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magazine

IDM 9

September 2016

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A catalogue of serious consequences

The Brexit raises more and more questions



Roland Sossna
Editor IDM
International Dairy Magazine
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There are a number of serious consequences that Great Britain's exit from the European Union might cause. Now that we've had a few weeks to think it all over, it seems that it will be British dairy farmers who will be the biggest sufferers from the so-called Brexit.

The EU will, of course, lose the third biggest milk producer country. But Brussels may also cease to send direct payments according to the Common Agricultural Policy to the British islands. Brussels, in addition, will not have to take care of British SMP and butter when the status of the markets might require an opening of the intervention system during the next downturn of the milk market cycle. On the other hand, if the UK wants to be able to supply dairy products and cheese to the Continent, it will have to fulfill all the endless lists of requirements the EU poses on such imports. And one more, where does the UK intend to source cheese, butter and other products it needs to satisfy domestic demand other than from the EU?

These are only some of the consequences on greater scale. But there is more to the Brexit. What will happen to international companies that have interests, say investments, in the UK? Arla Foods for instance manufactures all butter and spreads it is selling in the UK from its Continental plants in Denmark, Sweden and Germany. Will Arla all of a sudden lose that market two years from now? And what about the Northern Ireland dairy businesses that have begun to establish direct ties with their southern colleagues in the Republic of Ireland? As it seems, the new border after the Brexit might become a tight one, cutting right through the Emerald Isle.

IDM is sure that there are a zillion other issues raised by the Brexit for the food and dairy sectors. Politicians and officials in the UK and the EU should review this catalogue of problems and questions thoroughly to minimise the damage, especially for the UK and Northern Irish dairy industries, Roland Sossna likes to recommend.

A handwritten signature in black ink, appearing to read 'R. Sossna'.



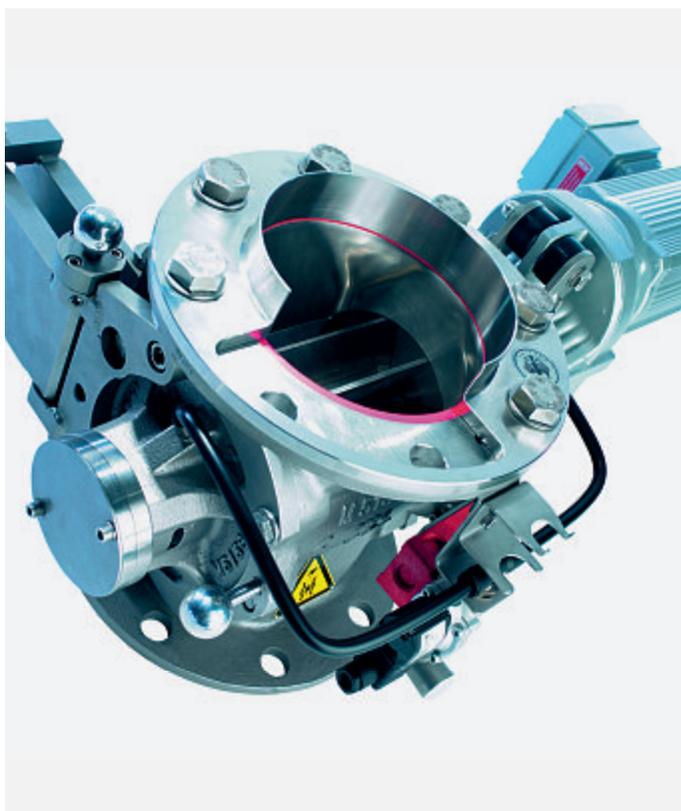
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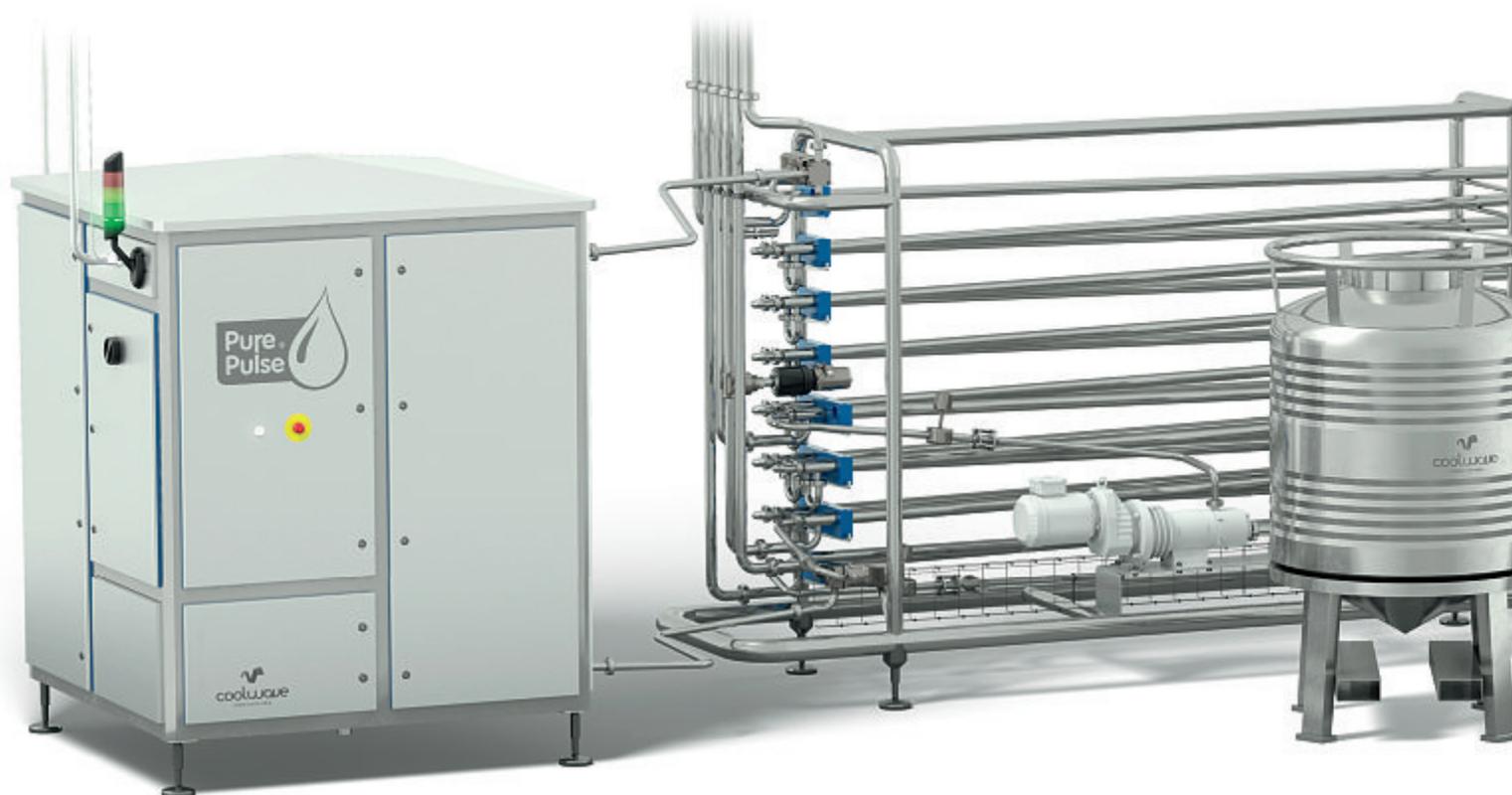
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Cold pasteurisation of milk

Pulsed electric field technology enters the playing ground

CoolWave Processing has given the technology of cold product pasteurisation by means of pulsed electric fields a massive further development. The first PurePulse lines are now operating on industrial scale in the juice industry and CoolWave has set out a strategy to enter the world of milk processing. IDM spoke with Dennis Favier from CoolWave about the new technology.

"Pulsed electric fields are not new at all but the concept was only existing at universities and within research communities up until shortly. In 2010, CoolWave Processing was established to enhance the

development of this technology," explains Mr. Favier. The principle of the pulsed field is that a liquid product enters a chamber in which it is exposed to a fast series of electric pulses. The pulse frequency is 10 – 100 Hz which gives a pulse duration of 1 – 30 µsec. This is enough to damage the cell wall of microorganisms causing their inactivation. CoolWave points out that their technology is a low energy process. This guarantees that the raw product characteristics in taste or protein/constituents quality are kept while the shelf life can be extended to a level compara-

ble with normal pasteurisation. For milk, PurePulse may deliver a shelf life of 10 days, claims CoolWave.

Compared to High Pressure Pasteurisation (HPP), the other cold pasteurisation technology commercially available, PurePulse is a continuous process that requires significant less investment and allows for a higher throughput. CoolWave has PurePulse lines already installed in the fruit juice industry that runs at capacities of up to 1,800 liters per hour. The shelf life of the purepulsed juices is up to 21 days.



A PurePulse line: the box on the left is the actual treatment chamber, the tubes are for preheating and cooling after the treatment, the tanks are for untreated product and treated product (photo: CoolWave)



Dennis Favier: CoolWave has set out now to enter the world of milk processing with its cold pasteurisation technology (photo: CoolWave)

The product enters the "electric chamber" at a temperature of around 40 °C and undergoes a reduction of yeast and moulds and other micro-organisms. There is laminar flow all over the process which is HACCP and Novel Food approved.

CoolWave points out that the operational costs are comparable to UHT lines but that the product quality is superior to UHT. En-

ergy consumption is low making PurePulse a sustainable process, too. The required investment for a 1800 liter/h complete PurePulse system is only a fraction more than conventional thermal pasteurization systems.

Now, CoolWave Processing looks for partners that are interested in jointly developing a commercial application of PurePulse in the dairy

sector. There is only one obstacle to overcome when it is about consumer products: EU law prohibits the sale of non-thermal-pasteurised milk. But as PurePulse offers comparable results to conventional heating, it may be only a matter of time until the process will be approved by authorities. In case of treating vat milk, PurePulse seems ready to go anyway.

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Shaken amid quality scandals

The yogurt market in Russia



Author: Vladilav Vorotnikov, IDM Correspondent, Moscow



Russia sees a fall of yogurts production due to the decreasing purchasing power of consumers and a number of other problems

The Russian yogurt market experienced strong fluctuations in 2015 as the overall volume of sales reduced by 3% to 790,500 tons versus 2014, following estimations of the Maksioma consulting agency. Domestic production was reduced by 1.5% to 765,500 tons while imports amounted to 25,000 tons. Compared to 2013 this figure is nearly three times lower.

Other Russians consulting agencies post similar statistical information, indicating that in general the yogurt segment is going through a period of turbulence.

Research by Maksioma says that the drop in sales and production was associated not only with the embargo but also with falling purchasing power of the population and frustration of many customers with the nutritional charac-

teristics of yogurt. For instance, in 2010-2013 the yogurt market showed the strongest pace of growth among all segments of the Russian dairy market – a growth rate of 10.4% in total.

