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International Dairy Magazine

PROCESSING · INGREDIENTS · PACKAGING · IT & LOGISTICS

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We correct a mistake on page 42 in issue ½ of IDM: The caption of the picture in the first column has to be "Satro's technologists have designed cocoa replacement systems based on carob powder for desserts (Lacmiral)."



Lonza announced a global commercial partnership with Lipogen for the exclusive rights to sell PS (photo: Lonza)



IDM
International Dairy Magazine

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Uncertainty for certain

INTERDEPENDENT MARKETS

The only certainty these days is uncertainty, it seems. Milk prices have gone from historical heights to never before seen lows just to bounce back to heights. It is not so much sheer hunger of the zillions of people on earth that drives dairy sales but availability of money. And money gets shorter all the time, all over the globe. Yes, there is a growing middle class in the Asian area but what if they simply cannot afford to buy milk products anymore for a certain time as money is washed away by the next best financial crisis. Crises of all sorts are so easily made these days. As it seems, the financial world loves crises, times where easy money can be made if you just bet on the right horse. You may leave out of view all the others, possibly dairy consumers, who just disturb the overall nice picture...

Yesterday it was Fukushima, today it's the oil price and tomorrow it might be Iran's nuclear program that causes the desired crisis. Let alone de-facto bankruptcies of whole States in Europe. The dairy industry must face one fact: it is operating in a most unpredictable economic environment. As do dairy farmers. Markets are so interdependent these days that one really cannot plan a business for longer than a few months in reality, thinks *Roland Sossna*.

NEWS

Faster eye formation and mild flavor in Swiss cheese

Chr. Hansen

OpenIT PS-60 makes for faster eye-formation and mild flavor (photo: Chr. Hansen)



Due to a growing demand for sliced cheese products, Swiss cheese makers must ensure fast and controlled eye formation (formation of holes). On top of this technological request, consumers prefer a distinctive nutty flavor together with a light sweet mouthfeel. Chr. Hansen now introduces the new propionic (organic acid) culture OpenIT PS-60. The culture series effectively provides the typical distinctive mild sweetness to propionic cheeses, in addition to a powerful gas release allowing for perfect eye formation.

Key properties of the new culture are its capabilities of controlling and standardizing the fermentation process. The benefits are both a high and fast gas formation – and thus a short ripening time – and a well-balanced sweet,

nutty flavor with low pungency due to its low lipolytic activity. The new culture is cost-efficient due to the high concentration and high activity per cell. The eye formation should be effective after 14 – 20 days depending on the ripening conditions.

Lastly, PS-60 is a fast lactate fermenting culture, robust to different ripening parameters. Good growth is recorded even in difficult conditions – at low temperature as well as in high salt or low pH environments.

The PS-60 Direct Vat Set culture is available in frozen format in carton sizes fitted to the average vat sizes of the target dairies. The Direct Vat Set production technology offers a number of advantages in terms of flexibility of use, consistent performance, possibility of using customized culture blends, and no investment in bulk starter equipment. chr-hansen.com

The exquisite factory

IMA Industries



IMA Industries' „Exquisite factory” can be seen at ima-industries.com

“Exquisite factory” is one of the fundamental principles that has always guided the IMA Group, a world leader in automatic machines for 50 years. It’s also the base of the business philosophy of IMA Industries, a division dedicated to the processing and packaging of food products, cosmetics and toiletries.

IMA Industries includes divisions and companies that are recognised as leaders within their individual markets: Tea & Coffee Division for packaging tea, herbs and coffee in filter bags and pods; Gima for packaging tea and coffee in capsules, chewing gum and sweets in innovative packs, and for the high level of assembly technology; Corazza specialised in lines for soup cubes, butter and processed cheese in various formats; Stephan Machinery for processing dairy products, convenience food and confectionery; BFB Division with its wide range of end of line machines;

and Revisioni Industriali for perfectly overhauled second-hand machines.

