in an increasingly changing world."

Kennedy has over 30 years of dairy experience and has previously held chairman roles within Rodda's and Crediton Dairy, the latter where he was also a co-owner. He has been a non-executive director on the Omsco Board since 2016.

Inpong named at Müller

Müller Yogurt & Desserts has named Michael Inpong as strategy director. The newly created role follows the appointments of Jonathan Piper as commercial director, brand and David Hollins as commercial director, private label and food service.

Inpong's position begins with immediate effect and sits alongside his responsibilities as chief marketing officer. Bergen Merey, chief executive officer at Müller Yogurt & Desserts, says: "We are taking organisational steps to continue strengthening our core brands, develop a leading private label proposition and innovating to target parts of the category where we have a limited presence."

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IN BRIEF

EU and West Africa

The EU Commission hosted a roundtable discussion between the European and the West African dairy sector in Brussels. It included the CEO of Tiviski dairy, Nagi Ichidouand Ali Kado, the president of Kawtal dairy in Niger and high level participation of the European Commission with director John Clarke and Brigitte Misonne. The meeting built on the EU's agenda for the new Africa-Europe Alliance for Sustainable Investment and Jobs and allowed for participants to discuss the potential of shared opportunities, the European Dairy Association reports.

Unilever marketing

Unilever, maker of Wall's ice cream, is ceasing to market its food and beverages to children under 12 on traditional and social media, and limiting its use of cartoon characters, the company says. By the end of 2020, every ice cream in the kids' range will also have no more than 110 calories and a maximum of 12g of sugar per portion.

India to open up to US

India is hoping that a visit by the current US President will loosen up trade restrictions on the country and restore some trade preferences, in exchange for tariff reductions. In 2019, the US President suspended India's special trade designation. In addition to chicken and blueberries, the reductions may be on dairy as well, but with a 5% tariff and quotas.

Methane differences

Global Dairy Platform is coordinating a project to better understand scientific evidence for quantifying methane emissions in the atmosphere. Methane is actually a short-lived climate pollutant. For further information, visit www.dairysustainabilityframework.org

Danone North America in climate change partnership

Danone North America has announced a partnership with rePlant Capital, a financial services firm dedicated to reversing climate change. Over the next several years, rePlant will invest up to \$20 million (€18.1m) to support Danone North America's farmer partners with expenses related to converting to regenerative or organic farming practices.

These practices increase biodiversity, enhance ecosystems and enrich soil, as part of the company and its partners' broader commitments to addressing climate change.

The company is consistently pursuing new models of working with farmers to incentivise the adoption of new, sustainable farm management practices — for example, by maintaining long-term contracts with dairies to help alleviate short-term market volatility, thus allowing them to consider new ways of farming — and in 2018 committed

to investing \$6 million (€5.5m) in soil health research over five years. By gaining a better understanding of the variables and nuances across growing regions, this research will enable Danone North America to better guide its farmer partners with regards to farm management and use of regenerative agriculture practices on their farms.

"As a company that is passionate about climate activism, we are pleased to be partnering with rePlant to support our farmers and bring new, innovative financial solutions to address climate change," says Mariano Lozano, CEO of Danone North America.

"Providing these loans mitigates the financial stress that transitioning to regenerative and organic farming practices places on our farmers and allows them to focus their energy on driving sustainable agriculture on their farms."

The first of these loans has been provided to Kansas-based McCarty Family Farms, a partner of Danone North America for almost 10 years and co-owner of MVP dairy, winner of the International Dairy Foods Association 2020 Innovative Dairy Farmer of the Year award.

The McCarty family farm owners will use the loan to install moisture probes on cropland surrounding their dairy, where water access issues are of concern, to reduce the amount of water used on crops that provide forage for the dairy cows.

In addition to reducing water usage on their own farm, McCarty Family Farms is working with the local feed partnerships as well as the local watershed authority to see how this programme may be expanded to other farms in the region to improve water consumption and aquifer longevity within the Ogallala aquifer.

Fonterra extends MyMilk initiative

Dairy co-operative Fonterra has announced plans to extend its MyMilk initiative to New Zealand's North Island.

"Fonterra's been looking at ways to make it easier for farmers to join and grow in the co-op, ensuring our co-op is strong for generations to come," said group director of farm source, Richard Allen. "One way has been through MyMilk, a company that's helping young and new farmers establish a foothold in the industry and ultimately take a stake in Fonterra.

"After five successful years in the South Island,

we're extending MyMilk across the North Island to allow more farmers, especially young farmers, the chance to purchase their own farm and join the co-op. We're also extending to help existing Fonterra farmers to buy another Fonterra farm."

MyMilk was launched in 2014 in the South Island, and now has more than 145 dairy farmers across Southland, Otago and Canterbury.

The initiative is based on the belief that the co-operative model is the best fit for farmers in New Zealand. MyMilk offers farmers the opportunity to supply milk

for up to five seasons without any requirement to purchase shares in Fonterra. MyMilk farmers are required to meet the same supply terms as Fonterra shareholders in milk quality, safety and sustainability, and farmers also have access to many of the services the co-operative offers.

MyMilk will be available in the North Island for supply, starting from 1 June 2020. Eligibility conditions apply and MyMilk volumes are limited to five per cent of Fonterra's total milk collections. For more information: mymilk.co.nz

A natural high with California Based Dairy (CBD)

Move over cannabis, there's a wholesome new dispensary in town, doling out the original edibles: California Based Dairy (CBD). Real California Milk reimagined the dairy and dispensary model with a one-of-a-kind California Dairy Dispensary pop-up event in February on Abbot Kinney Boulevard in Venice, California.

The California Dairy Dispensary highlighted the natural, mood-enhancing properties of California dairy foods as represented by varieties of cheese, micro-dosed butters, flavour-infused yogurts and rolled ice cream – all the TLC with zero THC or cannabis. During the event, attendees could also speak with a dairy docent to discover the dairy variety that's right for them. It

was everything expected from a traditional dispensary only in dairy form, tapping into dairy's place as the original mood-enhancer – wholesome, natural and legal in all 50 states. "California based dairy foods, or CBD for short, not only taste delicious but are a natural way to enter a golden state of feeling everything from bliss to excitement," says John Talbot, CEO of the California Milk Advisory Board. "A dispensary-inspired setting offers consumers an unexpected and unforgettable way to experience their favourite foods made with real milk produced on family dairy farms using the



nation's most sustainable farming practices."

Those unable to attend the event were able to easily find the natural, mood-enhancing properties of real California dairy products at realcaliforniamilk.com/product-locator or by looking for the Real California Milk seal at retailers throughout the US. The Real California Milk seal means products are made with milk from family farms using the most sustainable farming practices in the nation.

Darigold to expand in US

Launched in the US market last year, FIT milk from Darigold has doubled in sales and distribution over the past six months. The milk offers 75% more protein and 40% less sugar compared to traditional milk.

To support this growth, Darigold will invest \$67 million (€61.6m) in its Boise, Idaho, US facility this year.

Using ultrafiltration, FIT is lactose-free and high in protein. Darigold recently broadened the FIT product line to include whole milk, as well as offering 2% white and 2% chocolate milk.

According to Duane Naluai, Darigold's senior vice president, "FIT was inspired by our farmer owners' desire to revitalise fluid milk.

They, know Darigold must provide consumers with new and relevant types of milk that preserve the wholesome and nutritious foundation which makes milk great in the first place."

The investment also includes new modern aseptic packaging for FIT as a shelf-stable product that can be shipped and stored without refrigeration. This project will generate 15 new positions in Boise. It will also reduce the company's environmental footprint as it relates to water use, plastic, corrugated material and overall energy use.

Many of the local farmers who supply the milk and sponsored the development of FIT are based in Washington in the US.



Dairy ingredients to grow by 2025

The global dairy ingredients market is estimated to be valued at US\$53.8 billion (€49.4bn) in 2019 and is projected to reach US\$81.4 billion by 2025, recording a CAGR of 7.1%, according to a report from Research and Markets.

The milk powder segment is projected to be the largest segment in the dairy ingredients market during the forecast period. An increase in the shift toward a healthy lifestyle has altered the food consumption habits among consumers. As a result, the demand for snacks and beverages options, which are indulgent as well as nutritional, has been on the rise. Milk powder is used to provide texture, colour and flavour to food products, as well as enriched taste and texture. It is

also used to provide mouth fill texture to food without being high in fat content.

The bakery and confectionery segment is the dominant one regarding applications of dairy ingredient. Consumers are indulging in more healthy snacking habits, which has increased the demand for functional and fortified ingredients.

Milk powder and whey concentrate are used to provide texture and colour to bakery products. They are also used as browning agents for bread. As a result of their low fat content, they are popular among manufacturers.

Currently, the Asia Pacific region is the dominating market for dairy ingredients; it is estimated to be the fastest-growing market in the coming years,



as well. The high population and increase in purchasing capacity have enabled consumers to demand functional and fortified food products in the region. The low mortality rate and improved living standards have also enabled them to invest in health and health-related services. This has increased the market for all kinds of nutritional and ready-to-eat food options, the researchers say.

Call for action for European dairy

The new report conducted by the Institute for European Environmental Policy (IEEP) finds that there is a need for the dairy industry, politicians, governments and interest groups to work even more closely together going forward if the European dairy sector is to continue to evolve into a sustainable business and production model. It also highlights the necessity to strike a fair balance between the economic, environmental and social aspects of the sector, as these are intrinsic to securing its sustainable future. The report, which has been commissioned by European dairy co-operative Arla Foods, points to concrete action that can be taken to ensure a sustainable future of the sector.

Action needs to be taken in partnership with industry (across the value chain), policy makers and a broad range of stakeholders, including consumers

The report states that there are examples where the European dairy sector is already operating within this central space, with many viable farm businesses delivering quality nutrition to consumers, which is produced sustainably. Yet moving the whole of the dairy sector in this direction will require partnerships and those affected within the sector will need to be supported throughout the transition and incentivised to be part of the change.

The report aims to clarify the challenges and opportunities that face the sector in Europe in the future.

“We wanted an honest and realistic appraisal of the European dairy industry and it was important that an independent third party did this research. The report clearly sets out the challenges. But it is also clear how much the dairy sector gives back to Europe. We need to take all these elements of dairy’s impact into account when we identify the right path to maintain and develop an economically stable European dairy sector that is

A new independent report has analysed the interlinked challenges and opportunities across the value chain of the European dairy sector

A vision

for the future of the European dairy industry



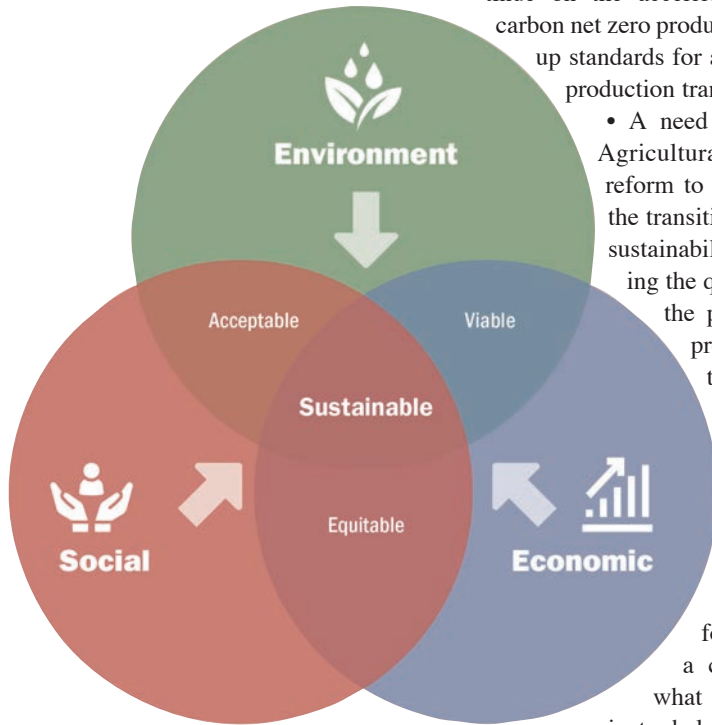
actively taking part in creating a sustainable future,” says the CEO at Arla Foods, Peder Tuborgh.

He continues, “We hope that the report will be appreciated as a contribution to the ongoing discussions about how Europe and its food sector should transition into a sustainable continent in terms of economy, environment, health and quality of life as outlined in the European

Green Deal.”

Over six months, the IEEP interviewed a number of stakeholders across the value chain, from dairy farmers, to machinery manufacturers, trade unions, environmental and animal welfare NGOs and consumer groups. The results have been peer reviewed by a panel of international academics representing interests throughout the dairy sector in the EU.

The three pillars of sustainability should, therefore, be pursued together, in an integrated way



Among the recommendations in the report are:

- A need for the dairy industry to continue on the accelerated path towards carbon net zero production while driving up standards for animal welfare and production transparency
- A need for the Common Agricultural Policy (CAP) reform to support farmers in the transition towards greater sustainability while increasing the quality and value of the products delivered, preferably by incentivising positive change rather than penalising
- A need for a level playing field across the EU on animal welfare standards, food labelling and a clear definition of what a sustainable diet is to help consumers make

more informed decisions and comparisons about the foods they buy

- A need to develop pathways to enable young farmers to enter the industry to bring new skills, ideas and approaches to the sector.