This was connected with the growing wealth of the average Russian citizen and active advertising campaigns of Wim Bill Dan and Danone, who created an image of yogurt as a the key point of healthy diet. In 2015, however, consumer tastes



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Elopak launches a new highly flexible filling machine portfolio from Shikoku. The machine platform is made for fresh, pasteurized and ESL processed products in Pure-Pak® Classic and Pure-Pak® Sense cartons. The filling machine range offers fast conversion between up to six preset carton sizes and three formats. This latest filling technology is the result of collaboration with Elopak's long-time business partner Shikoku Kakoki.

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changed, partly due to the research of the Russian veterinary watchdog Rosselkhoznadzor as well as other government sanitary bodies.

These findings showed a significant content of palm oil in these dairy products at an amount that poses direct threat to the cardiovascular system of consumers. Alongside with cheese, yogurts turn to be one of the mostly faked types of dairy products.

In 2016, new research found that the scale of fraud in the yogurt segment was not going down but even increased and this probably will contribute to a further reduction of yogurt's popularity.

Fraud reaches unprecedented limits

Russian authorities admit that after 2014 the quality of yogurts in grocery shelves has worsened. European production is now allowed for import, while falsification of domestic dairy products grew to an unprecedented scale. According to experts, the typical fraud of yogurts is conducted with the use of milk fat supplements such as cheap palm, coconut and soybean oils.

Alexei Alexeenko, assistant of the head of watchdog Rosselkhoznadzor is quoted as having said: "The purpose of falsification is to make illegal profits by reducing the cost of production as a result of unauthorized replacement of qualitative biologically valuable raw material by less valuable."

In June 2016, the Russian Center for Research of the Confectionery Market issued a report indicating the volume of import of palm oil destined for use in the food industry grew by 39.6% to 246,000 tonnes. Negotiations by Russian President Vladimir Putin to pose an excise rate of 20% on imported palm oil have failed,

so compared to last year the price of palm oil reduced by 31%, making it even more attractive for dairy producers.

In addition, according to the deputy head of Rosselkhoznadzor, Nikolai Vlasov, the newest study of the veterinary service conducted in June indicated that problems of falsification became much deeper, as nearly a dozen of new illegal substances were found which dairy manufacturers started to use in production of yogurts and some other types of dairy products.

"Manufacturers are adding such things as chalk, starch and soda, lime, boric or salicylic acid and even plaster," Vlasov said, adding that in general since the beginning of 2016 700 cases of dairy production falsification at nearly 300 companies were identified. "There are also no differences on scale between companies producing 'clean' products and those who produce counterfeit. There are small manufacturers who make products without illegal substances, and large market players who were been found conducting fraud."

Alexandr Kirillov, spokesperson of Russian Consumer Protecting Organization, explained that at the moment Russia faces serious problems in the yogurts market, since new studies of Rosselkhoznadzor promise to ruin demand for this type of product. "The consumer is keeping away from dairy shelves in supermarkets, since over the past two years a new stereotype was created that almost all Russian yogurts and some other dairy products are faked and only pose danger to health. New studies probably will make this tendency much stronger, especially since Rosselkhoznadzor refuse from publishing of black list of yogurts producers caught on fraud, so the shadow falls on all manufacturers."

The Russian Union of Dairy Producers (Soyuzmoloko) reported at the end of June that with reduced purchasing power a reorientation of consumer demand for traditional, relatively inexpensive whole-milk products – milk, sour cream and kefir – traditional Russian fermented milk production has started.

Price increase pressures consumption

Despite problems with quality, Russian yogurts continue to strongly grow in price and this factor should be considered as another one which constrains demand for this type of dairy production, according to Sergei Glamazda, head of food market department of the Nielsen Group.

According to his estimations drinking yogurts at the moment occupy a share of 6% of the Russian dairy market, but last year experienced a fall of demand by 4%. At the same time, consumption of set yoghurt among Russians rose by 2%.

A study of Nielsen Group names the rise in price as one of the main reasons for the overall fall of demand for yogurts, since drinking yogurts last year got more expensive by 11%, while fine yogurts increased by 15% in price. The overall price growth of Russian dairy products amounted to 9.7% last year.

Experts of Soyuzmoloko at the same time indicate the shift of consumers towards cheaper products. The situation in yogurts market, according to them, is much similar to the situation of cheese consumption. In the first quarter of 2016, the overall increase of production cost for the cheapest types of cheese amount to 9.2%, while the overall rise of cheese production was equal at only 1.8%.

In general, in a period of crisis Russian citizens' shift to cheaper alternatives of dairy products, as yogurts is replaced with more conventional sour cream and kefir.

"Sour cream and milk are the basic products which are often used in cooking and work in combination with coffee, tea, dry breakfasts and other things, so more dynamic growth in sales of categories of this dairy products compared to other FMCG categories in times of crisis is quite expected" – Glamazda explained.

Meanwhile, the difference in price of yogurts also connected with the geographical factor. According to official information, the main manufacturers of yogurts are located in the Central Federal District which accounts for 72.4% of total



Russians are afraid to purchase yogurts amid the recent scandals



Yogurts in Russia are getting more expensive

output followed by the Volga Federal District – 7.7% and the Siberian Federal District – 5.8%. As a result, in largest cities, including Moscow and St. Petersburg, as well as in remote regions of Siberia and Far East the prices for yogurts are 15-20% higher compared to the European part of Russia.

In general, Kirillov suggested that price will be one of the most important factors which determine the future of the Russian yogurt market over the next odd years. 70% of Russian citizens are saving money on food, according to recent study of the Russian Higher School of Economics, and even amid continuing quality scandals in the market Russians may keep purchasing yogurts if prices would be more attractive.

Unclear future after lifting of the embargo

Meanwhile, at St. Petersburg's International Economy Forum in May, several Russian dairy producers warned the Russian government about the threat of a possible lifting or weakening of the food embargo, including the yogurt segment.

Manufacturers are scared with recent steps of authorities with the cancellation of the ban for import of dairy products destined for children consumption and call on officials to put an end to the restrictive measures against European food companies.

In particular, speaking at St. Petersburg's Forum, general director of one of the largest Russian dairy producer Molinvest, Anatoli Losev, explained that there are several dozens of projects in the country, developed under the current market con-

junction, and with the lifting of the sanctions the country may lose up to 20-30% of capacities for yogurt production. "If we talk about certain segments that would be under attack: it is yogurt and cheese producers. In my opinion we will lose 20% of internal yogurts production and up to 20-30% of cheese capacities" – he indicated.

In Losev's opinion, the decrease of consumer demand and the uncertainty around the food embargo are among the main factors which are concerning manufacturers of yogurt. He called the government to determine some certain position on the food embargo. "If they [government] would lift it in two months, I would not launch anything new, but if there would be left two years from now, I will definitely enter into some new projects. This [changing of market conjuncture] will produce problems to me, my bank and actually to everyone involved" – he explained.

At the same time, according to the press-service of Russian Agricultural Ministry, the demand of dairy producers can not be fulfilled, since the food embargo depends fully on the sanctions issued by Western countries against Russia and this position is not likely to change over the coming years.

As the result, it is hard to say who is benefiting now from the current situation in the yogurt market. Consumers with less income have to opt for products with suspicious quality, while manufacturers are in limbo over the uncertain market future.



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(photo: Frischpack)

Innovative packaging for cheese-related requirements

Frischpack's intelligent packaging solutions

Trends often promise to predict the future, but who would not love to be just that one proverbial step ahead of the competitive field. Frischpack, the cheese service provider from Southern Germany, is taking precisely this step and now offering its customers yet another innovative packaging solution. The newly designed production line allows cheese slices to be packaged in pocket bags as an alternative to the existing deep-drawn trays. As a result the practical benefits of a resealable flow pack are combined with the perfect presentation of the cheese slices on a plastic or paper tray. The option of printing the cheese packaging on both sides emphasizes the consumer wish for more transparency. The new line can also meet specific customer requirements and thus create customized options for holistic solutions in the cheese industry. Frischpack has been specializing in the co-packaging sector for more than 40 years and is therefore well equipped to guarantee that it can serve its customer businesses with well-established expertise.

Resealable, individual packaging trends thanks to pocket bags

With pocket bags, cheese slices can be packed in a stacked or fan-shaped arrangement and this packaging option also has the versatility of being manufactured with a top or side opening. And when it comes to the material, this independent mid-tier company is head and shoulders above its competitors. Customers can choose between different types of film – neutral, printed, with a matt finish or with laminated paper – thus allowing them to have their cheese packed in their own individual design. For it is more important than ever nowadays to use unique packaging if the product is to optically stand out from that of other manufacturers at the point of sale. The "homemade" or "sustainability" trend is an example of this. Packaging that has the look and feel of sandwich paper gives the consumer the impression of being natural and fresh. This appeals particularly to the attractive LOHAS (Lifestyle of



The primary impressive feature of the flow pack format is its low material consumption (photo: Frischpack)

Health and Sustainability) target group which, despite having a great awareness for sustainability, are also taste-orientated.

Greater sustainability through less waste

However, not only LOHAS consumers require more sustainability from companies; conventional consumers are also paying more attention to this issue. The advantage of pocket bags lies both in the lower amount of film waste generated in production, as no material is lost during sealing, and the reduced packaging costs incurred through the use of thinner films. Since the pocket bags can be printed on both sides, customers have more room to list all of the necessary promotional characteristics such as the consumers' declaration requirements. Frischpack offers the pocket bag packaging option exclusively to customers from the dairy and cheese dairy industries. Products manufactured under the Frischpack brand name are also available in the flow pack format. The primary impressive feature of these packaging options is their low material consumption. In contrast to deep-drawn trays, the product packaging simply comprises a film. A differentiation is made between flow-pack films for horizontal and vertical packaging, for example for semi-hard cheeses, blocks of cheese and grated cheese.

With premium quality – it's in the bag!

With the installation of the new in-line system and intelligent packaging options, Frischpack is once more underlining its technological leadership in the processing and packaging machine sector. But technology is not all it takes – reliable service, strict adherence to deadlines and high quality are also factors which form the basis of the company's success. Proof of this can be found in the use of carefully selected, fresh, high-quality raw produce. All cheese suppliers are certified, renowned businesses. Almost every product is manufactured without colouring agents and preservatives. Frischpack is certified in accordance with the IFS and BRC standards. Its organic and halal product certification rounds off its seals of quality. The numerous national and international commendations, for example from the German Agricultural Society (DLG), confirm the high standards. A further aspect is the belief in accepting responsibility for one's own actions. With a DIN ISO 14001 and 50001 compliant re-audit, Frischpack GmbH once again reaffirmed its pioneering role when it comes to resource-saving and environmentally-friendly working methods. Sustainable economic development has always been an integral part of this independent company's philosophy, one which is lived out on a daily basis. "We always endeavour to use the most modern machinery to offer our customers an economic and sustainable service which is unique to the market. We view innovation as an investment in the future of our company and, of course, in our customers," is how Marian Heinz, Managing Director of Frischpack GmbH described the decision in favour of the line.