Each of these companies has always offered its solutions with a high level of quality and technology, but now, under IMA Industries, they are part of a Group capable of offering comprehensive and integrated solutions and services, thanks to the synergy created between the various strategic and operative departments.

This is where the “The Exquisite Factory” comes into play. It is the motto that presents the Group as a coherent set of people working together towards a shared goal: to provide top quality, integrated solutions that can even be described as “exquisite”.

Through the dedicated mini-site exquisitefactory.ima-industries.com you can enter the “factory” and get to know each company and division in the short films starring

employees, who have chosen to represent their company and familiarise the world with the people working at the Group.

The commitment and passion shown in the films are a testimony to the sentiment of the over 800 people at IMA Industries, including over 300 engineers and technicians, who design and manufacture efficient machines and services that are cutting-edge and reliable.

IMA Industries has excellent direct relationships with its clients throughout the world, offering a far-reaching technical support network to meet every customer’s production requirements.

At the website ima-industries.com you will discover a wide range of processing and packaging solutions, together with all the contact information you will need to meet your market requirements promptly and efficiently.



Record exhibitor number Anuga FoodTec 2012

From 27th to 30th March 2012 the international food technology sector will once again meet at Anuga FoodTec in Cologne. Anuga FoodTec offers the international food business an information and purchasing platform that covers the entire spectrum of technology and investment requirements for production in all segments of the food industry. With almost 1,300 exhibitors (+ 16%) from 35 countries, Anuga FoodTec will be setting a new record turnout.

27 specialist forums will address topics and questions of current interest to the sector, with presentations by leading research institutes and associations. Anuga FoodTec 2012 will also be accompanied by top-class conferences organized by EFFoST, EHEDG, IFW and Nova Institute.

For the first time, Anuga FoodTec will stage a Careers Day. This initiative will enable closer contact between the exhibitors at Anuga FoodTec and students and graduates of related subjects, thus strengthening the sector's recruitment strategies. Careers Day will take place on Friday, 30th March 2012, from 9:00 a.m. to 6:00 p.m.

An overview of the entire supporting program, including detailed information on the topics, speakers, places and times, can be found on the Anuga FoodTec website at anugafoodtec.com.

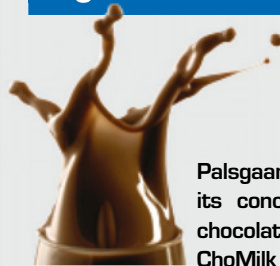
Anuga FoodTec will take place from Tuesday, 27th to Friday, 30th March 2012. For four days it will offer a concentrated overview of machines and equipment as well as services for the food and beverage production industry. The trade fair is open to trade visitors only. Anuga FoodTec will be open daily from 9:00 a.m. to 6:00 p.m.

anugafoodtec.com, in addition to on-line visitor registration, provides afforda-

ble and time-saving assistance with travel and hotel arrangements. The "Matchmaking" online tool also enables trade visitors to research various exhibitors and product segments before the trade fair and to contact exhibitors directly.

IDM has compiled information on must-see exhibits on the following pages. Like always, the information is categorized for your convenience.

Ingredients



Palsgaard will introduce its concept for UHT soy chocolate drinks Palsgaard ChoMilk 199, which ensures a stable emulsion with a creamy and smooth mouth-feel (photo: Palsgaard)

Palsgaard: New emulsifier/stabilizer solutions for ice cream

Palsgaard will present ice creams with reduced content of saturated fats, containing the emulsifier-stabiliser system Palsgaard Mouldice 164 that gives a very creamy, heat-shock stable and slow melting ice cream.

In addition to the UHT soy chocolate drink concept Palsgaard ChoMilk 199, Palsgaard will also present its Palsgaard KP 10-008 for a refreshing drink based on acidified milk with extend shelf life from protecting the proteins at the low pH during final heat treatment. At the same time Palsgaard KP 10-008 is giving a creamy and refreshing product with a pleasant mouth-feel.