“The report recommends that we come together as an industry and work closely with governments, interest groups and consumers. I am confident that this can be achieved, and I know that Arla Foods will play its part. As a farmer cooperative we have a great sense of responsibility to lead the dairy sector and to establish the necessary partnerships,” says Tuborgh.

Dairy products are found in the majority of fridges across Europe. According to the European Dairy Association, there are 700,000 dairy farms across Europe and 300,000 people working in dairy processing, all contributing to the economic, social and environmental fabric of Europe as we know it.

The report and its recommendation was presented by IEEP at an event in Brussels hosted by Arla. The report can be viewed at: docs.arla.com/ieep-report. [Dii](#)

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IN BRIEF

India introduces

New milk products including Chhena Rabdi, along with whey protein drinks Gutpat and Chhena Kheer and ice cream, have been introduced by the Chhattisgarh state cooperative dairy federation, the *Times of India* reports. E-commerce is also being employed, along with mobile vans, it says.

Retail Zott shops wins

The Zott store, World of Pleasure in Asbach-Bäumenheim has been awarded the Store of the Year 2020 in the food category by Handelsverband Deutschland. It opened in March 2019. Visitors and customers will find a culinary shopping experience with bistro cuisine on over 1,300 square metres. It not only offers all products from Zott, but one of the largest cheese counters in the region.

Rocking shamrocks

Shamrock Farms has introduced Rockin' Protein Plus in the US a ready-to-drink beverage that combines protein and superfruits with Shamrock Farms milk. It comes in two flavours, Blueberry Pomegranate and Cherry Crème. The first is an source of protein and vitamins A, C and E, and Cherry Crème has the added health benefit of tart cherries.

SlimFast goes keto

SlimFast is adding 21 new products to its SlimFast Keto lineup, including ready-to-drink meal replacement shakes and mixes, in the US. The Meal Shakes To-Go shelf-stable beverage line comes in 11oz bottles in Creamy Milk Chocolate, Mocha Latte and Vanilla Cream.

Oriental coffee from Andechser



Germany's Andechser dairy has launched a new 3.5% fat variety of its Bio-Lassi organic yogurt drink, Coffee Oriental. The beverage features coffee, cinnamon and cardamom flavours, and retails for €1.49 per 250g cup.

Kerniger cottage cheese



Kerniger cottage cheese High Protein has debuted from the German dairy Bayernland. It offers 20% fat, coupled with 24g of protein per 150g tub.

Fage goes sour cream in US



Fage, makers of Total yogurt, have introduced 8oz and 16oz sour creams in the US. It is made with cultured cream and enzymes and from non-GMO sources. It joins the company's line of Total 0%, 2% and 5% yogurts.

Perry's retail rollout

Perry's Ice Cream Company in the US has 17 new retail flavours and three new variants for scoop shops. For example, Barista Bars come in six packs,



with one bar containing as much caffeine as a cup of coffee or tea. Varieties are: Cold Brew Coffee, Mocha Latte and Chai Latte. The premium Sundae Cake line comes in 48oz containers in four flavours, all with a whipped cream ice cream centre: Almond, Chocolate, Strawberry (strawberry ice cream with vanilla-flavoured cake crumbles) and Yellow (yellow cake ice cream with chocolate and vanilla-

flavoured cake crumbles).

The three new exclusive scoop shop flavours will be available as of Spring 2020 and come in three-

gallon tubs. Varieties include: Marshmallow Treat (marshmallow ice cream with a hint of butter, marshmallow swirls and flavoured crispies), Monster Dough Cookie dough ice cream with peanut butter swirls, chocolate candies and oatmeal cookie pieces) and Very Bad Breakup (chocolate ice cream swirled with sea salt caramel ice cream, milk fudge swirls and fudge filled hearts).

Starbucks Sakura to take away

Starbucks has unveiled a ready-to-drink Sakura Frappuccino, celebrating the annual cherry blossom season in Japan. The coffee beverage made to order at Starbucks cafes now also comes in a takeaway package at convenience stores in Japan.



The drink combines a cherry blossom flavour with a white chocolate

cheesecake taste, for a sweet and milky drink, the company says. The Starbucks Sakura White Chocolate Cheesecake with Milk Pudding also contains chunks of milk pudding for texture and a bit of bite, and retails for ¥219 (€1.80 without tax)

for a 180g cup.

Arla's Baby&Me in Middle East

Arla Foods has debuted its new range of Baby&Me organic supplements to Saudi Arabia at a recent launch event in Jeddah. Products include: Mom Formula – for expecting mothers; Infant Milk Formulas; Multi-grain porridges – four months and above; pouches/fruit and vegetable porridges – six months and above. Arla's Baby&Me Organic range will be

launched in Kuwait and the United Arab Emirates as part of the company's regional phased approach.



A higher cheese

Caputo Cheese introduces Elevated Cow mozzarella cheese in the US, infused with CBD, which the company says takes the cheese to new heights.

Odourless and flavourless crystalline cannabidiol is independently tested for potency, solvents, heavy metals and pesticides, and then put into the cheese. The CBD



Mozzarella comes in small balls, (Bocconcini) as well as Ovoline size.

New fruit flavours for Nöm Pro

At Austrian dairy Nöm, five Pro fruit yogurt flavours have been joined by several low-fat and lactose-free varieties, all of which come with an extra portion of protein and have no added sugar. The low-

calorie protein yogurt unit has around 50% of the daily requirement with 20g protein per 180g cup. The varieties include strawberry, blueberry, cherry, sweet mango and fine vanilla.



Shred thicker

Organic Valley has debuted Thick Cut Off the Block shredded cheese in five varieties in the US: mozzarella, 3 cheese Italian, 3 cheese Mexican, mild cheddar and sharp cheddar. They are packaged in 6oz bags for an SRP of \$5.49 (€5.05).



Growing with Gorilla

Gourmet Gorilla has introduced Grow Good Foods GrowYo yogurt. Chicago-based Grow Good Foods is committed to providing all-natural, local and sustainable great-tasting healthy snacks that are rich in nutrients with traceable, limited and simple, clean ingredients to all children to help them learn and grow, it says. Sourced from a

single-family creamery in the Midwest, the minimally processed, non-homogenised farmstead 1% low-fat yogurt is made with nothing artificial, no preservatives, additives, thickeners or fillers. The yogurt comes in 4oz cups in Peach, Strawberry and Vanilla flavours. The cream-on-top yogurts are loaded with probiotic cultures.



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Making the trends connect

We all know that sugar reduction is one of the most powerful consumer trends. Consumers, however, seem willing to turn a blind eye to the sugar sins of “honestly indulgent” categories, instead focusing on categories traditionally marketed as a healthy choice. The consumer psychology seems to have been to judge ‘healthy’ products more harshly if they contain sugar – even if, as in the case of yogurt, sugar is just 10%-12% of the product.

This trend can be seen clearly in the UK market. Here consumers’ harsh judgement of ‘healthier’ categories has been amplified by the public health authorities, who have specifically targeted yogurt as a category where people should reduce their sugar intake.

Neilsen data for 2019, published in UK trade journal *The Grocer*, illustrates this how this trend is impacting sales of yogurts and dairy desserts. Sales fell by 2.5% by value and 4.3% by volume in 2019. The biggest brands – owned by Danone and Müller – which also have a health positioning, suffered most and challenger brands were the only growth stories. However, the stand-out in the category was the Gu chocolate dessert brand, which enjoyed a 10.7% increase in sales, underscoring the idea that honest indulgence is what a lot of consumers want most.

Permission to indulge

The power of ‘permission to indulge’ is also shown by the continuing success of Halo Top ice cream. This higher protein, lower-sugar brand has been the first to successfully create a healthier segment of ice cream. Its sales were up in 2019 – only its second year on the UK market – by 77%, to £23.4 million (€27.6m), making it the fastest-growing ice cream brand. Second in the high-protein, low-sugar race was Unilever’s Breyers brand, which grew 20% to £7.7 million (€9.1m).

Caffeine in non-traditional forms has become the go-to energy ingredient for younger consumers. That can be seen in the continuing growth in 2019 of chilled RTD coffee milks, increasingly embraced by younger consumers as an alternative

Supermarket sales figures show how trend-connection can be make or break

to hot coffee. Market leader Starbucks – made by Arla – hit sales of £62.8 million (€74.1m) in 2019, a 20% increase over 2018. And number two brand Emmi earned sales of £20 million (€23.6m), a 30% increase.

Consumer preferences for convenience and snacking is also having an impact in cheese, where demand for snack cheese surged as demand for traditional block cheese declined. The biggest winners were Babybel, with sales up 17.7% and Kerry Foods, whose Attack-a-snack brand targets teens with a higher protein message, also had 17% growth. Mondelez’s Dairylea brand also grew (4.3% by value and 2.6% by volume), adding new snack formats.



Julian Mellentin

than most plant milks and equal to that of almond.

Plant milks achieved an 8.3% value share of the UK’s liquid milk market in 2019 – compared to 1.7% in 2013. That’s impressive but equates to about a 5% volume share. Plant milks are popular and growing, but they are still niche and not mainstream.

They are also prominent in supermarkets, but that reflects the significant margin that supermarkets make in plant milk, compared to the wafer-thin margins on cows’ milk. If the US is any guide, plant milks could yet grow to a 12% value share.

But it’s not all plain sailing for plant-



Plant drinks

Plant milks have been the big growth story of the last five years, and here the star brand in 2019 was oat-milk maker Oatly, whose sales leaped by 110% in 2019, to £34.2 million, due partly to a quirky and all-pervasive advertising campaign and partly to a taste profile that is better



based. In the UK, as in other markets, there are signs that plant-based yogurt substitutes are not growing in the way plant milks have done.

Taste matters

Danone's acquisition of the Alpro brand and a heavy investment in growing the Alpro plant-based yogurt business initially paid off in rapidly higher sales. But in the UK sales growth seems to have come to a halt in 2019. Market leader Alpro managed an increase of just 1.3%. Some brands, such as Coconut Collaborative's coconut-based yogurts, seem also to have stalled. Poor performance on taste and texture are probably the factors holding this sector back.

In the UK butter and spreads category the owners of Upfield must be wondering why they bought Unilever's polyunsaturated table spreads business back in 2017 – a decision that even at the time seemed recklessly optimistic. By that time, the tide had already turned in favour of fat and in favour of butter as a natural and good-tasting fat. Conversely, it had turned against margarine and polyunsaturated

spreads on grounds of taste, health and naturalness.

Unilever spent five years fighting this trend tide before it threw in the towel and sold its spreads business – once a cornerstone of the company.

The new owners, Upfield Group, thought they could turn the Flora and other brands around. How anyone could have believed that then – or now – is hard to comprehend. Unsurprisingly, in 2019 Upfield saw a fall in every one of the major brands it had bought from Unilever. Once a flagship brand, Flora (known as Becel in some parts of Europe) was hit hardest, with sales down by 11%. Flora shows how powerful the trends are and what can happen to you if you are on the wrong side of them. The brand has shrunk by 50% over seven years,

despite the best efforts of marketers.

More recently, the 'plant butter' or 'vegan butter' marketing message – an attempt to reposition margarines as virtuous because they are 'made with plants' – has failed. Failing to meet consumer expectations on 'naturalness' and taste, spreads are off trend and cannot be saved even by the halo of plants. **Dii**

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Dairy Desserts

Dairy desserts are undergoing a renaissance, with retail parlours aimed at consumers who want to enjoy an outing while eating magnificent, Instagram-friendly desserts. Similarly, any meal at home is rounded off by a sweet treat, and consumers are looking for new experiences in their eating habits.

Dairy is a key part of this, featuring in ice cream, yogurts, cheesecakes, and of course, panna cottas. Chloé des Courtis, senior manager, EMEA marketing at CP Kelco, answered a few questions about where the ingredients supplier sees the trends emerging.

Q. What trends are you seeing in the dairy desserts market?

There is so much newness in the dairy desserts market. The main trends are pleasure/indulgence, premium and clean label. Innovations include special textures, layered desserts, inclusions, high quality ingredients and a new look at traditional recipes.

Consumers purchase desserts for different reasons: either to satisfy a craving, take a break, treat themselves or conclude a meal. All these different eating occasions are opportunities to innovate.

Snacking has changed so much. It's an anytime occurrence now and that has led to more "portable" dessert items and even more portion control.

Globalisation is also driving trends. Younger generations have become food explorers. They love to travel the world and are very receptive to trying new flavour profiles. Then, they come back home and want to introduce their friends to all the new ingredients they've experienced. This is opening new doors for the industry and leading to more experimentation in dessert concepts. Consumers are willing to take "risks" and try exotic new desserts that mix salty and sweet, heat and spice – out of their usual comfort zones.