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New labeller for Danone plant in Brazil

Langguth



The inline labeller hotLAN 310 equips various container shapes with wraparound labels. Due to economic pick-up and lap glueing a saving potential up to 90% is realized. Owing to the application of special glues it is also possible to process No-Label-Look labels (photo: Langguth)



Danone labels various babyfood products on the new labeling machine (photo: Danone)

As a multinational corporation Danone is active worldwide in more than 120 countries in the field of food and beverages. As far as baby food is concerned the Danone group relies on high-quality machines manufactured in Senden-Bösesell, Germany. In Poco de Caldas located in Brazil a new LANGGUTH labeller is now in operation after a long journey over the oceans.

▼ HERE IS A TIMELINE OF THE PROJECT

25 January 2016

The labeller manufactured of robust stainless steel crosses the equator and is commissioned directly at the site by the customer after 35 days of transport by sea. As 18,000 milk powder cans are labelled per hour Brazilian mothers can convince themselves from now on of the good Danone quality.

10 November 2015

After seaworthy packing the labeller is shipped in a container by the Danone partner Jorgensen Engineering a/s and starts its long journey from Copenhagen across the oceans.

8 September 2015

Well protected: Safely packed for sea transport the labeller "Made in Germany" doesn't get even one scratch.

5 September 2015

The LANGGUTH specialists complete the hotLAN 310 in CLEAN design for the production of milk powder intended for the Danone plant in Brazil considering the highest safety and hygienic standards. An extensive test run is carried out before delivery in order to meet all customer requirements.

Faster, safer, more flexible format changes SOMIC at the FachPack show

The growing requirements of the market and customers are the driving force for packaging machine manufacturer SOMIC to continually search for new innovations. Of course, in doing so, the focus is primarily on packaging. Secondary features, such as product changes, performance and accessibility of the machines, are also crucial for an optimum packaging process however. At FachPack 2016, SOMIC will therefore be demonstrating a Tray Packer 424 T2, which is achieving new levels of excellence in terms of flexibility, speed and format changes.

The newly-developed carton blank magazine with quick-change technology makes format changes possible without tools. This new technology completely eliminates the need for readjustments and testing. This speeds up format changes by more than 50%.

Optimised space usage while retaining the machine's compactness has enabled significant increases to all 3 dimensions of the packaging volumes. Thus the carton format range has been extended from 400 mm to 460 mm in length and from 300 mm to 350 mm in width and in height.

The machine's revised collection area now allows convenient access to the interior of the machine. This fundamentally simplifies service works and format changes.

A precisely reproducible positioning of the hot melt units means SOMIC machines will be able to apply adhesive more accurately in future. This is particularly important with small carton blanks.

A compact storage system will be used as a high-performance feeder for the continuous feeding of 400 trays/min in order to provide a realistic presentation of the Traypacker. That way,



At FachPack 2016, SOMIC will be demonstrating a Tray Packer 424 T2 coupled to a compact storage system (photo: SOMIC)

a cartoning capacity of an impressive 35 trays/min. can be demonstrated.

SomiCon, a company from the SOMIC Group, usually supplies handling and transport systems. This will be the first time these have been represented together with SOMIC at one stand. somic.de

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GRUNWALD defines the standard for ultraclean filling

The first Foodliner 20.000 UC has been delivered



8-lane inline cup filler GRUNWALD-FOODLINER 20.000UC with new and reliable hygiene concept (photo: GRUNWALD)

GRUNWALD, manufacturer of filling machines based in Wangen, Germany, not only celebrates its 60st anniversary this year. The company has also re-defined the current standard for ultraclean filling with the new Foodliner 20.000 UC machine that

IDM was allowed to see prior to delivery at GRUNWALD's site in May at an in-house exhibition.

"So far we haven't had a worldwide standard for the term ultraclean. In response to the demand in the markets and from our customers we surely have set a new milestone," says Sales Manager Stefan Sacher. "Most products need no aseptic filling given the modern processing technologies and hygienic packaging materials that customers use. What was called an aseptic filling machine ten years ago, can only be called ultraclean given today's state of technology."



When looking into the tunnel, the newly designed hygiene zone of the FOODLINER cup filling machine is clearly apparent– the tunnel is "clean" (photo: GRUNWALD)

Flexibility for products and formats

The 8-lane linear filler Foodliner 20.000 UC was developed by GRUNWALD for a co-operative group that will fill a product with a somewhat higher viscosity. To provide the customer with the highest possible flexibility, the machine was designed for filling different products and for easy and fast change-over. Cups and lids are sterilised using UV-C light instead of H₂O₂. Mr. Sacher comments: "UV-C technology has made real step changes over the past years." The sterilisation effects guaranteed by GRUNWALD, $\geq \log 4$ for tubs and $\geq \log 5$ for lids, were certified by two independ-



Double pulsed light high-performance UV(C) cup sterilisation with a guaranteed sterilisation rate of at least LOG 4 (photo: GRUNWALD)

ent German institutions on the reference of *Aspergillus niger* DSM 1957. The Technical University of Munich Weihenstephan has also confirmed that GRUNWALD's pre and main hoppers model EASYCLEAN fulfill EHEDG standards. The cups are put into the filler's magazine by the operator which has a capacity of 15 to 19 minutes production when running the filler at 25,000 cph. After destacking, cups enter immediately a laminar half-tunnel (HEPA filters, clean room class 5). A double pulsed light irradiation then takes care of sterilisation.

Safe production – "foreign body protection"

The tunnel was designed in a way that no foreign bodies may fall into the tubs. This was realised by a significant reduction of parts in cups' guiding and a number of other measures. Two pre and one main hopper, designed in GRUNWALD's self-developed EASYCLEAN standard, are installed in the Foodliner 20.000 UC. To provide for product flexibility, GRUNWALD has positioned the filling nozzles on racks that slide out so that different nozzles may be used. This as operator-friendly as the retractable UV-C emitters' rack which allows for a replacement of the lamps within 10 minutes. The filled cups then enter a separate hygiene zone with laminar air flow where they are sealed with the separately sterilised lids (the lid magazine allows for a 2 hour operation) and inkjet coded before a slip lid or a Top Cup are applied. Before actually a slip lid or Top Cup is applied, the machine checks for cup tightness. An integrated packer puts the cups into carton trays.

Change-over in 5 minutes

The filler in the configuration IDM had a look at had two format panels with 75 and 95 mm in diameter. The change-over operation is fully automatic, a complete change-over of the whole machine including the integrated packer takes 3 to 5 minutes and can be made even during intermediate cleaning. The start-up of the machine takes 10 minutes as only the sealing heads have to heat up. To minimise the parts that need to be exchanged for a change-over



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and to keep change-over time as short as possible, the sealing heads were designed in a combi configuration. The Foodliner 20.000 UC was designed for filling volumes between 120 and 560 ml.

Intelligent control

The cup tunnel in the machine exposed by GRUNWALD at the time of IDM's visit was designed for manual cleaning once a day. As there are no spray balls, there are no spray shadows. Mr. Sacher highlighted that the whole filling operation requires only one operator. He is assisted by the intelligent control system. The machine informs the operator based on the production plan how many cups still are required which has advantages re. workload and hygienic status of packaging material. The machine also alerts the operator for upcoming maintenance, like the exchange of the UV lamps every 3,000 to 3,500 operating hours or the exchange of the sterile air filters or the weekly check of UV-C radiation intensity. In case these maintenance works are not carried out, the machine will stop. This helps for keeping a high hygienic status. Should the format panels become befouled during operation, a cleaning station located in the return of the chain can be activated. All areas of cup handling are easily accessible and the minimisation of parts also reduces the overall work load. Drive and control elements are located above and under the cup tunnel which increases their service-life as they are



GRUNWALD Sales Manager Stefan Sacher: Most products need no aseptic filling given the modern processing technologies and hygienic packaging materials that customers use (photo: IDM)

not exposed to cleaning. All in all, Stefan Sacher summarised, the Foodliner 20.000 UC was designed for highest hygienic standard, shortest possible change over time and great availability. GRUNWALD's in-house exhibition was visited by over 90 participants, some of them came from Australia, South Africa and Canada just to see the machine innovation on site.

Global dairy top 20, 2016

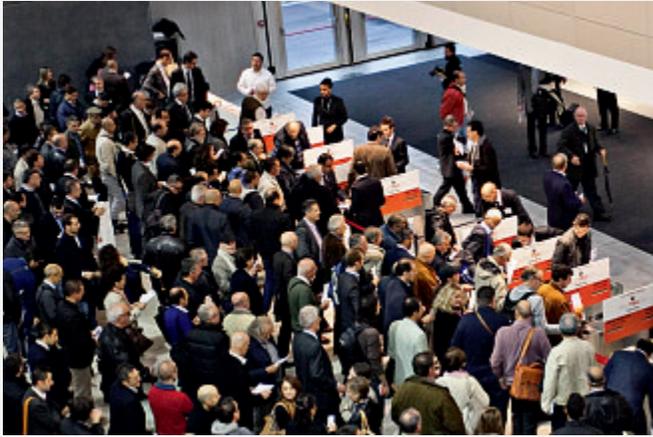


2016	2015	Company	Country of headquarters	Dairy turnover, 2015*	
				(USD billion)	(EUR billion)
1	1	Nestlé	Switzerland	25.0	22.5
2	2	Lactalis	France	18.3	16.5
3	3	Danone	France	16.7	15.1
4	▲ 5	Dairy Farmers of America	USA	13.8	12.4
5	▼ 4	Fonterra	New Zealand	13.1	11.8
6	6	FrieslandCampina	Netherlands	12.3	11.1
7	7	Arla Foods	Denmark/Sweden	10.5	9.4
8	▲ 10	Yili	China	9.3	8.4
9	▼ 8	Saputo	Canada	8.6	7.8
10	▼ 9	Dean Foods	USA	8.0	7.2
11	11	Mengniu	China	7.9	7.1
12	12	Unilever	Netherlands/UK	7.0**	6.3**
13	▲ 16	Kraft Heinz	USA	6.5	5.9
14	▼ 13	Sodiaal	France	5.7	5.1
15	▲ 20	Müller	Germany	5.6**	5.0**
16	▼ 14	DMK	Germany	5.5	5.0
17	17	Meiji	Japan	5.2	4.6
18	18	Schreiber Foods	USA	5.0**	4.5**
19	▼ 15	Savencia	France	4.9	4.4
20	▲ -	Agropur	Canada	4.6	4.1

* Turnover data is dairy sales only, based on 2015 financials and M&A transactions completed between 1 January and 30 June 2016. Pending mergers/acquisitions not incorporated include Nestlé's JV with R&R Ice Cream, Danone's acquisition of WhiteWave Foods, FrieslandCampina's acquisition of a 51% stake in Engro Foods and Mengniu's acquisition of a 79% stake in Burrá Foods

** estimate

Signs of a record edition CibusTec 2016



1,200 exhibitors and over 30,000 visitors are expected at CibusTec in Italy, in Parma. German partner Koelnmesse contributes to a 20% increase in international exhibitors and visitors.