Q. What are your customers asking for?

Whether through the request of consumers, food advocates or governments, reducing the sugar content of desserts is an ongoing effort for our industry. Nutri-score nutrition labelling is also influencing new product development as it empowers consumers to compare their options. Consumers don't want to give up desserts; they are really just asking for



The rise of the food explorer

Chloé des Courtis explains how hybrid ideas are affecting the dairy desserts market, ranging from sugar reduction to adventurous eating

permission to indulge without the guilt. They like formulations that incorporate a few "healthy" ingredients and still satisfy that sweet tooth. For example, consumers like to know about the antioxidant properties in chocolate.

They're also beginning to accept fat as a necessary part of their dietary intake so full-fat dairy is growing. Having a dessert should not be considered a major breach to a diet or lifestyle.

Customers are also more concerned about how dessert products are made. They're paying attention to ingredients, their quality, and where they come from. The whole story behind the product is very important to them, including the sustainability priorities of the companies that make them.

"Clean label" is also a trending consumer request. However, this phrase

means many different things depending on the consumer and region. In general, consumers want products made from ingredients that are easily recognisable on the label and compatible with their diets or personal beliefs, such as vegan/vegetarian, kosher and halal.

We have been seeing more requests for vegetarian alternatives to gelatine in recipes. Genu Explorer Pectin ND-200 was developed to answer the market need for a label-friendly texturising solution for use in neutral dairy desserts. It's suitable for both hot-filled (panna cotta type) and cold-filled (crème dessert type) processes. Extracted from citrus peels, our speciality pectin product can be used instead of gelatine and does not require further cooling time to obtain structure.

It helps provide a firm texture and a creamy, full-bodied mouthfeel to help

dessert makers create indulgent but label-friendly treats. Depending on the desired application, technical experts can also recommend other ingredients to achieve a gel-like texture, such as Kelcogel Gellan Gum.

Q. How have trends affected the way the products are used, ie, new ingredients such as matcha?

The major changes affecting products are convenience as well as adding health-related benefits to match consumers' on-the-go and active lifestyles. We see more single-serving packaging to accommodate this need, which not only makes snacking an easy option for busy families but also helps with portion control.

This is an excellent opportunity to position some dairy desserts as great snacks with the protein consumers crave. The portion sizes also show consumers that desserts can be incorporated into a healthy lifestyle.

Many new ingredients and flavours are being used. Beyond the traditional vanilla and chocolate flavours, we see coffee incorporated with the added functional benefit of a caffeine boost. Botanical ingredients and flavours are also growing (pun intended): herbs, spices, cinnamon, mint, peppermint, lavender, rose, green tea. In the premium dessert category, alcohol flavours are popular: rum, piña colada and whiskey.

The dairy alternatives trend is also affecting this space with flavours. Coconut is gaining popularity, as well as nuts such as almond and hazelnut.

Q. What areas of growth do you see coming for the dairy desserts area?

Dairy alternatives are booming in what used to be traditional dairy segments, as this trend expands from dairy alternative drinks into neutral desserts. Soy, almond and oat-based desserts are expected to grow, but coconut is the key dairy alternative product base as it most resembles the texture of whole dairy milk.

Hybrid products are also growing. This is an interesting trend to watch and is something that appeals to food explorers. The idea is to position a product across two categories, such as a kefir dessert yogurt, a Greek yogurt crème or a yogurt mousse. **Dif**



Author: Chloé des Courtis is senior manager, EMEA Marketing at CP Kelco

Dairy follows the trends

Ingredients suppliers are spending a lot of time exploring the trends to provide products that will sate consumer appetites for desserts. Balchem Ingredients Solutions has provided a list of trends it thinks will come to fruition in 2020.

"Trends tend to gain momentum over several years' time and evolve as they move forward. Many of the trends from the previous years have been gaining momentum and will continue to influence new market launches for this year," the company says. These include brightly flavoured colours, with a six per cent compound annual growth demand for all natural colours in ice cream and frozen dessert launches.

Another survey showed that the bulk of consumers in the US opined that it is somewhat or very important to know where their food is coming from. However, despite the desire to know where their food comes from, more than one-fifth (21 per cent) of consumers said they are not at all knowledgeable about where their food does come from.

This shows an obvious gap in

information consumers want to learn from manufacturers and retailers. Transparency matters, and many consumers are willing to pay for it. Sharing information with the consumer will only become more important, both to appeal to diverse diets and dietary restrictions and also to protect the reputation of the food industry over the long term.

'Better for you' indulgence has taken over from 'mindful' indulgence, according to the company. Protein adds a level of permissibility and opens ice cream eating to more occasions, such as post-workout and snacks, not just dessert. According to Innova, 40 per cent of consumers seek out protein when purchasing a snack. Protein enriched ice creams and frozen desserts are dominating NPDs in pint-size packaging for single servings without guilt, Balchem notes.

Product texture is also gaining prominence, with a shift towards experimenting with texture as well as flavour. This indicates a need for companies that mass-produce items to better cater to the foodie culture.

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NATURAL FOOD INGREDIENTS

A growing sophistication

With Middle East dairy sales expanding steadily, dairy suppliers from around the world are targeting its consumers, hoping to gain a foothold in an increasingly diverse marketplace that is often open to innovation.

Dairy Industries International attended the 4th Global Dairy Innovation Congress MENA 2020, held in Dubai, the United Arab Emirates (UAE), 20-21 January, where participants were encouraged by sales projections from market researcher Euromonitor International that the Middle East (and Africa) dairy market should expand at a compound annual growth rate (CAGR) of more than three per cent between 2019 and 2023. Indeed, by 2023, the Middle East and Africa region's dairy market is expected to reach US\$21.7 billion (€19.7bn) in value, Indian market research firm Mordor Intelligence has forecast.



Vasco Valença de Sousa, chief innovation officer at UAE-based Jelly Belly Ice Cream, highlights a growing demand for savoury ice cream flavours. Credit: Heba Hashem

Saudi Arabia

Saudi Arabia holds the dominating share of the dairy market in the region, driven by a rising demand for western and fermented dairy products such as yogurt and sour milk, as well as product and packaging innovation, the Bangalore-based research firm has found.

Local dairy industries are expanding in the Middle East in response to this growing demand, according to conference participant Arda Cenk Tokbaş, general manager of HDF FZCo, a subsidiary

The Middle East dairy market is expanding and its consumers are more demanding, so producers must respond. Heba Hashem in Dubai reports



Dubai supermarkets sport a variety of milk and milk products. Credit: Challiyan

of Turkey's Yaşar Group, which owns the Pinar dairy brand. He says the Gulf Cooperation Council (GCC) region (of Saudi Arabia, the UAE, Oman, Qatar, Bahrain and Kuwait) is more than 50 per cent self-sufficient for dairy products today, compared to 35 per cent five years ago. The self-sufficiency ratio is the proportion of total production to total consumption.

"Dairy is the second biggest food category and one of the fastest growing in the region," Tokbaş told the audience.

The Yaşar Group wants to be part of this growth and made its first overseas food investment in Abu Dhabi in November 2019, becoming the first cheese processing plant in the UAE. That factory was established within Yaşar Group's new company HADAF Foods. This first phase of investment, built on an area of 20,000 square metres, is worth approximately US\$30 million (€27.3m).

Yaşar wants this to be a success and Tokbaş stressed that despite growth of the region's dairy market, the industry needs to become more aware of the evolving consumer to overcome the various challenges in making sales in the Middle East.

Casual veganism

One of these is the growth of casual veganism and plant-based milk, a global market that is expected to have generated revenues of around US\$14 billion in 2019, according to Transparency Market Research.

Innovation in vegan food, celebrity endorsements of a vegan diet, and social media promotion of veganism are among the factors that have led to an increase in casual experimentation with veganism, and the Middle East is no exception.

According to another conference participant, Devraj Ghosh, marketing director for the Middle East for FrieslandCampina, today's market, which is increasingly driven by Millennials and Generation X consumers, is seeing more demand for ethically and environmentally responsible products, plant-based alternatives, and lactose-free options. "These are the main consumer value drivers, which are going to impact the dairy industry and value chain," he says.

In 2018, the global average percentage of the vegan population was estimated at five per cent. In North America, this population was around four per cent, and

Middle East

the Middle East is not far behind the global average at three per cent, says Mitesh Rajani, marketing manager for beverages and water at UAE-based National Food Products Company (NFPC), citing research by GlobalData.

“There is a rise in casual engagement in veganism by consumers, and the Middle East, Africa, and North America are regions where this behaviour is more pronounced. The younger generations are at the forefront of this trend; they are inquisitive and explorative and keen to try new experiences,” Rajani says.

Numerous big names have ventured into the plant-based market in the last year as a result. The retail giant Marks & Spencer has launched Plant Kitchen, its first vegan-friendly line, including almond, soya and cashew milks, across its nine UAE outlets; a range of plant-based milks from Italy’s The Bridge Bio and Australia’s Own can be found in Jordan’s online grocery shop Cozmo; vegan deli cheese has become available on the shelves of Carrefour hypermarkets in Egypt and the UAE; and Starbucks throughout the Middle East offers soya milk options.

“This is a trend that started a decade ago but continues to grow. The trend is going to stay and it’s a potential sustainable market,” highlights Rajani.

Toufik Chadil, marketing director for food and refreshments in the Gulf region for Anglo-Dutch food major Unilever, says Middle East dairy consumers are today generally eating healthier – con-

suming lower quantities of dairy but of better quality. “Through 2030, those who are concerned about the health of the planet will likely reduce the frequency of their meat and dairy consumptions and choose products with high ethical and environmental standards when possible.

“Even details of animal feed will be highlighted as a means of delivering transparency, and all-natural, low sugar, organic, non-GMO will be the attributes most associated with healthy foods,” notes Chadil.

Opportunities

Such growing demand for nutritious, ethically sourced and environmentally responsible products certainly offers lucrative opportunities for the dairy industry. For example, dairy products can be excellent delivery systems or carriers for functional and fortified foods, providing health benefits beyond the provision of essential nutrients, according to Srikumar Misra, founder and CEO of Milk Mantra, an Indian agricultural dairy products start-up.

Also speaking at the conference, he says this market is driven by healthy snacking, better breakfasts, nutraceuticals, lifestyle antidotes, such as probiotics for gut health, and trend-mongers, such as turmeric lattes. In this context, the dairy industry should consider addressing the need for fat-free, probiotics, prebiotics, symbiotics, low-sugar, low-salt and high protein products, he suggests.

“In India, the functional food and bev-

erage market is quite a new phenomenon and projected to grow to US\$4 billion (€3.6bn) by 2022, at a CAGR of more than 22 per cent,” Misra says.

In 2015, Milk Mantra launched MooShake, the world’s first milkshake with curcumin extract, which is the active ingredient of turmeric. The company recently received the US patent for this beverage and is now looking at how to use different dairy foods with curcumin as an ingredient.

“In the US, curcumin has become among the top five nutraceuticals being sold. This is an example of how catalysing bioavailability could be an important area for dairy innovation around functionality,” says Misra.

As an industry, dairy companies need to re-imagine how they connect with all stakeholders. They need to be loud and bold about the benefits of dairy and employ functionality as the core of their communication, says the Indian executive: “The need of the hour is to look deep into what the new-age consumer is thinking about – dairy is an industry that impacts hundreds of millions of lives. Eight years ago, we started with seven farmers. Today, we have 60,000 farmers in our network whose lives are significantly impacted. These are the stories we need to take forward to our consumers.”

New shapes and flavours

Industry executives speaking at the event agreed that dairy consumers are increasingly looking to try new shapes, sizes and forms, as well as new ‘fascinating flavours.’

Playing with new textures and shapes captures the attention of experimental consumers seeking exciting new products, they note. This is mostly relevant to cheese and yogurt. A good example is UK-based Yeo Valley’s mango and passionfruit organic fermented kefir yogurt, which targets consumers seeking different rich, creamy flavours and textures in yogurt. This kefir yogurt is available across Carrefour hypermarkets in the UAE.

Similarly, Yogurtland’s creamy hand-crafted frozen yogurt comes in flavours such as French Vanilla. The American international franchise chain has opened three outlets in the UAE since 2014 and one in Oman in 2018. Rainbow Milk by FrieslandCampina, one of the oldest dairy brands in the Middle East, also launched a



FrieslandCampina, one of the oldest dairy brands in the Middle East, launched a new evaporated milk in the UAE last year, Rainbow for Coffee



new evaporated milk in the UAE last year, Rainbow for Coffee, designed to add a rich and creamy texture to coffee.

Another example of innovation in the industry is the UAE-made Al Ain Camelait fresh camel milk, which contains 50 per cent less fat content than cow's milk says the brand. The milk, which has a smooth creamy taste, is available at more than 900 stores across the UAE and Saudi Arabia.

In the cheese category, Dubai-based Balade Farms Food Industries introduced its labneh mini-balls in 2018, bringing a homemade style of the popular Middle Eastern soft creamy cheese to the UAE and Saudi Arabia. The product is available in three versions – the original, with chili, and with thyme.

Sweet and savoury

Consumers are also looking for more experimental flavours in dairy, such as tart and savoury flavours, which is mostly relevant to yogurt and milk drinks. Flavour fusions such as savoury and sweet are thriving, according to Rajani. Cheese has been at the forefront of this trend, by mixing cheese with traditionally sweet dishes as seen in snacks such as cheese waffles and cheesy hot cross buns.

Similarly, in the ice cream segment, there is a growing demand in the UAE for savoury flavours, such as those based on vegetables or made with a combination of sweetness and saltiness, stresses Vasco Valença de Sousa, chief innovation officer at UAE-based Jelly Belly Ice Cream, the Gulf region's first locally made gourmet ice cream brand.

The right package

As well as making innovations in texture and flavour, dairy producers targeting the Middle East today need to look at using more sustainable packaging, given the sector remains one of the largest users of single-use plastics.

Dave Morton, vice president of multi-layer solutions at Canada-based Husky Injection Molding Systems, notes the largest dairy players exporting to the Middle East are all adopting multi-layer PET (polyethylene terephthalate), which can include recycled materials. This includes France's Lactalis, a major player that exports to the Middle East. Other major brands using PET that could inspire similar innovations in the ME include Italy's Parmalat; Granarolo, the second largest dairy producer in Italy; Yili, the largest dairy producer in China, and Jussara, the biggest dairy brand in Brazil, notes Morton.

"Today's best beverage packaging choice is recycled PET – it makes your product stand out, it's sustainable, lightweight, functional, marketable and low cost. It can also be designed for reuse, can be easily recycled, and the raw material has a low-carbon footprint. Moreover, multi-layer PET provides total protection for the most demanding shelf life and blocks 99.9 per cent of light," he explains.

Looking ahead, Tokbaş of HDF FZCo points out that the dairy industry needs to deal with the issue of sustainability, especially when it comes to reducing greenhouse gas emissions, using renewable energy and choosing eco-friendly packaging: "We're getting there, as long as the industry becomes more aware of the evolving consumer," he declares. **Dii**

*<http://www.szwgroup.com/global-dairy-innovation-congress-mena/>

EVERY INNOVATION HAS ITS STARTING POINT



Meeting the twins

Showing consumers that dairy farming is sustainable, while surviving the less than favourable economic situation that all agriculture faces today, are the industry's biggest challenges for 2020 and beyond, says Pekka Pesonen, secretary general of European farming organisation Copa-Cogeca.

Speaking in an interview in his Brussels office, this son of a Finnish dairy farmer, and head since 2007 of Europe's top food producers' organisation, says it is essential for dairy producers to forge and maintain a closer relationship with consumers.

"The general image of the sector is good," he says. "Dairy products are associated with health, even animal health, and welfare."

But with consumers increasingly interested in animal production methods and how they protect livestock welfare, effective communication is essential to show what the dairy industry has done and can do in terms of nutrition and sustainability. Moreover, it is important to demonstrate that their produce comes, for instance, from free-range cows roaming European fields.

Good consumer relations will generate better profits. This is important at a time when, even though dairy farmers are not in crisis, they are facing tough economic metrics. "Like all agriculture, we are struggling, and need assurance that if farmers make investments, they will get premiums from consumers," he notes.

Brexit disruption

For 2020, of course, there is an added complication for European dairy farmers – Brexit. Pesonen states, "We do not like Brexit since it will sever our integrated trading relations with the UK, for farmers and other value chain operators."

It is unclear what will happen to the EU/UK relationship now, at least until after the transitional period to January 2021 when the UK will continue to follow EU rules and will pay into the EU budget. "We would like to keep our trade intact as much as possible, but this is in the hands of the UK," Pesonen says. "We want to keep the status quo and to avoid sudden



Pekka Pesonen, Copa-Cogeca secretary-general, speaking in Brussels. Credit: European Commission

Keeping dairy sustainable and profitable are industry's twin challenges, says Copa-Cogeca head Pekka Pesonen. Liz Newmark in Brussels reports

disruption in the market, as this is crucial for the dairy industry."

Looking ahead, Pesonen says even a post-Brexit UK retained intrinsic dairy market strength, notably in selling fresh produce – milk, cream and yogurt – given it still has fresh milk deliveries. From the EU's side, there would be no lowering of standards, he stresses. He is relaxed about the risk of the EU reducing its dairy production standards after quitting the EU: "I don't see the threat of a UK/US trade agreement leading to GM- or hormone-treated products, and the UK is extremely pushy on animal welfare," he notes.

Opportunities

As for other trading relationships, the current US/China trade war may offer opportunities to increase the EU's dairy exports with both these partners, he says. "However, in the farming sector, it would be difficult to make any long-term invest-

ments," based on poor relations between Washington and Beijing. "The situation remains volatile," he explains, so there is risk, particularly as the dairy industry has narrow margins, he adds.

More permanent is the new market access to Canada. The EU dairy industry has received additional market access, including the right to sell 18,000 tonnes of cheese to Canadians, following the EU/Canada Comprehensive Economic and Trade Agreement (CETA) deal, already provisionally applied. While there are still bottlenecks in its operation, Pesonen says, "We see there are good opportunities in Canada with its consumer market and want to demonstrate the opportunities for new companies to export."

Increased trade opportunities should not result in decreased quality however, he stresses. "We will not be exporting low-value added cheap commodity cheese, but European speciality cheese," Pesonen says.

Turning to the Mercosur/EU trade deal, provisionally agreed 29 June 2019, he argues, “Naturally, at the sectorial level, we see some opportunities for processed dairy products,” although for Copa-Cogeca, which represents all farming sectors, this potential is dwarfed by market access losses in several other sectors such as beef.

As for the current reforms under discussion affecting the EU’s flagship Common Agricultural Policy, Pesonen says it is too early to say if the changes will reduce dairy producer payments – the proposals would reduce handouts to larger farms, and these often include dairy operations. “The CAP process is still ongoing. If we are lucky, we will have a final conclusion end-2021. Any change in distribution of support may have a disruptive impact on agriculture,” he warns.

Other questions include what will happen to the CAP without the UK and how much it will incorporate the new European Commission’s ‘New Green Deal’ programme of environmental reforms, he says. “But dairy will be no worse or better treated. I do not expect any CAP measure to specifically target this sector.”

Reduced emissions

Even if climate change measures are strengthened, Copa-Cogeca is continuing to combat greenhouse gas emissions, working with farmers, he stresses. “We have pointed out that since the 1990s, EU farmers have reduced carbon emissions, using better production techniques and a better feed ratio: cutting overall GHG emissions 20 per cent, by increasing output by 25 per cent.”

Snowbound farm in Mettälä, southern Finland - Copa-Cogeca’s Pekka Pesonen was previously state secretary (the top official) at the Finnish ministry for agriculture and forestry. Credit: Dave S



He says in the dairy sector, “This is particularly the case because of high-yielding animals, where milk volumes remained stable or even increased, with dramatically reduced numbers of cows. You can argue, at least to a certain extent, that we have decoupled environmental impact and production growth.”

Copa-Cogeca also promotes new technology – for example, automatic milking machines. These will increase competitiveness and improve working conditions (helping dairy farmers take holidays, for example). But Pesonen stresses that while technology, “is a precondition for any future success,” it must be part of a wider range of production changes. As an example, milk robots were not “one single technology advance, but more of a

combination, fitting into farmers’ individual conditions, capabilities and access to the market.” There is a threshold where 60-180 cow herds benefit from automated robots. Gains diminish for larger farms, he notes.

Consumer preferences was also crucial. “With technology, farmers can get a better salary,” he says – but given the competitive market, would consumers be happy to finance these healthier profits, or drive prices down, because technology delivers cheaper milk?

Again, sustainability and economics are key. In the 1980s, in Pesonen’s native Finland, the average cow herd size was eight. Now it is 45 and growing fast. The UK has one of the biggest European average farm sizes with 100-plus, Pesonen adds, but already face constraints from concerns about agro-industry waste, he says, citing the rejection of plans to build a dairy farm with 8,000 cows in Lincolnshire. “We are confident that dairy will be there in the coming years and have a good future, but what kind of dairy?” Pesonen asks, conscious of the pressure from consumers to buy milk from free-range farming and free stalls.

However, he comes from dairy farming stock. “I still remember all our cows’ names as I named them myself,” he recalls. He then studied dairy at university and worked at Finnish dairy Valio. Ultimately, “Dairy is sexy,” he says with a smile. “I know of very few other sectors that are so dynamic.” **DII**



Copa-Cogeca’s Pekka Pesonen, left, meets Karmenu Vella, outgoing EU Commissioner for the environment, maritime affairs and fisheries. Credit: European Commission

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Pumps move a lot



Formerly, it was often possible to allow liquids to flow through a plant by gravity. Nowadays, they are forced through long pipelines with many valves, through heat exchangers, filters and other equipment which often have high pressure drops. The flow rates are frequently high. Pumps are used in numerous parts of a plant, and the need to have the right pump in the right place has become increasingly important, according to equipment manufacturer Tetra Pak.

Typical dairy pumps are the centrifugal, liquid-ring and positive displacement pumps. The three types have different applications. The centrifugal pump is the type most widely used in dairies. The centrifugal pump is mainly used for low-viscosity products, but it cannot handle heavily-aerated liquids. The liquid-ring pump is used when the air content is high. The positive displacement pump is used for gentle treatment and high viscosities.

The pump should be installed as close as possible to the tank or other source from which the liquid is to be pumped, and with as few bends and valves as possible in the suction line. This should have a large diameter in order to reduce the risk of cavitation.

Any throttling valve must be fitted in the delivery line, possibly together with a check valve. The throttling valve is used to adjust the flow rate of the pump. The check valve protects the pump and prevents liquid from flowing back when the pump has stopped. Normally, the check valve is situated between the pump and the throttling valve.

Cavitation can be detected by a crackling sound in the pump. It occurs when the pressure drops locally below the vapour pressure and small vapour bubbles form in the liquid. The pressure increases

Demands on the quality of products, and the profitability of manufacturing processes, have grown steadily heavier over the years, according to manufacturers

as the liquid continues further into the impeller, and the vapour condenses very rapidly. The vapour bubbles collapse at a very high velocity and at a local pressure, which can be as high as 100,000 bar. This is repeated with a high frequency and can cause pitting damage to the surrounding material, particularly if it is brittle.

Cavitation occurs when the pressure in the suction line is too low relative to the vapour pressure of the pumped liquid. The tendency to cavitate increases when viscous or volatile liquids are pumped. This results in reduced head and efficiency. As cavitation increases, the pump gradually stops pumping.

Cavitation should be avoided. However, should the pumping conditions be very difficult, and the pump cavitates slightly but is otherwise operating well, it is still possible to use the pump. This is because dairy pumps have impellers of acid-proof steel, which is very resistant to wear.

New equipment

Meanwhile, companies such as Seepex have developed a hygienic progressive cavity (PC) pump that has achieved EHEDG certification. The EHEDG pump is the latest addition to the Seepex's range of hygienic PC pumps which are used wherever thin to highly viscous, shear sensitive products and those containing soft solids need to be transferred. Food processors have to ensure that product quality and viscosity can be maintained throughout processing and packaging.

Traditional pumping systems can have

a detrimental effect on the quality and texture of some dairy products, particularly yogurt, with shear stresses changing the product consistency by shear thinning, producing a 'thin runny' product.

Additives can be used to preserve or restore product quality changes. However, progressive cavity pumps using gentle, low shear action, and the ability to handle soft solids without damage and minimal pulsation flow rate can also be useful.

Traditionally, twin screw or lobe pumps are used to handle products such as yogurt after the fermentation stage, when the product has set. The running clearance between the screws or lobes results in backflow— also known as 'slip' — and this is the main cause of shear-thinning which, in the case of yogurt production, can cause breakdown to a runny, thin product. The higher the pumping pressure, for example through heating or cooling equipment, the more this slip increases.

Seepex's design enables the product to move through the pump in a series of cavities. These cavities are not compressed or distorted in any way, creating a gentle, non-pulsating flow. This 'non-slip' action preserves the quality of shear-sensitive products such as yogurt. Additionally, minimal pulsation action creates a smooth laminar flow through pipelines and ensures a constant feed through heat exchangers, minimising mechanical stress and product thinning. [Dii](#)

For further information visit www.tetrapak.com or www.seepex.com

How to stop bubble trouble

The dairy industry relies heavily on pumps to transport raw and processed product from place to place, as well as water and cleaning solutions. If a dairy facility finds that it is frequently experiencing pump system failures, or having to replace equipment more often, it can be easy to place the blame on the pump manufacturer. However, in many cases the culprit could well be cavitation.

Cavitation is generally bad news for dairy producers, and its effects can have a severely negative impact on the performance and lifetime of pump systems. However, variable speed drives (VSD) may be used to combat it.

What is cavitation?

Cavitation was first identified in the late 19th century when it was noticed that rapid propeller speeds on ships would create areas of low pressure behind the blade of the propeller, in which bubbles or voids would form. As the bubbles travelled past the propeller, they reached areas of high pressure. This would cause the bubbles to quickly implode, sending out shockwaves. As well as impairing equipment performance, it became clear that the cumulative effect of these shockwaves over time was enough to cause serious damage to the propeller's metal surfaces.