Already months before the show opens, the exhibition can lay claim to being the Italian benchmark for the food processing industry, with 95% of the 2014 exhibitors confirming their attendance, along with 200 new exhibitors, and a significant expansion (+ 30%) of the packaging technologies and materials section.

An intensive program of workshops with international guests is laid on to address the most current issues in the sector, including the new frontiers of food hygiene and food safety, energy consumption diagnosis and future solutions, water footprint and strategies for reducing water consumption, and the role of eco-friendly technologies in enhancing competitiveness. Production and packaging solutions for "free-from" products as well as eco packaging will occupy a large space.

A new Cibus Tec Agenda online tool enables visitors to request appointments with exhibiting companies; the Innovation Hub integrated portal on the Cibus Tec website will promote the technological innovations exhibited at the show. cibustec.it

NOLA Fit for lactose-free and sugar-reduced dairy products Chr. Hansen

Chr. Hansen introduces NOLA Fit, a new patented lactase enzyme. The enzyme is highly specific, causes little side-effects and produces no off-taste. The latter is especially important for UHT and ESL milk. Chr. Hansen says that NOLA Fit excels in securing a good taste all over the storage life of dairy products. The enzyme is highly effective even at low pH. When producing sugar-reduced products, the use of NOLA Fit can replace 1 gr of sugar in 100 g of product. chr-hansen.com



Chr. Hansen has developed a new, highly specific lactase named NOLA Fit (photo: Chr. Hansen)



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Challenges for Arla

Smooth packaging of mozzarella presented Arla with some challenges during palletisation



Michael Schlosser Johansen next to a plastic pallet where the Antim non-slip paper prevents smooth packs of cheese from slipping (photo: PAL-Cut)



The Antim non-slip sheet is positioned at the bottom and higher up to ensure stable pallet assembly (photo: PAL-Cut)

In spring of 2015, the Arla dairy in Branderup, Denmark, was converted to Mozzarella production. This was not without its challenges, as the cheese had to have smooth packaging and stand on smooth pallets. A PAL-Cut solution with non-slip paper was the answer.

Mozzarella is supplied by Arla in 9.2 kg packs, so a new packing line had to be installed in the dairy, as the old one was too small, being designed for packing cheese in small retail packs.

Need for stability

The task of palletising 5 tons of Mozzarella in an hour placed heavy demands on the palletisation system. Intermediate sheets would have to be inserted in the pallet stacks without any interruption to process flow, and the pallets made stable, as both the pallets and packaging are made of plastic. This increased the risk that the pallets would slip out of position when being transported to customers around Europe.

For this reason, Arla opted for a fully automatic PAL-Cut sheet dispenser and Antim65 intermediate sheets of non-slip grade. The sheet dispenser was incorporated in the system, allowing one sheet to be dispensed at a time – what one might term sheet-on-demand. This minimised the risk of the packing robot losing the sheets or positioning them inaccurately.

"Overall we are very satisfied with the new palletisation system, and the PAL-Cut sheet dispenser has not caused a single stoppage," says Michael Schlosser Johansen of Arla in Branderup.

Smooth packaging

Arla Branderup often uses plastic pallets for palletising cheese, so they opted for a solution in which Antim non-slip is inserted as a bottom sheet. This ensures that the smooth cheese packs do not slip around on the pallet, at the same time as protecting them from damp and dirt penetrating from below.



PAL-Cut is integrated in the palletisation system and only dispenses one sheet at a time. It minimises the risk of the packing robot losing the sheet (photo: PAL-Cut)

Each pallet is assembled in 9–12 layers, each layer containing 8–12 packs that each weigh 9.2 kg. This means another one or two layers of Antim intermediate sheets are needed to ensure adequate stability when the pallet is loaded with up to one ton of cheese wrapped in smooth plastic packaging.

The PAL-Cut sheet dispenser automatically adjusts the size of the intermediate

layer to suit the size of the pallet. At Arla Branderup they work with pallet sizes of 1,000 x 1,000 mm and 800 x 1,200 mm.

"Assembled pallets are now a lot more stable, and it helps reduce costs," says Michael Schlosser Johansen.

Non-slip coating

"The secret behind the stability of the assembled pallet is the Antim intermediate sheet, which is coated on both sides, thereby ensuring that the products do not slip even if the pallet is tipped through 50 degrees," says Keld Emil Jensen from PAL-Cut A/S. It also allows the use of a thinner paper grade than on conventional intermediate sheets made of card, allowing savings to be made on packaging materials.

The packing system was delivered in the spring of 2015 as a turnkey solution of Bila A/S, with PAL-Cut as sub-contractor for the PAL-Cut sheet dispenser solution and the Antim65 non-slip paper. The PAL-Cut solution is used in a number of Arla's dairies.

Emulsifiers, stabilizers and know-how in dairy put to work



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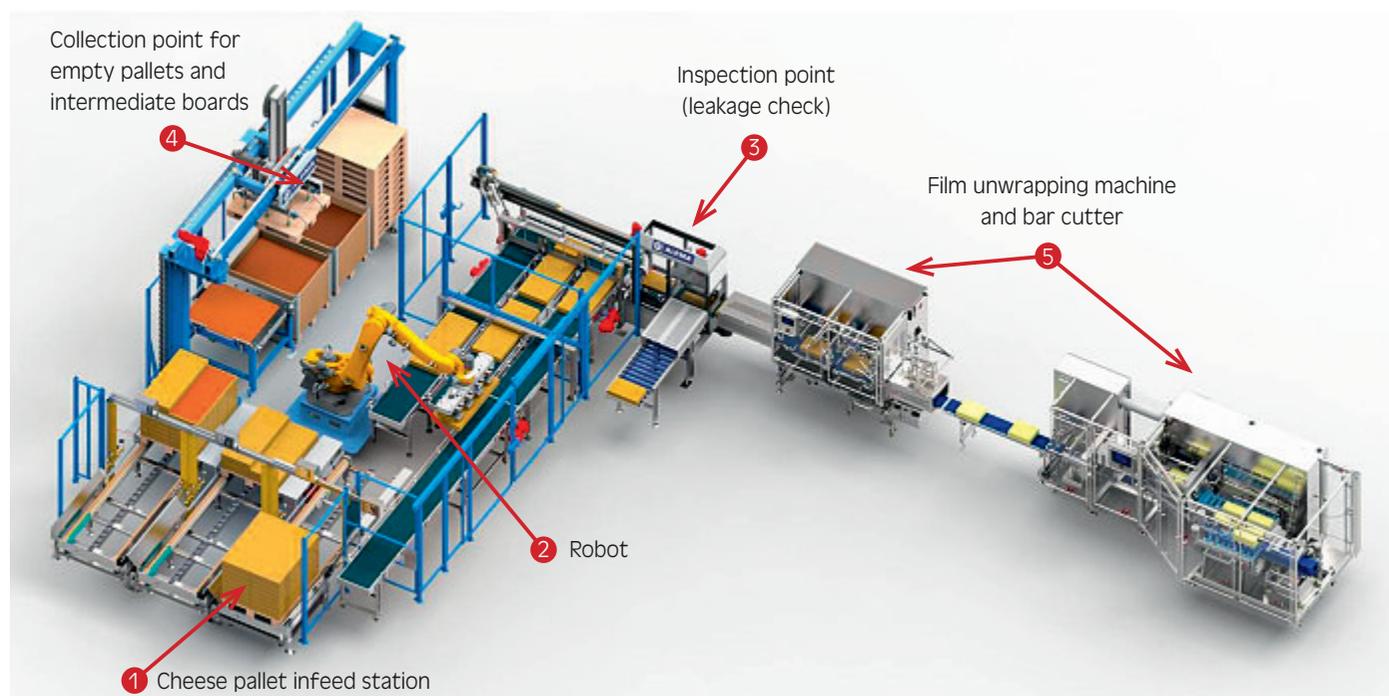
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- UHT whipping creams
- Non-dairy creamers

A cut ahead

ALPMA – Fully automated complete lines for cheese portioning



Depalietisation of Euroblocks

Packaging rooms for cheese have undergone some major changes over the last 15 years or so. Where formerly, they contained a variety of machines with little or no interlinking and a great deal of work was performed manually, today, cheese is packaged on fully automated complete lines. This makes economic sense, explained Uwe Becher from ALPMA at a German cheese tech forum in June, and not only for large-scale enterprises.

Mr. Becher "walked" his audience through the entire line, from infeed right through to fixed-weight portioning of the cheese.

Mr. Becher described cheese preparation with cutting-edge technology based

on projects already realised by ALPMA. Fully automated depalietising centres can be installed both for the "Euroblocks" customary in Germany and Cheddar. Here, the Cheddar cheeses are first taken out of the cases without puncturing the film and the film is then removed in the usual way. Film-ripened cheese which has drawn air is automatically discharged to allow inspection by personnel and the removal of any mouldy cheese before further processing. The cheeses are then fed to a central portion cutter, whereby a number of different cheeses (in the case of Cheddar, for example, two types) are packed onto the cutting lines by a robot.

Fixed-weight portioning

The cheeses are now ready for cutting into bars and subsequent flush-cutting. In the case of Emmentaler cheese, Becher mentioned the established fixed-weight portioning with a capacity of 3 t/h used, for example, by Zott (IDM reported on this), which makes it possible to cut the bars into precisely fixed-weight portions with the help of an X-ray image and a scan of the dimensions of the cheese. ALPMA has already supplied almost 50 of these lines, gaining an enormous amount of experience in the process. And as Mr. Becher emphasised, such investments pay off "very quickly".



Uwe Becker, ALPMA: Packing rooms for cheese have undergone some major changes over the last 15 years (photo: IDM)

Special cases

Uwe Becker also focused on special cases where fixed-weight portioning is not always easy. Feta loaves, for example, are cut using sheet metal or ultrasound knives, depend-

ing on the product consistency. Neither bar cutters nor inspection system are required here. The cheese slices are then transferred to a deep-drawing machine at a speed of 220 packages à 150 g per hour. Transfer is effected with a maximum of ten movements for the number of feta units required for loading of the deep-drawing machine and is thus particularly gentle. Individual suction cups with a controlled vacuum also allow automatic processing of UF feta.

State-of-the-art processing of blue cheese was described by Becker using the example of a recently installed line. Here, too, the portions are automatically and gently transferred to the deep-drawing machine.