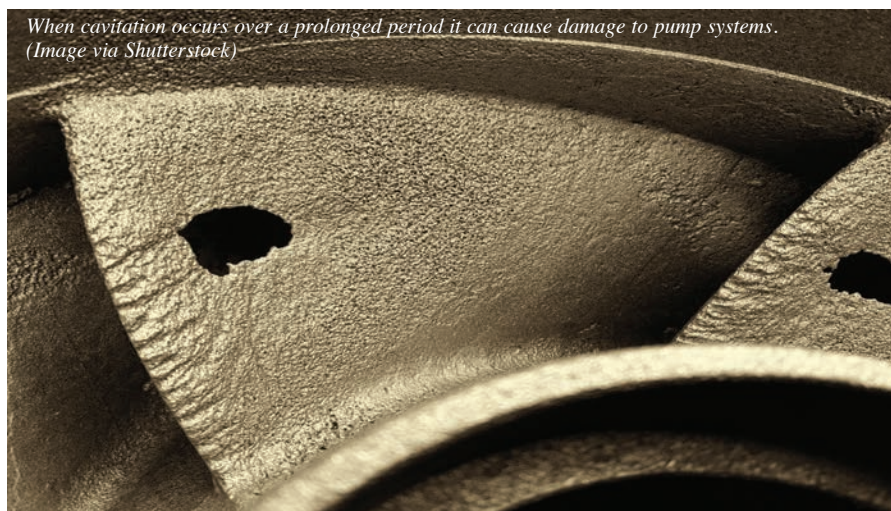
Why cavitation needn't spell bubble trouble for your pump systems, according to Andrew Bould

Cavitation can also occur in pumps. A pump impeller creates a vacuum on the suction side/inlet of the pump. If the vacuum gets too large or if the pressure is too low the water starts to boil and transforms from liquid to steam. When these steam bubbles reach areas of high pressure, they collapse back into a liquid state again, producing a shockwave. While each individual shockwave may be relatively small, when they occur in copious amounts over a prolonged period, they can cause erosion to impellers, and damage to the rest of the pump system.

Cavitation can also be caused by air getting into pipelines, or backflow where a tank is filled to capacity, yet the pump is still pumping. It is a significant cause of wear, shortening pump lifetime by up to half. Due to the high number of pumping applications used throughout the production process, dairy processing facilities are especially prone to problems associated with cavitation. It can lead to higher costs due to maintenance and production losses. As well as affecting pumping equipment, it can also damage milkfat globules, resulting in reduced product quality.



VSDs from manufacturers such as ABB can now also be used to prevent cavitation by using built-in, anti-cavitation software



When cavitation occurs over a prolonged period it can cause damage to pump systems. (Image via Shutterstock)

How to prevent it

Cavitation has many symptoms, but if pumps are operating with unusually decreased flow or pressure, if there are unexplained vibrations, or if the pipeline sounds as if there are small rocks passing through it, then cavitation could well be the cause. If cavitation occurs unchecked it will eventually cause seal and bearing failures, and eventually the impeller will show tell-tale signs of erosion and need replacing.

For liquids with a viscosity of 1 (eg, milk under normal handling temperature), there are two common ways to avoid cavitation. One is to mount a pressure sensor at the inlet and monitor the actual pressure and stop or reduce pump speed if low suction pressure is detected. This typically requires the use of an additional PLC or similar.

The second solution utilises equipment already used throughout many dairy facilities. VSDs are typically used to control the speed of pumps and motors, providing provision control while dramatically reducing energy consumption.

VSDs from manufacturers such as ABB can now also be used to prevent cavitation by using built-in, anti-cavitation software. This function uses algorithms to look for specific patterns in the motor and drive operating data, and automatically reduces pump speed to reduce the risk of cavitation. The algorithm is based on measurement of pump torque and speed, comparing results with normal torque and adapting accordingly to slow down the pump, prevent it from increasing speed, or stop the motor from running.

The key benefit for dairy producers is that the drive can automatically solve cavitation in real-time, as it can pick up any potential flow issues immediately from changes in torque on the shaft. Because the drive is measuring directly from the shaft there is no need for additional sensors, while reaction times are quicker as there is no need for interface with an external controller meaning no network lag. No extra components are needed for the drive nor is any additional installation work required as the software is already pre-packaged within the drive. By varying the speed of the pump to reduce the risk of cavitation, it can also allow the process to continue, whereas traditional systems may have stopped the process altogether once cavitation or low suction pressure was detected.

The effects of cavitation can take time to manifest themselves. Rather than immediately destroying equipment, it will chip away gradually over the course of months or years. Nevertheless, the costs of having to more replace pump systems more frequently than usual, and the associated risk of downtime, can make it

a serious nuisance for dairy producers. With VSDs now providing the functionality to detect and prevent it before it can cause any damage, pump lifetimes can be extended without the need to necessarily buy any additional equipment. **DI**



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Compressing the issue

Compressed air is a vital resource for the food and drink industry, but unless proper precautions are taken, it can also be a major source of contamination. If a product is contaminated in any way then it cannot be sold, and a significant threat to the purity of food and drink products is compressed air, a critical utility in a wide variety of applications, including product handling, bottle filling and packaging, among others.

The contamination of compressed air can slash productivity, lead to the loss of products, product recalls, and can even necessitate the complete shutdown of a production line for cleaning and re-validation. When excess oil is present in a compressed air system, it can also have an adverse effect on the machinery. Food that is contaminated with oil, meanwhile, will have a bad taste and odour, can look unappealing and can make consumers seriously ill. It can also generate some bad headlines.

Oil can be introduced into a compressed air system from a variety of sources. Lubricating oil helps to reduce metal-to-metal contact between the compressor's rotor or helicoidal screws and the cylinder housing, helping to minimise wear and damage to these components. Compressors that are overheating, however, can vapourise this oil.

The amount of oil vapour released depends on a number of factors, including condition of the machine and how regularly it is maintained, the condition of the coalescing and filters, and whether parts that have been fitted have been recommended by the original equipment manufacturer. Other risk factors include the compressor oil age, whether the correct oil is being used and whether secondary filters have been fitted.

Failure to maintain and regularly replace filters will increase the risk of contamination. For these reasons, companies often specify the use of oil-free compressors in the belief that they guarantee oil-free compressed air. Oil vapour can also be found in the air that we breathe, however. Ambient air contains anywhere from 0.05 mg/m³ to 0.5 mg/m³ of oil vapour and these figures can be higher in



Oil contamination can be a problem for the food and drink industry from compressed air, says Mark Whitmore

dense, urban and industrial environments.

The quantity of oil vapour in ambient air may seem negligible, but when this air is compressed, the contaminants within it are concentrated. To generate one cubic metre of compressed air, the compressor must draw in many cubic metres of ambient air, and the higher the pressure to which the air is compressed, the higher the concentration of contamination.

Further, many people neglect to work out how many cubic metres of air their compressor is delivering into their distribution piping system per hour. As the air exits the compressor and enters the piping system, some of the compound within it will cool, condense and form as liquid oil and aerosols, while others will remain as oil vapour. Air compressors operate constantly, drawing in air and adding to the concentration.

Finally, oil-free compressor installations frequently do not include purification equipment downstream for the reduction of oil. Be it in a liquid, aerosol or vapour form, it could still contaminate products.

Regulations

Tests for oil-based contamination in a compressed air system tend to be split into those for oil aerosol and those for oil vapours (with the results combined to determine the total concentration of oil present). BCAS Food and Beverage Best Practice Guide 102, meanwhile, divides specifications between direct, and indirect contact. For direct contact with products, the total concentration of oil in compressed air should be less than or equal to 0.01 mg/m³. If compressed air is used

indirectly with products, the total oil content can be less than or equal to 0.1 mg/m³.

Each individual manufacturer should perform a risk assessment and understand their product to determine the appropriate purity for their compressed air.

Many food manufacturers attempt to prevent oil contamination by using oil-free air compressors. Although this is an excellent way to reduce the risk of oil contamination, this does not remove the possibility of oil contamination altogether, as compressed air will still need filtration and testing. Further, making the switch from a traditional compressor to an oil-free alternative will not remove oil already present in piping systems. It also represents a significant capital investment.

Paired with frequent maintenance, adequate filtration is vital to remove oil contamination from a compressed air system. System operating manuals provide projected lifespans for filters and it is critical that they are changed at the appropriate intervals. It is also important to ensure that an appropriate grade of filtration is applied.

Another way to protect from contamination is to use food-grade oil in the process. For many manufacturers, this is not a cost-effective solution. Traditional industrial oil only needs to be changed once or twice a year, while the food-grade version may need to be changed more often, making it more expensive. **Dii**

Author: Mark Whitmore is general manager at BOGE Compressors. Web: uk.boge.com/en



What's next for farmers

UK dairy farm profits declined in the year ending March 2019 amid falling demand for liquid milk, so there were understandable concerns as Britain exited the European Union (EU) on 31 January, starting a 12-month countdown to its practical exit from the EU Common Agricultural Policy (CAP). Faced with possible falls in farm subsidies as a result, to get things right in the country's 14 billion litre annual output milk producing industry, there is an urgent need to "farm differently" over the next ten years, a UK dairy industry expert warns.

As of now, "the UK dairy sector model is broke and will be changing," says John Allen, from Stafford-based dairy consultancy Kite Consulting. Currently more than half of British milk suppliers are getting prices 10% below AMPE (actual milk price equivalent) prices. Similar concerns were raised by agricultural consultants, the Farm Consultancy Group, in a survey entitled, Milk Cost of Production Survey for 2019.

Even worse is the falling demand for liquid milk in the UK. It has been declining by around 1.5% per year, equivalent to 70 to 80 million litres annually, Allen says, quoting from the Kite Consultancy report, *The Future of the Liquid Milk Processing Sector*, June 2019. Indeed, on a 'per capita' basis, consumption has fallen by 26% since 1998, from around 120kg per person to 95kg today.

This annual volume decline is equivalent to the capacity of one medium-sized liquid dairy every three years and one large factory every six years. Allen faults the sector for not reacting fast enough to the falling market. Undoubtedly, "there is

UK dairy farmers have left the EU amidst tight profits and declining milk consumption, Poorna Rodrigo says

inevitable inertia in an over-supplied market, as competitors seek to out-compete each other to survive," he says.

Now with UK's departure from the EU – its biggest dairy export customer – there is uncertainty over future trade. Dairy UK's communications manager Sophie Clarke says a trade deal with the EU is needed swiftly with the "least disruption possible." She says the association is looking forward to "working closely with the government to ensure that the dairy sector can thrive in the post-Brexit trading world." As regards future UK free trade agreements with non-EU countries, "We look forward to the opportunities these may bring, but we would seek to maintain our current high standards."

Fortunately, according to the Farm Consultancy Group, 2020 looks promising so far. The losses of 2018-19 are projected to improve for this year ending March 2020, pulling the sector back into the black, with the cost per cow forecast at £2,218 (€2,632) as against an income of £2,227 (€2,642) per cow.

Nevertheless, some issues need addressing. According to Allen, "The biggest threat to dairy farming in the UK today is environmental. Amidst growing veganism and concerns over animal welfare, consumers are changing buying habits as they become increasingly concerned about the environmental impact of livestock farming, and dairy farming in particular." Therefore, he urges the industry to "rapidly and proactively address this challenge to avoid a situation where

there is a paradigm shift in consumer demand for dairy, or where legislation makes dairy farming difficult in the UK."

Improving emissions

The UK dairy industry already has the capacity to reduce greenhouse gas emissions by 30% by the year 2030, by adopting new technologies and upskilling high-quality workers, Allen notes.

To achieve this, increasing yields per animal and reducing livestock head is key, he says. Increasing the average yield per cow from 7,968 ECM (Energy Corrected Milk – milk produced adjusted to 3.5% butterfat and 3.2% protein) litres in 2019 to 11,080 ECM by 2030, along with improved genetics, management and feed efficiency would effectively remove over 520,000 animals from dairy production in the UK and a similar number of calves, he says. "Such a herd reduction will contribute to global cooling as cow numbers fall and methane emissions drop."

Fundamentally, the UK is a good place to produce milk. "Our geography and infrastructure count in our favour. Our temperate, wet climate makes the UK an ideal place to grow the high-quality forage that can drive our systems. What's more, UK dairy producers are innovative, having learned to live with uncertainty and challenge as a result of a volatile milk market over the past decade. They have shown themselves to be resilient, open to new ideas and adaptable." They may need these qualities as they face a future without the supports of the EU's CAP. **Dii**

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Vepo Cheese in The Netherlands recently upgraded all of its production lines with a new incline layout from Fortress

More cheese please

With a high rate of automation in its two Dutch cheese factories in Bodegraven and Oudewater (close to Gouda), Vepo Cheese prides itself on production efficiency. Slicing, grating, cubing, portioning and packaging millions of kilograms of hard cheese a year, the third-generation family business recently upgraded all of its production lines with a new incline layout consisting of seven Interceptor metal detectors from Fortress Technology. Having replaced its obsolete metal detectors with a used Fortress unit three years ago, Vepo was looking at the Oudewater site's needs, with high performance, future proofing and an independent reject system on each line important criteria.

Approaching Dutch manufacturer Jansen Control Systems to design the compact incline inspection lines, each integrated with a vertical packaging machine, Vepo first examined the Stealth machine. But then Jansen's managing director Gerard Schuurman explained the increased sensitivity of the Fortress Interceptor, and the advantages for cheese applications.

Recalling his conversation with the

Inspection efficiency on the incline at Vepo Cheese's automated cheese factory

cheese giant, Shuurman explained how these variations in density combined with the product effect could react in different ways in the magnetic field of a traditional food metal detector. "Not addressing product effect can lead to higher product waste. Vepo wanted to introduce a more failsafe solution at its Oudewater facility and so wanted a metal detection solution

that could increase the inspection pace in order to keep up with the growing production demands."

Best solution for cheese

Explaining how the Interceptor machine works, Fortress European managing director Phil Brown comments, "For many years, inspecting wet products has



The automated reject system enables the cheese factory to isolate rejected packs without interrupting the production flow

presented cheese makers with a number of challenges. Water, like metal, is conductive. And cheese is inherently a wet and conductive product that also contains mineral content like salt. Accurate detection also depends on the size, shape and orientation of metal particles.”

The Interceptor overrides the propensity of ‘wet’ product effects that can drown out the signal, in particular the signals caused by a stainless steel contaminant. Software algorithms make this possible by distinguishing between signals specific to the product and those that flag up anomalies. By singling out low-frequency signals, the Interceptor leaves the signal from stainless steel more readily identifiable in the higher-frequency range.

As a result, the system can pinpoint metal fragments with dimensions half those detectable with the previous generation of equipment, with greater reliability. The result of separating these two readings is any metal signal as a result of a genuine contamination isn’t swamped by product effect.

Maintaining efficiency

The ability to isolate rejected packs without interrupting the production flow was also important to Vepo. On previous inspection lines, Vepo didn’t have an automated reject system. If a contaminated pack was identified the belt would stop and an operative would have to intervene, remove the pack and restart the inspection process. For a busy fully automated processing and packing facility, this business interruption impacted productivity.

Reaffirming the importance of automation efficiency, Hugo van Put, technical operations manager at Vepo, comments: “The automated reject system also gives us 100 per cent control over production. There’s less human involvement, and therefore less risk of human error. This also lowers the risk of a metal contaminant slipping through the safety net. From an efficiency perspective, continuous production is one of the main benefits.”

On the incline

In order to keep the footprint small and for smooth, seamless production, Jansen developed an incline conveyor that could be integrated with the Interceptor metal detector, vertical packing system and periphery equipment. Logistically, it was quite an engineering challenge, Shuurman explains.

Other features comprised an easy to clean conveyor belt and a robust easy-to-empty bin trolley that could stand up to the weight of heavy packs dropping in. All of the inspection lines were installed within a day, ensuring minimal loss of production time. “The Jansen team worked extremely closely with Vepo’s technical and quality managers to ensure the systems were thoroughly tested in order to guarantee a smooth installation,” notes Schuurman.

Measuring just one metre at its widest point and just under three metres in length, Jansen also combined two conveyors into one, which helped to reduce the number of controls. Within two hours of installation per line, the factory was running at full capacity, accurately inspecting large quantities of grated cheese bags per shift. Noting that the implementation went smoothly with training support, van Put adds that false positive rejects have also fallen since the systems went in. “Fortress metal detectors are sensitive. This helps us to feel confident that the risks of contaminants are minimal, with less chance of a food safety issue. Having the double readings within the Interceptor system also lowers the risk of false positive rejects, which saves on food waste.”

Total traceability

Another advantage of the newly integrated packing system is processing transparency. Each metal detector features the firm’s contact reporter software. Data from each packaging line is collated in a common collection system, enabling

quality assurance and production leaders to monitor processing and inspection performance from a centralised location.

This automated record keeper developed by Fortress also helps the factory to keep track of and record logs for rejects, tests and process settings. Van Put comments: “Because we now have identical systems, the cost of maintenance and spare parts is lower.”

Brown adds, “Jansen’s installation at Vepo showcases how technology can boost productivity and efficiency. Historically, metal detection systems had too many moving parts, and outcomes represented only incremental improvements in the trade-off between increased sensitivity and excessive false rejects.

“Only recently, with the introduction of the Interceptor range, have software algorithms that analyse signal data caught up with the potential value of both low and high frequency signals,” Brown notes. “Today, metal detection systems can hold their own against x-ray inspection systems in some of the toughest contamination challenges, while retaining an affordable capital cost and cost of ownership.”

Commenting on the installation, which went live in August 2019, van Put concludes, “As an owner managed business we operate a modern and highly automated cheese production plant. Efficiency is integral to our production process. The two teams understood exactly where we are coming from in terms of balancing product quality and enhancing operational productivity.” [Dii](#)



To maintain a high level of automation, Jansen Control Systems developed the incline conveyor to be fully integrated with the Interceptor metal detector, vertical packing system and periphery equipment

Evolutionary profiles of mozzarella and vegan products during shelf-life

The cheese market involves different product types, ranging from normal cheeses (animal milk) to processed cheeses. The introduction of vegan “cheeses” made from starch, water, vegetable fats and other food additives, has modified the situation when looking at chemical and microbial performances during shelf-life.

A preliminary study has been carried out for mozzarella cheese and a vegan cheese-like preparation (vegetable fat: sunflower oil). Four lots were examined at the production date and each 15 days until supposed expiration times at $2 \pm 2^\circ\text{C}$ (mozzarella cheese: 45 days; vegan: 90 days) with relation to moisture (internal thermogravimetric method), fat matter (norm AFNOR NF V04-287) and pH (with a calibrated pH-metre). The contents of coliforms (AOAC 991.14) and yeasts and moulds (ISO 21527-1:2008) were evaluated at the same time. All measures have been performed two times for each sample. Each 500g sample has been stored at $2 \pm 2^\circ\text{C}$. Mozzarella cheese samples have been presented for analysis for each lot (total: four lots). All samples have been subdivided in two parts, and analysed. The same system has been used for the vegan “cheeses”.

Introduction

The cheese market offers many different products, including: real cheeses, cheese-line products such as melted, processed or analogue, and non-animal products.

Real cheese may be dried or in other forms. With cheese-like products, the main reason for the importance and the increasing diffusion of these cheeses is apparently the declared deficiency of raw materials in certain geographical regions. However, the economic evaluation of these productions has to be considered



Moawiya A. Haddad and Salvatore Parisi explain their study of mozzarella and vegan cheese-like preparations

carefully: the cost of normal cheeses, based on milk, is sometimes judged high if compared with market needs. On the other side, processed/melted/analogue cheeses, based on the use of pre-existing cheeses mixed and melted with butter, caseins, additives, and vegetable oils if requested, are economically cheaper than real cheeses. Also, the nature and formulation of these products can be adjusted depending on the final use, normally an industrial processor, and with relation to the elimination of possible allergens.

In this, the final user is not the average consumer, but the industrial company using cheeses for subsequent working purposes: drying, slicing, dicing, and melting on non-cheese products (the production of chilled pizza preparations is one of the most important channels when

looking at mozzarella-like cheeses).

The production of good or excellent cheese-like products relies on fusion strategies. Analogue cheeses contain “old” (and hard enough) cheeses with a small amount of optional components (butter, vegetable oils, colourants, additives for melting or acidity control purposes, etc.).

In addition, processed cheeses, with or without vegetable oils, have interesting durability values if compared with their original models. It has been reported that mozzarella-like cheeses with vegetable oils can have some additional months at low storage temperatures if compared with traditional mozzarella cheeses, and the same thing can be seen at higher storage temperatures. The additional advantage of higher shelf-life values can be important for food processors.

From a technological viewpoint, shelf-life performances of foods and beverages are related to the typology of food product, similar to a 'fingerprint'. In this area of study, durability might be used for identification and classification aims, although two or more similar cheeses may have the same shelf-life performance. Consequently, it should be admitted that shelf-life may be considered as a performance indicator for edible foods.

The growth of vegan

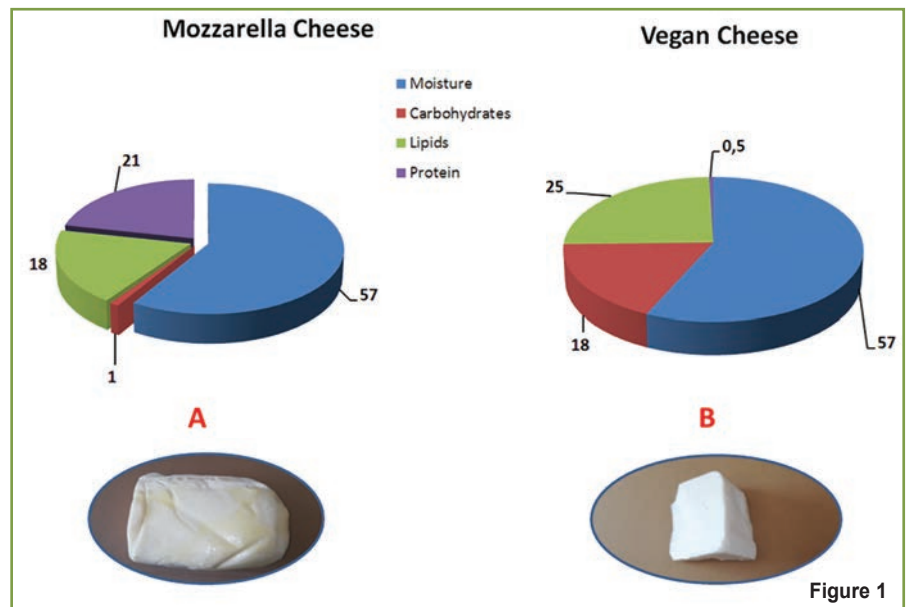
In recent years, the diversification of market products has progressively matched the desire for non-animal products: vegetarian or vegan foods and beverages. With relation to milk-based foods, the introduction of vegan "cheeses" obtained from starch, water, vegetable fats, and other food additives, has modified the situation when speaking of chemical and microbial performances during shelf-life periods at $2 \pm 2^\circ\text{C}$.

Vegan "cheeses" cannot contain raw materials derived from animal sources. The chemical and nutritional profile of vegan products is expected to be different when compared with real cheeses and cheese-like products. In detail, the general formulation of vegan "cheese" does not generally rely on vegetable proteins able to absorb notable water amounts. This behaviour is well exhibited by milk casein, a protein mixture able to absorb more than three times its weight in water.

Consequently, the role of casein as a high-absorption agent for water has to be considered for different chemical compounds or mixtures. The best substitute is generally considered starch because of its hydrophilic behaviour and the capability of absorbing notable aqueous quantities on condition that co-stabilising agents such as thickening, gelifying and stabilising molecules (guar or xanthan gum).

The fat component of such a product cannot be derived from animal sources. Consequently, the use of vegetable fats – palm, coco, sunflower oils, etc. – is requested, while processed cheeses can be realised with similar fats with the additional aim of reducing the final price. The appearance of these products should recall in mind the nature of normal cheeses without the use of animal milkfat.

As a consequence, the chemical profile of vegan "cheeses" is completely different from normal cheeses or cheese-like products. Figure 1 (above) shows a



comparison between a mozzarella cheese on the left (A), and a vegan preparation with the same oil on the right (B). Please note that the high-aqueous absorption role of casein (protein) in A is assigned to starch in B. As a consequence, the chemical composition of vegan "cheeses", dry residue, is completely directed towards the abundance of carbohydrates (starch) and fat matter (vegetable oil). On the other side, normal (and processed) cheeses have a clear predominance of casein and fat matter, while carbohydrates are extremely reduced and generally negligible (on dry residue).

The role of water – the solvent agent in cheeses – is critical because of the following: (1) to reach a 100g amount given a defined quantity of non-aqueous compounds on the one side, and (2) to give a certain texture and compactness to the final product (if requested). It has to be noted that subsequent re-working operations on cheeses might require high meltability and adequate viscosity of melted products at 350°C and higher temperatures. As a result, the aqueous amount has to be defined carefully.

With the study, the need of defining improved durability values for selected vegan "cheeses" has suggested the comparison between a normal cheese and its analogous version without animal-origin raw materials. The durability should be studied at a well-defined temperature, probably agreed among the producer and the food processor.

Because of the existence of studies concerning the durability of mozzarella cheese at $2 \pm 2^\circ\text{C}$, this study has consid-

ered the possible use of a similar food and the analogous vegan product in the same storage conditions.

The comparison considers not only the mere definition of commercially-binding shelf life values, but also chemical and microbiological parameters for a correct definition of durability. The definition of shelf-life has to take into account the needs of the food processor when speaking of good preservation, absence of microbiological risks, absence of chemical defects and organoleptic failures, and possibility of re-working operations several months after production.