Round Gouda loaves, naturally-ripened or foil-ripened, can also be portioned fully automatically. The shape and weight of each individual loaf is measured. Segments of different dimensions are produced to allow full exploitation of the loaf in combination with the centre cut-out. The individual segments are produced in a single-

cut process. This can then also be followed by automatic loading onto a deep-drawing machine. The big advantage of this process is that the half-loaves are pre-cut in such a way that a full portion is produced at the end, and not two leftover pieces, as is the case with other processes.

Less downtime

As Becker also explained, ALPMA designs its machines to be easy-clean and maintenance-friendly. Machines bearing the seal of efficiency have significantly lower cleaning and changeover times, and all work can be carried out by just one person and without the use of tools. Shorter cleaning and changeover times not only cut outlay for personnel and cleaning solutions, but also boost machine availability.

Mr. Becker also mentioned that in spring 2016, after evaluating around 3,300 companies, the business magazine *Wirtschafts Woche* listed ALPMA in its ranking of the top 20 most innovative mid-sized German enterprises.

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ITALIAN EXCELLENCE

Lake District Biogas

Green energy from Cumbrian cheese

Clearfleau, leading British provider of on-site treatment solutions for the food and beverage sector, has commissioned its most complex plant to date, that feeds bio-methane into the gas grid in rural Cumbria. By feeding the bio-methane into the gas grid, the £10m facility will produce over £3m per annum in cost savings and revenue, while supplying up to 25% of a First Milk creamery's energy requirements.

The plant has been designed and built for Lake District Biogas, which will operate the site for twenty years taking feedstock from First Milk's Aspatria creamery site. This comprises low-strength wash waters such as process rinses, supplemented by whey permeate (cheese production residue after protein extraction for use in energy supplements). This is pumped to the AD plant from the creamery.

Gas from cheesemaking residues

This is the first on-site Anaerobic Digestion (AD) plant in the dairy industry in Europe to feed bio-methane to the gas grid, generated exclusively by digesting cheese making residues from First Milk's Lake District Creamery. At full capacity – from May 2016, the plant can treat 1,650m³ per day of process effluent and whey and generate around 5MW of thermal energy.

The AD produces 1,000m³ of biogas per hour, of which over 80% will be upgraded for injection into the national grid. At least 60% of the bio-methane will be used in the creamery for steam generation, with the balance being used by local businesses and households in Aspatria.

Revenue benefits include 20-year index-linked, government-backed incentive payments, with about £2 million per annum in support through the government's RHI scheme and a further £1 million through the sale of gas to the wholesale market and from the Feed in Tariff scheme for the power generated in the CHP engine.

The new plant, with its state of the art British technology, will take over from an outdated aerobic plant. This will have saved First Milk from having to upgrade the old inefficient plant, reducing their effluent treatment costs and carbon footprint, while cutting operational costs, which are borne by Lake District Biogas. Additional benefits from the deployment of on-site digestion in the dairy processing sector include reduced energy and off-site disposal costs.

Upgrade for biogas

The biogas is stored in a gas dome before being upgraded to bio-methane – 80% of the biogas with at least 55% methane is fed to a membrane based upgrade unit that removes CO₂ from the gas to produce bio-methane with a comparable thermal value to North Sea



Clearfleau has commissioned the first anaerobic digestion plant to supply the UK gas grid with biogas generated only from cheese production residues (photo: Clearfleau)

gas (some biogas is also fed to a CHP unit to provide power to run the treatment plant).

As an initial step, Clearfleau refurbished the existing aerobic plant to enable First Milk to significantly reduce levels of phosphate in their effluent, which is discharged to the River Ellen. Supported by the Environment Agency, this will ensure an early delivery of new tighter discharge standards, which are required by the Water Framework Directive.

Clearfleau's on-site AD technology is proven to reduce the chemical oxygen demand (COD) of the production residues by at least 95%. Aerobic polishing will then remove residual COD and nutrients (nitrates and phosphates) to allow safe river discharge.

Downstream treatment will take place in an existing aerobic plant which Clearfleau has upgraded and enhanced through provision of chemical treatment for nutrient removal. The residual sludge from the plant will be spread on local farmland as a nutrient rich soil improver.

On-site digestion will produce over £2m per annum in net revenue (after operating costs) from savings, incentives and gas sales.

Villaume Kal named new CEO NIZO food research



NIZO food research, a global contract research organization for companies in the food and health industries, has named Villaume Kal (46; photo: NIZO) as the new CEO as of August 2016.

Kal brings more than 20 years of pharmaceutical, food and contract research experience. Before joining NIZO food research, Mr. Kal spent three years at Darling Ingredients as CEO of Rousselot. Previously, he held various management and executive positions at DSM with a focus on ingredients for the global pharmaceutical, infant nutrition and food industries. Kal holds a MSc in Bio-organic Polymers from Leiden University.



Pentair has appointed Dirk Spang as Business Development Manager Dairy. Effective July 1, 2016 Dirk Spang is responsible for positioning of Pentair's product portfolio in the global dairy markets.

Spang has worked for SIG Combibloc, Bericap and Krones before joining Pentair. Here, he is responsible for the development of Pentair's dairy business, incl. hygienic and aseptic process solutions, membrane filtration and fractionation, water treatment, services and lifecycle management.



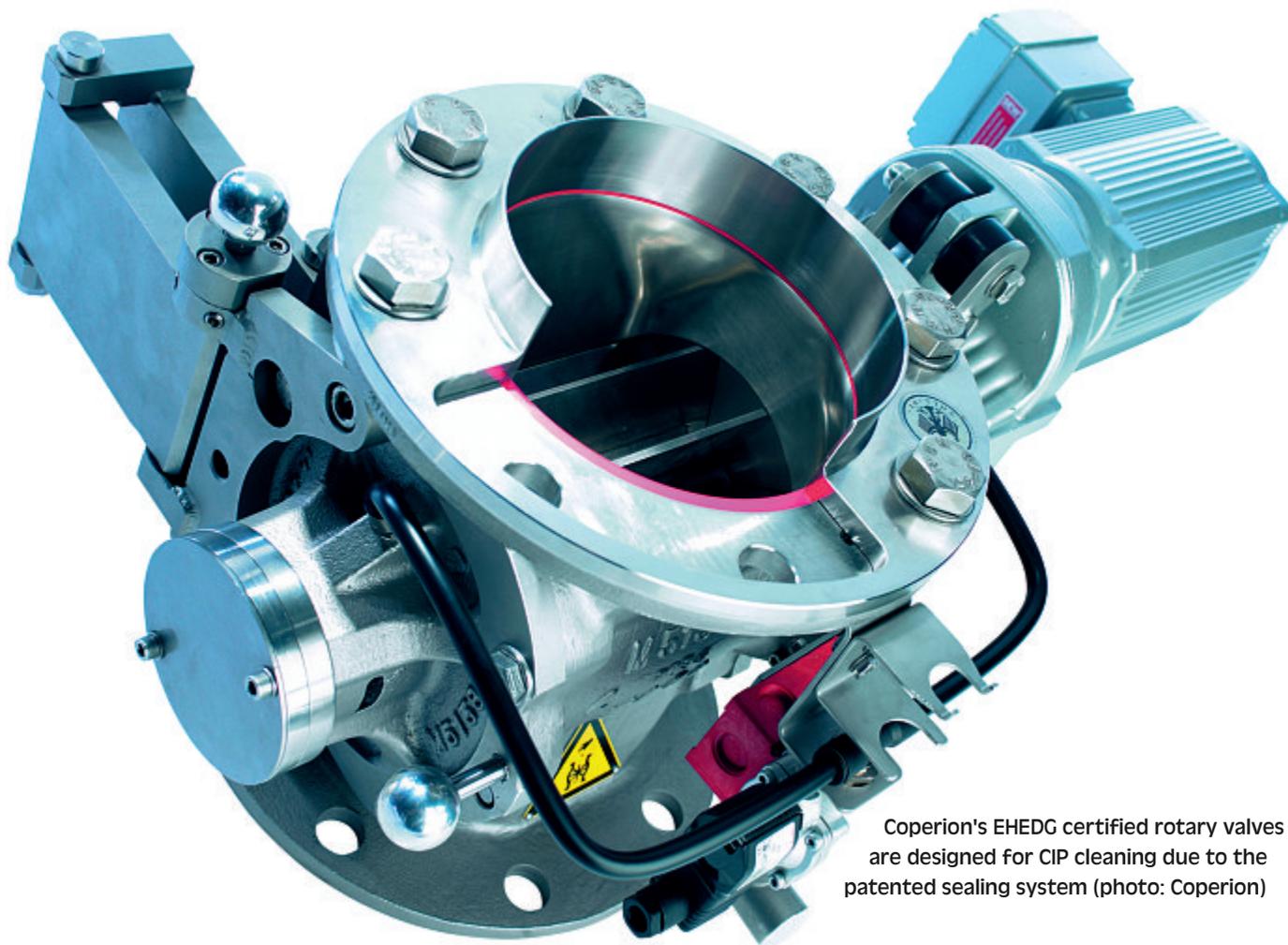
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“We take EHEDG seriously”

Sanitary rotary valves and bulk material diverter valves



Coperion's EHEDG certified rotary valves are designed for CIP cleaning due to the patented sealing system (photo: Coperion)

With its pioneering developments in the field of hygienic handling of powdered foods, Coperion GmbH, based in Weingarten/Germany, has advanced to a special position in the sector. Originally a supplier of complete bulk material handling systems for the chemical and plastics industry, for the

past 10 years or so Coperion has carved out a niche for itself in the food industry. IDM decided to take a look.

"We take terms such as EHEDG, hygienic design and CIP seriously. This means that our components are EHEDG-certified, their design is absolutely hygienic and therefore prevents recontamination," explains

Jochen Sprung, Head of Sales and Business Development for the food industry at Coperion. The company is therefore not only just following EHEDG recommendations as many others on the market, but also has its components certified and is actively involved in the Dry Material Handling subgroup of the EHEDG. Rotary valves

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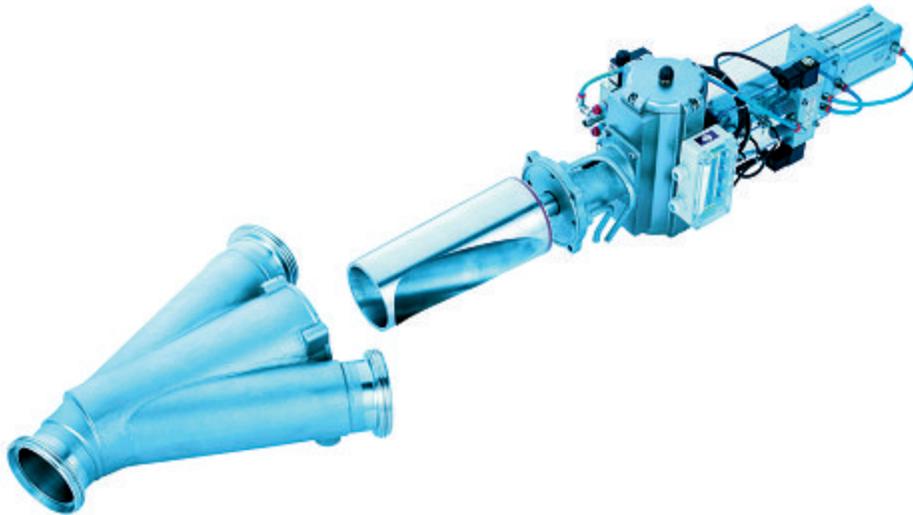
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EHEDG certified CIP bulk material diverter valve WYK for the highest hygienic demands (photo: Coperion)

were the first components designed especially for food production, marking the start of Coperion's entry into this market in 2005.

The decision to focus on the complex world of hygiene requirements was made with an eye on the expected growth rate of >5 % p.a. in the global food industry – a market that is not very volatile when compared to that of the chemicals industry.

Sanitary rotary valves

The Coperion rotary valves developed especially for dried milk products are hallmarked by their smooth, flush connections, and have a gap-free design for wet cleaning. The "Hygienic" series is supplied in polished stainless with a surface roughness of <math><0.8 \mu\text{m}</math>. The range includes blow-through, discharge and conveying valves for powder, all designed for a pneumatic pressure of 1.5 bar. Flameproof and pressure surge-proof versions (Atex protection system) that are required, for example, for lactose drying applications are also available. The special feature of these rotary valves is that they have a swivel type extraction device for the rotor for fast cleaning and inspection. Due to a patented sealing system, EHEDG certified (type EL Class I) rotary valves are designed for CIP cleaning and do not require dismantling, which saves the system owner time and money while protecting the system against external contamination. These components only occasionally have to be opened and inspected, Sprung advises. Three years ago, the company launched another of its own developments for applications that require dry cleaning which was

awarded EHEDG dry cleaning certification, type ED, for its sanitary product design.

RotorCheck contact monitoring

In extreme cases, malfunctions in the production process such as sudden increases in the product temperature, bearing damage or foreign objects in the product can cause problems in rotating components such as rotary valves, and the rotor can touch the housing, producing fine metal particles that can be released into the conveyed product, for example.

To prevent such risks, the company has developed an electronic contact monitoring device called RotorCheck. The system with its patented electronics monitors the rotary valve and works on the basis that the rotor and housing are electrically isolated from one another.

If the electrical resistance drops, the RotorCheck sounds an alarm and detects whether the change in resistance is caused by an unwanted metal contact or only a change in the product characteristics, such as moisture. According to Sprung, leading baby food manufacturers already rely on the RotorCheck.

"The RotorCheck can prevent serious damage to the component as well as product contamination, but companies must also have a procedure in place for handling alarms, as the alarm requires possibly a complete shutdown of all upstream production processes," adds Sprung, explaining the strategy behind the device.

Bulk material diverter valves

Coperion also supplies bulk material diverter valves for pneumatic conveying systems. The range includes two-way diverter valves of various designs, either with parts in contact with the product made of stainless steel or full stainless steel construction. The EHEDG certified CIP diverter valve WYK for the highest hygienic demands is particularly innovative.

It permits a fully-automatic wet cleaning by means of automatic retraction of the rotor during CIP cleaning, so that the cleaning media flow is defined and all areas of the diverter valve are cleaned.

The Coperion components are also often supplied through the established system integrators (e.g. Tetra Pak Processing, GEA and SPX).

An increasing number of system operators in all major dairy regions are asking their system supplier specifically if Coperion rotary valves or bulk material diverter valves will be installed.

Coperion's range is rounded off by the products of its sister company Coperion K-Tron that builds dosing systems for foods and their ingredients, especially for extrusion and mixing processes. Both companies with their combined workforce of around 2,500 have been owned by the US company Hillenbrand Inc. for three years. They have their own subsidiaries and dealerships around the world.



Jochen Sprung, Head of Sales and Business Development Coperion: Our components are EHEDG certified, they come in absolute hygienic design and prevent re-contamination (photo: Coperion)

Benefits of Orafti Synergy1 confirmed

BENEEO

Two new research studies, conducted by Professor Gary Frost and his team from Imperial College London, and funded by Diabetes UK, have shown three major beneficial effects of BENEEO's chicory root fibre Orafti Synergy1 (oligofructose-enriched inulin) in reducing the risk of diabetes. The first is in helping prediabetic people to lower energy intake and enhance weight loss. The second is in assisting prediabetic adults reduce fat content in their liver and muscle tissue and the third is in improving their insulin secretion after a meal. The researchers have concluded that (fermentable) chicory root fibres have unique metabolic effects that are of particular benefit to people at risk of diabetes. beneo.com

New cultures for white cheese

DSM

DSM introduced a new range of white cheese cultures to address consumer demand for a milder and fresher flavor. These cultures come as part of DSM's total solution, along with enzymes and technical support, that improve not just the taste, but also the affordability and shelf-life of white cheese.

DSM's total solution enables white cheese producers to extend shelf-life and reduce bitterness, whilst providing a good texture profile and the possibility to differentiate on flavor. It also enables a fast fermentation and accelerates ripening to increase production efficiency. A process scan to optimize production is provided, as well as a pro-active approach for controlling phage during culture performance in cheese production. Consisting of coagulants, cultures, lipases and technical support, the new range helps white cheese producers to create the next successful white cheese product. dsm.com



DSM introduced new cultures for milder and fresher tasting white cheese (photo: DSM)



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Detectability of metal detectable plastic bristles

Vikan



Author: Debra Smith, Global Hygiene Specialist, Vikan, Vikan A/S, Raevevej 1, DK-7800 Skive

Foreign body contamination of foods can be a safety or quality issue, or both. Regardless, if a food is contaminated by a foreign body, the repercussions for the food business can be expensive and damaging.

Metal detection is well established as a method for reducing the risk of metal fragments in commercial food products but

they are now also used to control the presence of metal detectable plastics.

The most recent addition to the metal detectable plastic product range offered to the food industry by some cleaning equipment manufacturers is the metal detectable plastic brush, incorporating metal detectable plastic bristles.

The detectability of the metal detectable plastic bristles will depend on a number of factors, including the;

- metal content of the bristle, both quantity and type of metal
- diameter/thickness of the bristle
- size of the bristle fragment
- orientation and position of the bristle in the food product
- conveyor speed
- food product
- detector used
- detector calibration
- vibrations

The influence of these factors is variable and accumulative and they will affect the detection threshold.

Consequently the ability of a metal detector to detect very small metallic objects is limited.

Investigations by Vikan sought to determine the metal detectability of metal detectable plastic bristles, as well as their durability and functionality, in terms of how well they clean.

In collaboration with Mettler Toledo, a multinational manufacturer of food industry metal detection systems, food industry standard metal detectable bristles were investigated with regard to their detectability using a Profile Advantage multi-frequency Metal Detector, with and

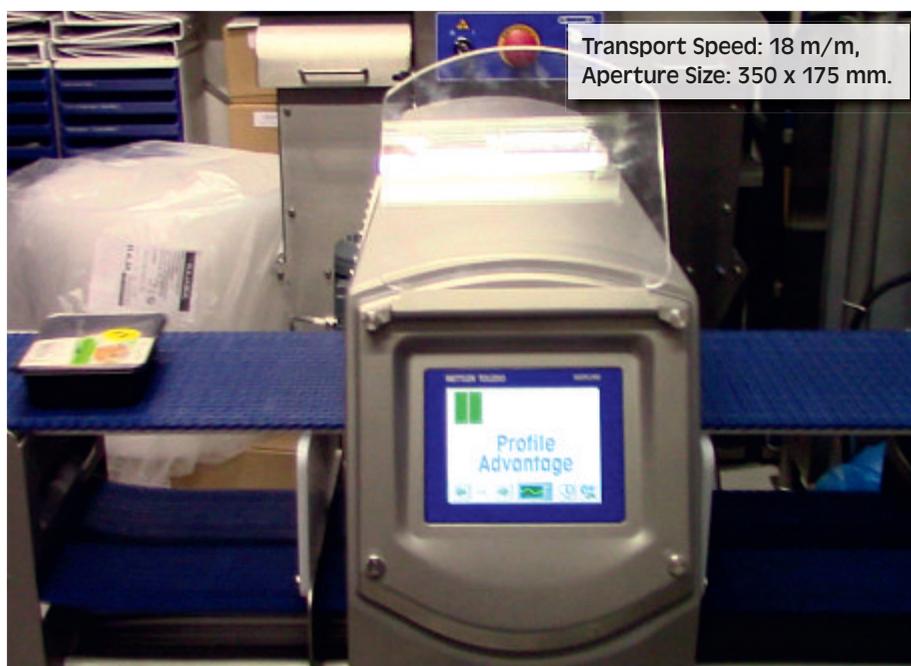


Figure 1. A Profile Advantage multi-frequency Metal Detector (Mettler Toledo, Denmark).

Table 1. Metal detectable bristle detection with and without the presence of food.

Bristle cross-sectional diameter (mm)	Bristle length (mm)	Bristle orientation		No food/packaging	Packed sugar (dry)	Packed chicken breast (wet)
0.35	100	---		*1.8	N/D	N/D
0.50	100	---		*2.2	N/D	N/D
0.60	100	---		*2.5	N/D	N/D
0.35	50	---		N/D	N/D	N/D
0.50	50	---		*1.8	N/D	N/D
0.60	50	---		*2.3	N/D	N/D

*Minimum threshold for detection (equivalent to a ferrous ball of the same diameter)
 N/D – Not Detected

Table 2. Lengths of metal wire required to obtain a similar level of metal detection to that of a 1.5 mm spherical diameter ferrous ball. (Lock, 1990).

Ferrous ball (spherical diameter)	Pure steel paper clip (ferrous) 0.95 mm cross-sectional diameter	Pure copper wire (nonferrous) 0.91 mm cross-sectional diameter	Pure stainless steel wire EN 58/ AISI 304L (part ferrous) 1.16 mm cross-sectional diameter
1.5 mm	3 mm long	9 mm long	8 mm long

without the presence of a dry (packed granulated white sugar) food product, and a wet (packed fresh chicken breast), as shown in Figure 1.

Conclusion

Metal detectable plastic bristles were not detectable in the presence of food and packaging, as shown in Table 1.

Additionally, to achieve a similar detection to that of a ferrous ball with a spherical diameter of 1.5mm, metal wire lengths of between 3mm and 9mm would be required, as shown in Table 2.

Currently brushes with metal detectable plastic bristles are only available with bristle diameters of 0.35mm, 0.50mm and 0.60mm, i.e. much thinner than the metal wires assessed in Table 2.

It can be concluded therefore that even longer lengths of metal detectable plastic bristles would be required to achieve the same level of detection. For example, using the data

highlighted in Table 1 above, a metal detectable bristle with a cross-sectional diameter of 0.50 mm and a length of 50 mm gives an equivalent detection to that of a 1.8 mm ferrous ball.