Results

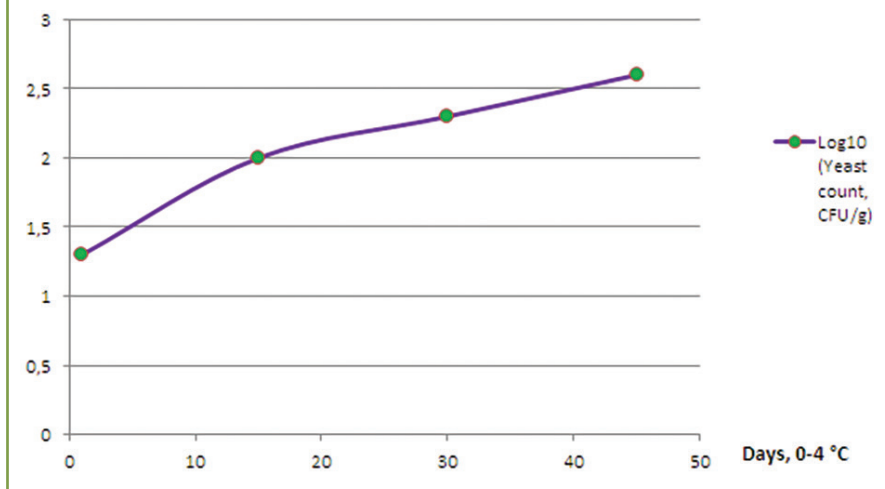
With mozzarella cheese (0-45 days), moisture increased in general as average values, according to the results. In detail:

- Initial moisture values were 52% for mozzarella samples (average value), but the progression determined augmented until 54.6% at 45 days
- The pH increased from 5.98 at 24 hours after production to 6.24 after 45 days at $2 \pm 2^\circ\text{C}$ (average values)
- Fat matter decreased from M01 to M04 (17.5 to 17%)
- The total count of presumptive coliforms increased from 10 (M01 samples, average values) to 220 CFU/g (M04)
- Finally, a good increase of yeasts (from 20 to 400 CFU/g) with no moulds was observed from 24 hours to 45 days at $2 \pm 2^\circ\text{C}$ (average values).

Meanwhile, vegan "cheese" samples (0-90 days) showed different behaviour:

- A slight increase of moisture (52.4 to

Figure 2 Mozzarella Cheese at $2 \pm 2^\circ\text{C}$ (0-45 days): Yeasts VS days



53.8%) was observed from V01 to V07 (average values)

- pH values increased (5.51 to 5.82) in the same conditions
- Fat matter remained substantially constant from V01 to V07 samples, although these samples tended slightly to apparently lose fat micro-drops on surfaces (all samples are vacuum-packaged)
- Presumptive coliforms remained absent in all samples from V01 to V07
- Moulds remained in all samples from V01 to V07
- Finally, a notable increase in yeast counts was observed from V01 to V07 (average data). Substantially, the initial count (60 CFU/g) constantly increased until 870 CFU/g after 90 days at $2 \pm 2^\circ\text{C}$.

The durability of mozzarella cheese was good until 45 days. In particular, coliforms and yeasts were supposed to grow from 0 to 45 days under refrigerated conditions. Moisture and pH augment (+2.6% and +0.26 respectively) were in good correlation with microbial spreading, while fat matter was not modified apparently. Consequently, no particular surprises were observed with mozzarella samples. It should be noted that coliforms are proteolytic life forms, using carbohydrates and proteins to survive, on condition that a good amount of bioavailable water is present.

On the other hand, vegan “cheese” showed excellent performances when speaking of chemical profiles: moisture increased slightly during 90 days (+1.4%) versus +2.6% in M samples after 45 days only. The pH had a +0.31

augment on average after 90 days. No variations were observed when speaking of lipids, although a peculiar defect of vegan “cheeses” was observed in these conditions: many samples tend to give off microscopic drops of sunflower oil from surfaces with the concomitant reduction of inner volumes because of density increase into the samples. Consequently, the adherence to plastic packages may appear unsatisfactory after several days (in average, observed defects appear after 45 days). Moreover, many samples tend to show worrying fractures on surfaces as the result of inner collapses.

By a microbiological viewpoint, coliforms and moulds appear completely unable to spread in all samples, probably also because of good manufacturing practices and sanitisation procedures at

production. However, ubiquitous yeasts seemed to be enhanced during storage under refrigerated conditions: the initial log count was only 1.8 in average, but data at 90 days were alarming enough: 2.9 log units. These concerns may be important because of two facts, although it has to be considered that 90 days may be a good deadline for these products.

Yeast spreading is expected in mozzarella cheeses, showing similar behaviour under refrigerated conditions until 45 days (Figure 2). However, vegan “cheese” is supposed to exhibit higher hygiene expectations. Consequently, industrial needs apparently demand more than three-month durability for these products. The increase of yeasts seem to be a disadvantage in this situation.

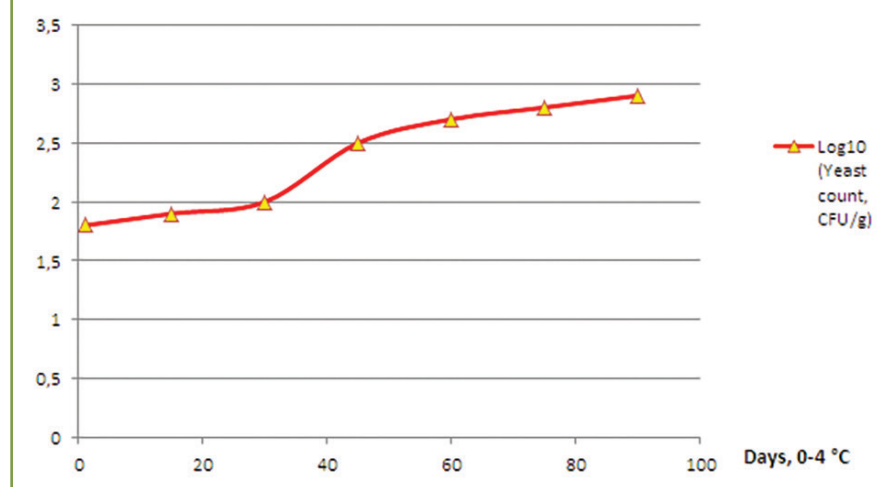
Moreover, the microbial spreading by yeast in vegan “cheese” (Figure 3) does not rely on proteins. Yeasts preferentially use carbohydrates, and vegan “cheeses” contain high amounts at the beginning. Consequently, the increase of these life forms in similar product has to be expected, as vegan products are not real cheeses, unless some countermeasure is used. [Dili](#)

Authors:

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For references and full tables, please email Salvatore Parisi: drparisi@inwind.it

Figure 3 Vegan Cheese at $2 \pm 2^\circ\text{C}$ (0-90 days): Yeasts VS days



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www.nordicdairycongress.com

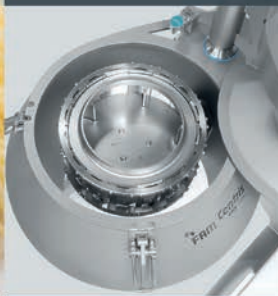


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A full-on Foodex

The top priorities for the processing, packaging and logistics industries include smart automation and ‘industry 4.0’ at Foodex. However, equipment is not the only focus, as the show is made up of five shows: Foodex, The Ingredients Show, the National Convenience Show, the Food & Drink Expo, and the Farm Shop and Deli Show.

That’s not to say indulgence will not be permitted. Over in the Food & Drink Expo portion of the show, LiQ for example, will be offering tastes of its amaretto cookie crunch ice cream on Stand FF280. It is described as “a rich ice cream with white chocolate, freshly baked almond cookie crumbles and a generous slug of amaretto. Smooth. Creamy. Smokey. And a little naughty.”



Meanwhile, at the Farm Shop & Deli Show, Fen Farm Dairy on Stand L149 will offer its Baron Bigod cheese, which is a creamy, white bloomy-rind cheese handmade on the farm from its own raw Montbeliarde cow milk. It has a smooth silky texture and a golden curd, with warm earth, farmyard and mushroom flavours. Baron Bigod is the only traditional raw milk Brie-de-Meaux style cheese produced in the UK, according to the dairy.

On stage

The show will also feature a centre stage, which will welcome debate and interactive masterclasses featuring speakers from across the industry. Issues such as the plastics debate will be looked at. In the session, NGOs and retailers will set out how they believe the grocery industry should make the transition to a low/no-waste future.

Other presentations during the three-day event will include sports nutrition, nutrient-dense fats, artificial intelligence, nutritional products for seniors and decoding what the Gen Z consumer wants.

Foodex, the UK show for processing, packaging and logistics is set to land at Birmingham NEC 30 March-1 April



Here is a roundup of some of the exhibitors at the show:

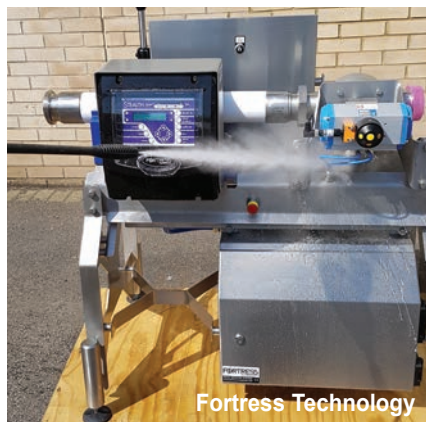
EQUIPMENT

Fortress, Stand P191

Fortress Technology is exhibiting three systems designed to flex to changing demographics and eating habits. All Fortress inspection machines have been designed to help dairy manufacturers keep pace with emerging trends.

Visitors will be able to see equipment for different SKUs, as well as reducing waste, product giveaway and eradicate false rejects. Among the line-up will be a hygienic range of gravity fed, horizontal conveyor and pipeline metal detectors.

Fortress managing director Phil Brown says, “Each type of product has different conductive properties and therefore behaves differently in a metal detector. And if each item is individually wrapped, then the overall packaging will be thicker, and sensitivity might be affected. Fortress metal detectors can run multiple frequencies simultaneously and the machines can accurately inspect a variety of conductivities at the same time.”



GEA, Stand P130

Technology group GEA will showcase its portfolio of processing and packaging equipment available in the UK at the show. GEA is also highlighting its heat pump technology to help customers maximise energy savings and reduce emissions.

Visitors will have the opportunity to see FoodTray, made from recyclable materials, including paperboard and plastic film. The FoodTray is compatible with GEA’s thermoforming equipment. This eco-friendly solution will be demonstrated with GEA’s PowerPak, a thermoforming packaging system, providing visibility at the sealing station during production, automatic top and bottom film alignment for perfect sealing and change-over and set-up times that require minutes.

The GEA SmartPacker TwinTube will also be on display, with a high speed packing system. Delivering improved flexibility and operational efficiency, this machine has a combined output of up to 500 bags per minute and features a reinforced modular design. TwinTube is able to run paper-based material side by side with recyclable plastic material.

Attendees will also be able to select from production experiences that use virtual reality (VR) to go on an exploration inside a complete dairy plant.

The company has previously shown a packaging and slicing line with the GEA OxyCheck and DualSlicer. OxyCheck is an in-line quality control system that checks the oxygen content and seal integrity of every single Modified Atmosphere Pack (MAP) that leaves a thermoformer, eliminating the need for time-consuming sample testing, which wastes pack-



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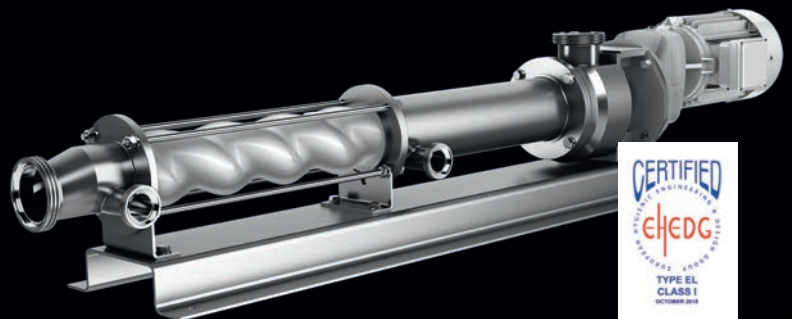
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Stand L179

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aging material, its contents and only tests a small percentage of packs. The DualSlicer was developed by GEA for integration into fully automated lines. It consecutively slices two calibrated logs, such as round sausage, or two uncalibrated logs such as cheese, cooked ham or raw ham, delivering consistent slice quality and constant slice thicknesses – even with softer products – at an output of up to 1,600 kilograms per hour.

Holmach, Stand J180

Provider of food processing and packaging solutions Holmach is set to debut the Perfinox range of technology to the industry at the show. Perfinox manufactures components and systems for cooking, cooling, CIP and rapid heating and cooling. Included in Perfinox's range of technologies is the Perfitech, a compact production unit for processing liquid-based food products with various viscosities and densities, with or without particulates. The multi-functional Perfitech has a range of functions including heating and cooling, homogenisation, emulsification and built in CIP, with vessels ranging in size from 300-3,000 litres.