Durability of metal detectable plastic bristles

Tests to assess the break strength and elasticity of metal detectable and plastic bristles were performed by Zwick Roell, Germany, using a Zwicki 5kN bristle pull test apparatus, as shown in Figure 2.

Results

Plastic (PBT) bristles were 68% stronger and more than twice as elastic as metal detectable bristles, as shown in Tables and Graphs 3a & b.

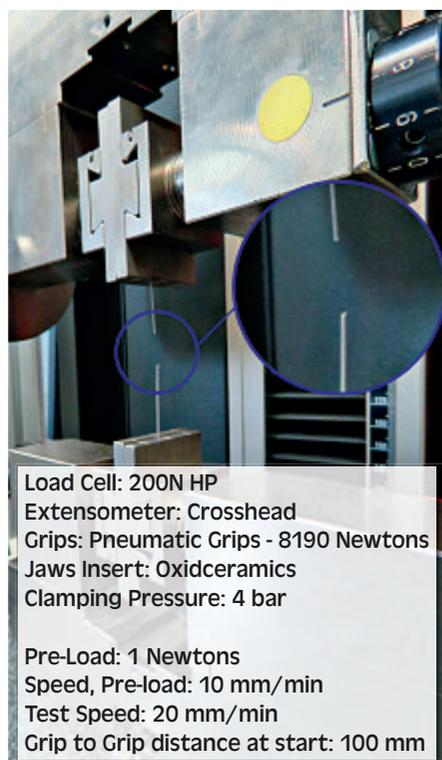
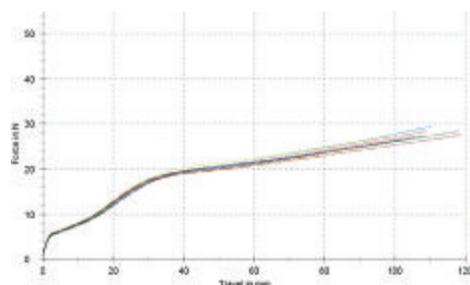


Figure 2. Zwicki 5kN bristle strength and elasticity assessment equipment (Zwick Roell, Germany)

Table and Graph 3a. 0.35 mm plastic (PBT) bristle strength and elongation.

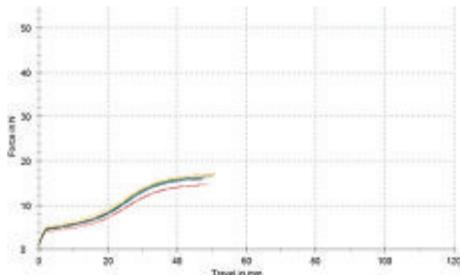
PBT green n = 10	F _{max} [N]	dL at F _{max} [mm]
\bar{x}	27.0	104.9
s	1.69	11.7
v _f [%]	6.26	11.11



F _{max}	=	Bristle Strength
dL at F _{max}	=	Bristle Elongation (elasticity)

Table and Graph 3b. 0.35mm plastic (PBT) metal detectable bristle strength and elongation.

PBT grey n = 10	F _{max} [N]	dL at F _{max} [mm]
\bar{x}	16.0	48.3
s	0.826	1.3
v} [%]	5.16	2.74



Functionality of metal detectable plastic bristles

The ability of metal detectable bristled brushware to clean a surface of a wet (tinned chopped tomatoes) and a dry (mix of milk powder and ground coffee)

food soil, was compared with that of a standard plastic bristled brush, using a robotic cleaning rig (Vikan, Denmark), as shown in Figure 3.

Results

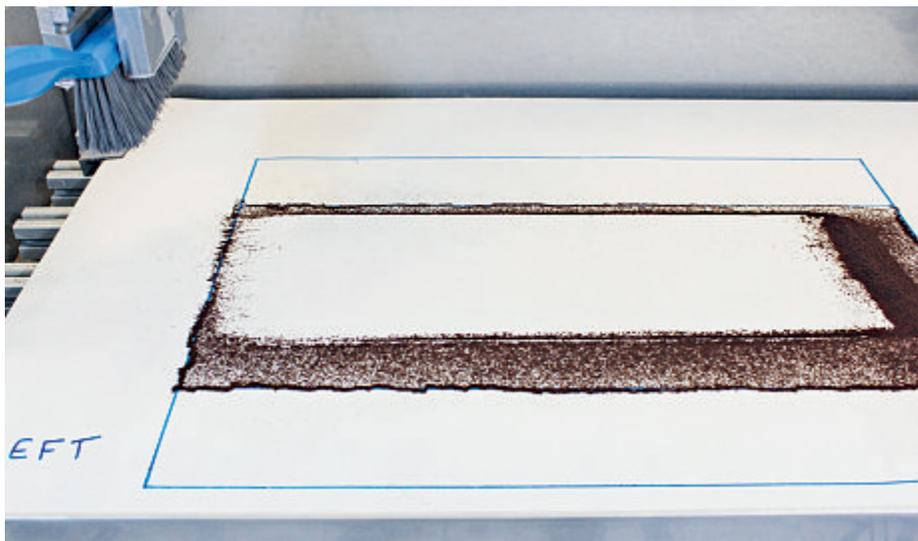


Figure 4a. Cleaning with metal detectable plastic bristled brush.

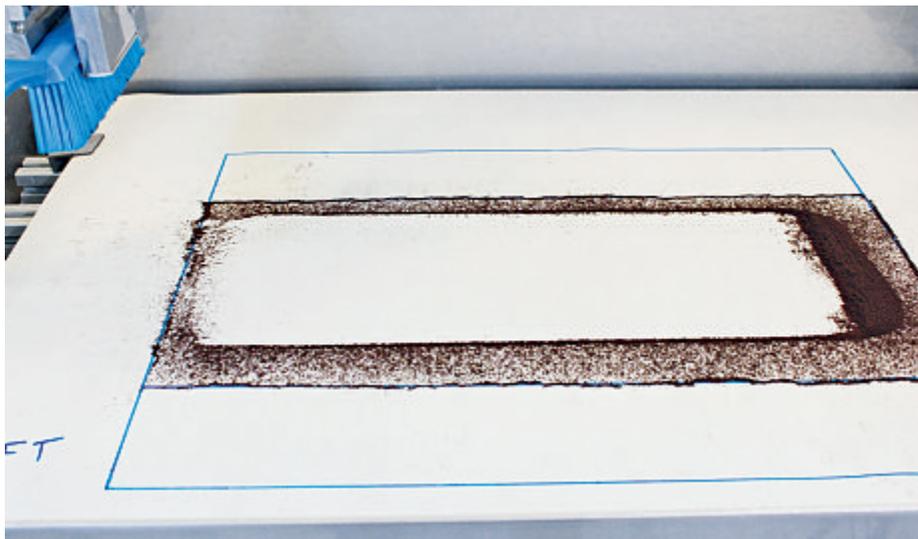


Figure 4b. Cleaning with a plastic bristled brush.

Conclusion

Based on visual assessment, the metal detectable plastic bristled brush was no more effective at cleaning than the standard plastic bristled brush, as illustrated in Figures 4a & 4b.

Discussion

Based on the findings of these investigations it seems unlikely that metal detectable plastic bristles would be detectable in a food product, especially given previously mentioned detector and product accumulative variances, and that the plastic fragments are likely to be small. To detect these small fragments the metal detector sensitivity would need to be set so high that most products would be rejected. The use of metal detectable plastic bristled brushes may in fact increase the risk of bristle contamination of food, due to their reduced strength and elasticity, and a perception that any metal detectable bristles will be controlled via the metal detector.

Additionally, metal detectable plastic bristled brushware offers no advantage over plastic bristled brushes with regard to cleaning efficacy. Currently only relatively thick metal detectable plastic bristles are available, i.e., >0.35mm diameter. However, fine bristled brushes are more effective at removing fine powders, including some allergens. Consequently, the use of thicker bristled brushes may result in poor cleaning efficacy and therefore, increase the risk to the business/consumer.

As an alternative to the use of metal detectable plastic bristled brushware, it is suggested that brushes are regularly inspected and replaced, in order to minimise the risk of foreign body contamination from this source, and that brushes of a contrasting colour to the food product be used to enable the plastic bristles to be seen more easily in the product. Additionally, the use of a brush that minimises bristle loss through good construction, is advisable.

Visit <http://www.vikan.com>.

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Acknowledgments

Vikan would like to thank Mettler Toledo and Zwick Roell for their collaboration during this study.

Stabiliser specialist continues on growth course

Hydrosol adds more production capacity

Growth continues at Hamburg's Stern-Wywiol Gruppe. With an increase of 12 percent, the family-owned company made a record 444 million euro in revenues last year. Its Hydrosol subsidiary was a big part of it. Hydrosol, which specializes in custom stabilising and texturing systems, can look back on a very successful year. With a view to the future, the company is now expanding its production capacity. Managing Director Dr. Matthias Moser: "Our production plant is one of the most modern of its kind in Europe, and our capacity as it stands is 30,000 tonnes of ingredients a year. Our customers in over 50 countries expect the best, and in order to provide it to them with the highest



Hydrosol will increase production capacity in Germany by a new greenfield site (photo: Hydrosol)

level of innovation, flexibility and service, we are now investing in a second facility located in close proximity to the existing

one. The groundbreaking will take place soon, and production will start during the coming year." hydrosol.de



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Flexibility is a trump for TINE

Elopak's new Flex platform machines make liquid milk filling easier

Elopak is now in the middle of a phase to introduce two new platforms of filling machines for fresh and ESL products to the market. One of the first commercial installations of the new fillers took place at the TINE dairy plant in Sem in the Oslo area. IDM had the chance to have a closer look onto it.

Gro Rommen Anderssen, head of the Sem plant, explains that TINE produces a great many varieties of liquid milk products. This is an answer to consumers' wishes for more regionality and transparency. Spread all over Norway, TINE supplies different regional packaging designs to the market that add up to seasonal products like the mountain milk and cream 'Stolsmjolk'. The Sem plant alone manufactures 14 types of liquid milk and has to manage three to four product changes per line per day. The suitability of the two old filling lines supplied by Elopak no longer met the needs of the growing portfolio and complexity so TINE looked for a more flexible set of filling equipment – which they found in Elopak's new machine platform built in Japan by Shikoku Kakoki.