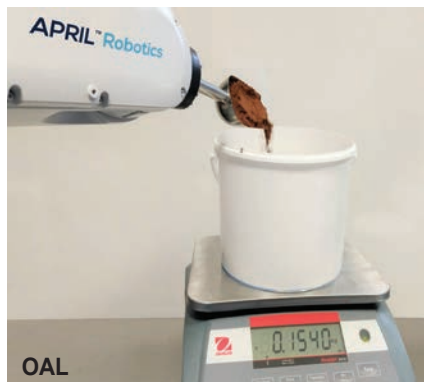


Another technology is the Perfitherm, a scraped surface heat exchanger. This compact kit features a vertical design, with double jacket for a maximum surface and efficient exchange. The system combines the advantages of the tubular heat exchanger, with a slow and gentle stirring system, equipped with scrapers to provide several processes including: rapid heating and cooling, aseptic cooling, crystallisation, sterilisation, pasteurisation and gelling.

With a capacity ranging from 100 to 10,000 kg/hr, with exchange surfaces from 0.5ms² to 7.0ms², the Perfitherm can be used to process large quantities of sauces, soups, creams, ready meal sauces, fruit preparations and dairy concentrates.

OAL, Stand J219

OAL, will be showcasing its robotics and automation solutions, as well as its patented cooking technology, alongside its academic partner, the University of Lincoln. New developments in micro ingredient handling with the University of Lincoln's latest project using cobots to replicate human operators will be shown. OAL will also be on hand to discuss the larger system designed to automate minor ingredient handling.



By automating ingredient handling and storage with the April Robotics Ingredient Handling system, food manufacturers can reduce labour costs while eliminating cross-contamination and maximising traceability and accuracy to improve productivity. The system automatically weighs powders to an accuracy up to +/- 1g at weigh-up rates of up to 1,000kg/hr. It can also deal with a wide weighing range without any mechanical change components, reducing the risk of downtime caused by machine stoppages or breakdown.

PFM, Stand K260

PFM Packaging Machinery's vertical form fill and seal technology will be the centrepiece of the company's range of automated solutions for the food sector.

The R700 is a flexible, compact solution for the production of bags sealed on three sides, such as pillow-bags, and block bottom bags, including four corner seals, with speeds of up to 120 cycles per minute. It is one of PFM's R series of vertical form fill and seal machines that feature automated film reel set-up.

Alongside the R700 VFFS will be the Pearl, a horizontal flowrapper constructed in stainless steel for hygiene benefits. Compact, with a short infeed, the Pearl is a flexible packaging solution offering reduced downtime for reel changes, automatic film web tracking and a space-

saving footprint. High speed and capable of up to 150 packs/min, the Pearl has been developed by PFM to provide all the efficiency advantages of multi-axis servo drive, but at an entry level cost.

INGREDIENTS

FrieslandCampina Ingredients, Stand X241

FrieslandCampina Ingredients will offer applications for protein enrichments, clear protein drinks, healthy snacking and on-the-go formats. The company says it has smart solutions to food and beverage challenges: "By looking curiously toward consumer trends, building trust through supply chain transparency, and concentrating on the science that drives our innovation, we're tapping into dairy's nutrients to improve and sustain life."

Kanegrade, Stand Z260

Kanegrade is a supplier of food ingredients, with a range of natural food colours, flavours, vegetable products, ice cream inclusions, fruit products and nuts and nut products available. The company predicts that alcohol flavours will be popular in dairy this year, as well as dessert-inspired offerings being introduced. Peanut butter and matcha are two of the diverse additions to the dairy products lineup.

PRODUCTS

Acorn Dairy, Stand D141

At the Farm Shop & Deli Show, Acorn Dairy will highlight its range of milks, including organic barista milk, which is blended to give a velvety, long lasting, microfoam. 'Everyday Organic' retail bottles are available direct or through wholesalers or box schemes from Northumberland to London.

Barbers Farmhouse, Stand BB251

Probably best known for Barber's 1833 Vintage Reserve Cheddar, the cheese maker's continued success is down to the authenticity of the family recipe, it says. Barber's has created its own starter culture facilities designed to protect the last remaining collection of 'cheese mother cultures' to have its roots in the original UK cheddar-making region. These unique cultures are give Barber's 1833 its complexity, depth of flavour and the crystal rich, brittle but still creamy body, the company says. [Dii](#)

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Safety for food production

Sesotec has published a new white paper with five tips for the optimal performance of a metal detector, “Lasting safety for food production protection.” Sesotec provides these tips for the optimal setting of metal detectors in order to ensure best possible performance and thus guarantee product purity.

The white paper describes the following how-tos: centre products properly; ensure a minimum distance between products; keep metallic objects away from metal detectors; set products under production conditions and use custom product settings



for different products.

For further information visit www.sesotec.com

Shelf ready dessert packaging

Cama has installed a complete system for a customer, comprised of a high speed sleever and a robotic loading unit to pack sleeved glass jars into shelf ready display cartons. The MP136 sleeving machine was conceived to handle the customer’s existing single jar format at 300 products per minute (ppm) to match the output of the plant.

Furthermore, the machine has the ability to create additional formats, in single or double layers. A motor driven double lateral star-wheel system spaces and phases the jars to the lateral clamping unit, which transfers a preset group into the sleeving station.

Then, a rotary feeder picks up the carton sleeve and places it on two lateral flighted conveyors that drive the sleeve on top of the collated jars. The sleeve is wrapped around the group of jars, then the bottom part is closed by hot melt. After glueing, the sleeved packs are transferred to the machine outfeed by a suitable conveyor.

Additionally, the IF296 monoblock loading unit is composed of three modules (forming-loading-closing) and has been designed to load cartons or sleeved glass jars, in various formats, into display cartons. By utilising the top load principle Cama was able to re-configure the existing wraparound packaging styles already in use, while enabling a significant increase in pack speeds.

For further information visit www.camagroup.com



Delivering on smart manufacturing

Mitsubishi Electric is focusing on practical solutions that allow manufacturing companies and machine builders to realise the advantages of smart automation systems, it says. Its range offers products that enable voice commands to a cobot, which works without the need for any physical safety barriers, the company says.

It also showcases the benefits of a time-sensitive, high-bandwidth industrial Ethernet and features an integrated intelligent pick and place system working at

very high speed. Plus, there is a range of new inverters, PLCs and servo products that offer performance and more advanced connectivity.

Overall, the products and solutions are those that physically deliver on the promise of a truly ‘smart’ factory, the company says.

For further information visit

gb3a.mitsubishielec-tric.com



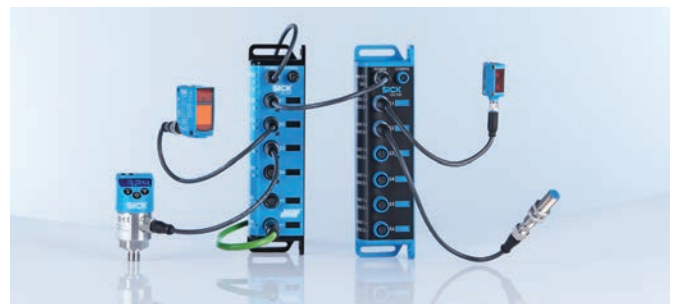
SICK’s sensor integration

SICK has unveiled its SIG200 Profinet Sensor Integration Gateway, the first in a family of intelligent Industry 4.0 gateways designed to work as both IO-Link Masters and small, distributed control systems in one. The SIG is an IO-Link Master with an on-board web server that collects, converts and transmits signals from IO-Link devices from any manufacturer.

SICK’s DualTalk technology means the SIG200 needs only one cable to communicate simultaneously via the fieldbus with the machine controller and with higher level automation or web-based systems. Data can

be integrated transparently into both common PLC environments and higher-level systems. SICK is offering an SIG200 IO-Link Master Starter Kit, which contains everything needed to set up an application using the SIG200. The kit includes the SIG200, IMC Proximity Sensor, WLG16 photoelectric sensor and reflector, cabling and accessories together with SICK’s SOPAS ET and FieldEcho software. Step by step guidance is provided for a quick-start configuration of a simple application using the IO-Link Master.

For further information visit www.sick.co.uk



MARCH

FoodEx

Date: 30 March-1 April
 Location: NEC Birmingham, UK
 Contact: William Reed Media
 Web: foodex.co.uk



APRIL

International Cheese Technology Expo

Date: 14-16 April
 Location: Milwaukee, US
 Contact: Wisconsin Cheese Makers Association
 Web: cheeseexpo.org

MAY

8th IDF International Symposium on Sheep, Goat and Other Non-Cow's Milk

Date: 4-5 May
 Location: Brussels, Belgium
 Contact: International Dairy Federation
 Web: fil-idf.org/event

Interpack

Date: 7-13 May
 Location: Düsseldorf, Germany
 Contact: Messe Düsseldorf
 Web: interpack.com

**World Congress on Nutrition & Food Safety**

Date: 21-22 May
 Location: Tokyo, Japan
 Contact: Conference Series
 Web: foodsafety.insightconferences.com

**Nordic Dairy Congress**

Date: 27-29 May
 Location: Malmö, Sweden
 Contact: info@nordicdairycongress.com
 Web: nordicdairycongress.com



JUNE

IDF International Cheese & Science Technology Symposium

Date: 1-5 June
 Location: Québec, Canada
 Contact: IDF
 Web: fil-idfcheese2020.com/en

JULY

Total Dairy 2020

Date: 1-2 July
 Location: Stratford-Upon-Avon, UK
 Contact: Evidence Group
 Web: totaldairy.com

**International Cheese & Dairy Awards at Nantwich**

Date: 28-29 July
 Location: Nantwich, UK
 Contact: International Cheese Awards
 Web: internationalcheeseawards.co.uk



SEPTEMBER

UK Dairy Day

Date: 16 September
 Location: Telford, UK
 Contact: UK Dairy Day
 Web: ukdairyday.co.uk

**IDF World Dairy Summit**

Date: 28 September-1 October
 Location: Cape Town, South Africa
 Contact: IDF
 Web: fil-idf.org/event/idf-world-dairy-summit-2020

**PPMA**

Date: 28 September-1 October
 Location: Birmingham, UK
 Contact: PPMA
 Web: ppmashow.co.uk

OCTOBER

The Dairy Show

Date: 7 October
 Location: Shepton Mallet, UK
 Contact: Bath & West Agricultural Society
 Web: bathandwest.com/the-dairy-show

DECEMBER

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 Location: Frankfurt, Germany
 Contact: UBM
 Web: figlobal.com/hieurope

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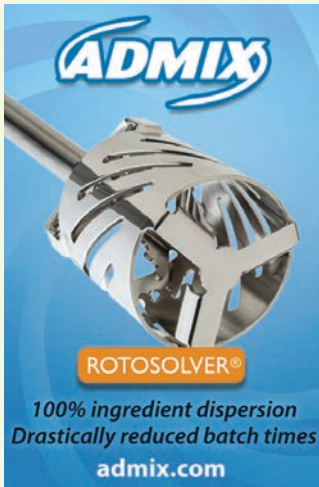


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A working day...

Alex Fubini, Ice Cream Union

Q. What in your background prepared you for your current role?

Nothing really prepared me to run a company – I learned it as I went along, mainly from making mistakes and trying not to repeat them. I do have a background in electronics engineering and a very analytical mind, so I guess this helped me to understand the theory of balancing ice cream recipes as well as the equipment.

My background in engineering definitely affects the way in which we produce ice creams. We customise our equipment to make it what we want it to do, and we've even gone as far as designing and building our own machinery.

Q. Why did you decide to go into ice cream?

It came from a passion for cooking. I've always enjoyed making jam, bread, cheese and baking. I would delve deeply almost obsessively into how each was made and wouldn't stop until I was happy with the results. Same thing happened with ice cream.

I grew up in Argentina and Italy, both with a huge ice cream culture, and thought ice cream in London could be improved and I so started making and selling ice creams to restaurants from home.

Q. What have you seen change over the past few years in the British ice cream industry?

Customers are paying a lot more attention to what's on the ingredient list, they care about what goes into an ice cream and the food they eat. Ingredient provenance and sourcing transparency are also becoming a lot more important and something that restaurants are using in order to differentiate themselves from the competition.

Q. What do you see as the key issue for the UK industry going forward?

We clearly have been challenged by Brexit over the past few years with uncertainty and having to cope with increased ingredient costs due to a weaker pound. The next issue will be what awaits us from January 2021. I believe we will see increased



food costs across the industry, which is not something to look forward to. The hospitality industry has been hit quite hard the past few years, so I'm not sure how much more pressure it can take.

Q. What are the customers asking for in flavours? Most popular flavour?

We are getting a lot of demand for vegan ice creams and the demand keeps growing. Our vegan coconut chocolate chip is the most popular one in our range. Our most popular flavours are banana split, pistachio and dulce de leche.

Q. Extensions to the line? How much do you produce?

We currently produce about half a million litres of ice cream per year but have capacity in our current plant to double this.

Q. What does a typical day look like for you?

I try to spend my time in two areas – product development and sales. I develop all new recipes as well as tweaks to existing recipes, and we are constantly trying to improve what we do. The rest of my time, I like to be out talking to our customers and finding new ones.

Q. Outside of work, what are your hobbies/interests?

Cooking, baking, electronics design, audio, music, 3D printing, too many to list... ice cream was a hobby that turned into a business. **DiI**



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