Gro Rømmen Anderssen, head of the TINE plant in Sem, together with Andreas Weselka and André Dybvik from Elopak (photo: IDM)



TINE dairy in Sem has been running two new Elopak Flex filling machines since mid 2015 (photo: IDM)

The Flex machine platform

Olav Klonteig, Director EQS Application at Elopak, highlights what makes up the essence of the new Flex machine platforms (marked in the machine designation with an additional "F"), one for standard sizes between 250 ml and 1,136 ml and one for large packs from 1.5 to 2.0 ltr: standardisation and simplification of the machine construction, greatly improved hygienic design, increased efficiency in terms of TCO and overall greater flexibility. In fact, a changeover from one filling size to another takes only a few moments thanks to pre-set recipes and servo drive technology that also make the machines less noisy. A sophisticated HMI together with data capture assists the operator in all matters

from feeding the right number of carton blanks into the package magazine up to troubleshooting. The two-lane fillers operate each lane independently from the other. It is possible to fill two different packages or products simultaneously or to run one lane while doing product maintenance etc. on the other. Platform 1 comes with a capacity of 7,000 packs/hr in a one-lane and 14,000 packs in a two-lane configuration. Platform 2 offers throughputs of 5,000 and 10,000 packages per hour, respectively. And maybe even as important to processors as flexibility is that the new fillers require about 25% less floorspace compared to the "old" Elopak machines.

The carton blanks are erected in the normal way but for disinfection Elopak has



Olav Klonteig, Director EQS Application at Elopak: Main characteristics of the new Flex machine platforms are standardisation and simplification of the machine construction, greatly improved hygienic design, increased efficiency in terms of TCO and overall greater flexibility (photo: IDM)

chosen a new concept. Gaseous H_2O_2 (2% concentration) is blown into the empty package followed by a much stronger UV-C treatment than previously used in Elopak fillers. This has a number of advantages as much less disinfectant is used and complicated technology to remove residual H_2O_2 from the package and the environment is not required. Compared to the old Elopak fillers, hygienic design was improved in as much as 100 individual details.

The closures are evenly disinfected by UV-C and welded from the inside of the package by means of ultrasonic. A new top sealing design makes sure that the machine can produce different package formats.

The Pure Pak Sense carton

All new platform machines can produce the Pure Pak Classic carton as well as the new Pure-Pak Sense carton that comes with a rounded smooth front panel without score lines and an embossed head zone for a unique first touch feeling. The package also has folding score lines for a complete emptying just like a tooth paste package. Swedish Skånemejerier made the start for Sense in 2014 highlighting exactly what the positive effects are of a package that completely empties were. Meanwhile, Pure-Pak Sense has also hit the markets in Norway, Ireland, Germany, The Netherlands and Estonia. For more info on the new carton, look at <http://purepaksense.com/>.

Performing as expected

TINE runs the 2-lane filler at 13,000 packages per hour while the one-lane machine produces 6,500 mostly small packages of cream per hour. One operator is required for each lane as they also have to run the trolley loaders. The installation of the new fillers that replaced two 2-lane machines took place over a weekend. As TINE chose to re-design the complete filling operation, the plant stood still for one calendar week in 2015. Since then, the two machines that together have three lanes have been operating smoothly. Petter Bjelland, Technical Manager at the Sem plant, told IDM that he is very satisfied and that the machines perform as he had hoped. They even came through the Easter season with its extreme production peak without any problems. All in all, the plant has gained more flexibility and product output even though it now uses one filling lane less than before.

TINE

TINE SA is a co-operative that collects 80% of the milk in Norway. Having a regulator status, the company has to provide competitors with raw material as well as it must buy surplus milk from them. TINE employs about 5,300 staff in 31 plants spread all over the country and collects 1.454bn litres of cow's milk from 12,100 farmers. TINE manages milk collection and the complete distribution of products using its own fleet of trucks and vehicles. The sales figure of 2015 stood at NOK22.2bn.



Petter Bjelland, Technical Manager at the Sem plant: I am satisfied with the Flex machines, they perform as I have hoped (photo: IDM)

The plant in Sem is one of TINE's larger liquid milk facilities, processing 35m litres of milk p.a. producing 33.5m packaging units. Out of 140 employees, 44 work in production. The products – liquid milk and cream, both standard and organic, and sweet curdled milk and cream – are distributed in a 150 km radius. All products are pasteurised and have a 14 days shelf-life.



Via this QR code, you can access a video of the Shikoku flex filling machines



The two-lane S-PSF130UC machine can fill two different products simultaneously (photo: IDM)

Filling machines with speedy format changeover times GRUNWALD

GRUNWALD is going to show two rotary-type filling machines at Fach-Pack which are characterised by unbeatable format flexibility. One of the most important innovations is the possibility of carrying out the format changeover within less than 3 minutes.

GRUNWALD is going to exhibit a 1-lane bucket filling and closing machine type HITPAC XL (handling 3 different round bucket sizes) and a 4-lane cup filling and closing machine type ROTARY 20.000 for filling in two different oval cups with foil seal lid closure and snap-on lid closure at speeds of up to 11,000 cph. grunwald-wangen.de



Unique: the GRUNWALD stand designed as Allgäu Alpine pasture scenery (photo: GRUNWALD)

Expansion in France AZO

With an investment of around 2 million euros, AZO is laying the foundations for further expansion of its market position in France and on the European market as a whole. With the French sister company's premises bursting at the seams, it was decided to invest in a new building in Vallet. Apart from offices and storerooms, the building provides two meeting rooms, showrooms, test labs and 1,000 sqm warehouse space.

There are currently 20 permanent employees at AZO EURL; in 2015 sales of around 6.8 million euros were achieved there.

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NÜRNBERG MESSE

Step-by-step guide to DA3+ mix-proof valve maintenance

SPX FLOW

SPX FLOW invests a great deal in ensuring comprehensive support services for its solutions. The latest of these is an online video that takes the user through the standard maintenance procedures for its Delta DA3+ double seat mix-proof valve.

APV Delta DA3+ is a double seat, mix proof valve with seat lifting that is designed to offer superior hygienic performance and is widely used in brewing, beverage, dairy, chemical and pharmaceutical applications. All wetted parts of the valve can be comprehensively cleaned to ensure hygienic operation and the unit has two independent seat sealing arrangements to stop incompatible fluids from inter-mixing. Leakage is also minimized and any that does occur is safely drained off through a large cavity to atmosphere when the valve closes.

As with any valve, regular maintenance is required to ensure continued optimum performance and reliability. A new video released by SPX FLOW, gives customers a clear and detailed walk-through of the standard maintenance procedure. It shows what tools are required and takes the viewer through every stage of the maintenance process with detailed instruction and unambiguous video imaging. The video enables personnel to carry out maintenance with confidence, minimizing potential risks of damage to the valve and ensuring work can be carried out in a timely manner without issue.

The Delta DA3+ Double Seat Mix-Proof Valve maintenance video can be found on YouTube: <https://youtu.be/0-hwNBZ1T4s>



(photo: SPX)



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Adding Value

Nordic Dairy Congress



The programme for the 44th Nordic Dairy Congress is in the making. The NDC will be held on 7th to 9th June next year in Copenhagen with the CEO of Scandinavia's largest dairy company Arla Foods a.m.b.a, Mr. Peder Tuborgh as keynote speaker.

The Nordic Dairy Congress 2017 will be held in the heart of Copenhagen, Denmark from June 7th to 9th. The theme of the congress is 'Adding Value' and is framed as one plenary session divided into two parallel sessions as well as some sections for the participants to dig further into topics of their specific interest. The headings of these sections are: improving efficiency; all-time high food safety; green solutions and healthy dairy products.

Furthermore, the programme will be based on the consumers seen as drivers of the needs of the dairy industry for development, efficiency and renewal. In order to achieve this purpose the Programme Committee is planning for a highly dynamic programme with flash talks from PhD-students, who will introduce the newest trends within technology and science, combined with some broader discussions. For instance, the plenary session on the first day of the Congress will be discussing how consumer trends add value to the dairy industry, and a panel debate will conclude the conference wrapping up the new knowledge and findings.

The mission of the Programme Committee is to create a programme that:

- Has a high professional and scientific level
- Has a broad appeal to the Dairy Industry and is application-oriented
- Is attentive and adds new relevant knowledge and competences
- Provides knowledge, vision and understanding of the dairy industry
- Creates new initiatives in the dairy industry and among the Congress participants
- Provides a framework that enable the participants to share knowledge and network
- Contributes to a global view and mind-set

Target groups of the conference

- The dairy and food industry
- The supplier industry
- Consulting companies
- Universities, dairy schools and research institutions related to the dairy sector

The professional level requires that the participants have an academic/technologist education or is skilled to these levels.

For further information and registration:
www.nordicdairycongress.com

State of the Art and network

For the opening session the Congress will have such prominent speaker as the CEO of Arla Foods amba, Mr. Peder Tuborgh.

Asked why people should participate in the Congress, the president of the Nordic Dairy Technology Council, Søren Jensen, explains that “First of all to be updated on what is new within the dairy sector seen with an international lens and introduced by acknowledged scientists and high ranked special-

ists from the industry. Secondly, the Congress is a unique venue to share the passion for dairy and a venue for knowledge sharing and networking as well as an opportunity to open up for a global mindset and mobility – not to forget about the reencounters with old dairy friends.”

The Nordic Dairy Congresses have been celebrated every second or third year for the past 100 years almost. The first congress was held in Oslo, Norway in 1920 and the 2017-Congress will be the 44th.

The Programme

7 June 2017 13.00 – 18.00 p.m. (individual scheduling)	8 June 2017 9.30 – 17.00 (registration from 8.30)	9 June 2017 9.30 – 16.30		
Bus service from the Copenhagen Airport Registration and visit at Chr. Hansen A/S plant in Avedøre	Opening session Main speaker: CEO Peder Tuborgh, Arla Foods Amba	Opening speech		
	Plenary session How do consumer trends add value to the dairy industry?	Session 3 Green solutions	Session 4 Healthy dairy products	
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Internet: www.international-dairy.com

OBJECT MANAGER:

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

EDITOR:

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

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

Food Ingredients:

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

Ferda Oran, Middle East, ferdaoran@hotmail.com; Jack O'Brien, USA/Canada, ex-
cutecmktg@aol.com; Joanna Novak, CEE, Joanna.Novak@sparks.com.pl; Tatyana
Antonenko, CIS, t.antonenko@molprom.com.ua; Mario Schacher, South America,
supermario@gmx.com; Brian Norwood, Australasia & Pacific, ttoronto@bigpond.
net.au; Chris Walkland, UK & Ireland, chriswalkland@ntlworld.com

PRODUCTION:

Stefan Seul, Direct line: +49 (0) 26 33/45 40-17, Email: sts@blmedien.de

GRAPHICS, LAYOUT:

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

ADVERTISING MANAGER:

Heike Turowski, Office Marl/Germany, Direct line: +49 (0) 23 65/38 97 86
Fax: +49 (0) 23 65/38 97 47, Cell phone +49 (0) 1 51/22 64 62 59,
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PUBLISHER'S REPRESENTATIVES:

Italy: Bruno Frigerio, Via Roma 24 20055 Renate Brianza (MI)/Italy,
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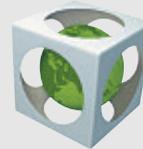
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