Palsgaard offers soy manufacturers the opportunity to develop new formu-

las for soy-based drinks and ice cream and experiment with the product all the way from soy bean to final product at the company's pilot plant facilities in Singapore. palsgaard.dk

Processing & Components



GEA TDS present themselves as market leaders in process technology for high-hygiene sectors (photo: GEA TDS)

GEA TDS: Optimized process solutions

GEA TDS is one of the world's leading suppliers of process technology for the dairy, food and fruit juice industries, working closely with customers to develop efficient plants, process lines and systems for every application. The company brings together wide-ranging expertise in engineering, technology and automation. 180 engineers, out of a total staff of 330, speaks for itself. At Anuga FoodTec, GEA TDS will receive the Dairy Technology Award for their dynamic cheese recipe. gea-tds.de

IMA Industries

IMA Industries will exhibit several innovative machines and complete lines:

Stephan Machinery will exhibit models of the Universal Machine range (UMC 5, UMSK 24, UM 70 and UM 74) which handle almost all the tasks involved in the production of processed cheese, convenience products and confectionary: from mixing and chopping, emulsifying and

THE EXQUISITE FACTORY.



We are **IMA Industries**. A group of companies made up of hundreds of people working in close synergy, each one of them with their own skills and specialization, to project, manage and produce complete lines for the packaging of tea, coffee and confectionery, and for the processing and packaging of dairy, convenience food, bakery, confectionery and cosmetics.

Every single company is a landmark in its own field. Together, all of them form a worldwide leader in terms of innovation, capability of rapidly meeting the market's requirements and reliability of the final product. All of this is guaranteed by the 50-years experience of the IMA Group, of which IMA Industries is a part.

Take a seat in our factory, and taste the IMA Industries solutions.
We are sure you'll find them **EXQUISITE**.

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Hall 7.1 - Stand B011 / C018

IMA INDUSTRIES
Innovation in Modern Automation



Varivent mixproof valves in a valve matrix equipped with feedback system T.VIS A8 (photo: GEA Tuchenhagen)

vacuum deaeration to heating and cooling. The Universal Machines are available for batch sizes from 2.5 up to 170 ltr. and all share one important characteristic: versatility. Stephan Machinery will also exhibit the Combitherm CT 800, which is ideal for efficient processing of dressings, purred food and baby food as well as spreads, paté and processed cheese, in line with the Microcut MCHD 180 and the Contiline CL 100, a continuous line for the dairy and convenience food industries, in line with the Microcut MCH20 N. Finally on display from Stephan Machinery, the Microcut MCH 15 and MCHD 150 which are high performance micro cutters for thick featured and highly viscose products like sausage, meat, fruits and vegetables.

Corazza will exhibit the PDP/V + 16/V2, a high-speed pressed cubes line which is very efficient and reliable. Finally on display: the C960, a complete automatic tube filler manufactured by IMA Safe Co.ma.di.s., which is suitable to handle aluminium, plastic and laminate tubes containing food products. The machine will be shown equipped with automatic feeding unit, aluminium tubes closing unit and PLC with programming visualizer (H.M.I.). The C960 reaches a speed of 60 tubes per minute. ima-industries.com

GEA Tuchenhagen: Process components

GEA Tuchenhagen will present the new Varivent mixproof sampling valve, suited as fully automatic sampling and dosing valve. This valve can easily be fitted to a tank wall or be connected to a standard Varinline housing. In the T-smart valve series, new leakage-proof butterfly valves will be shown.

Additionally, Tuchenhagen will show the new valve feedback system T.VIS A8

for all valve series. Fast automatic initialization and reliable commissioning as well as optimized energy consumption are the characteristics.

The motor driven orbital cleaners TMC 85 and TMC 45 complete the existing Varipure program range. They operate with a continuously adjustable pressure of up to 25 bar and flow rates of 0.5 to 30 m³/h.

The product range of GEA Tuchenhagen-Variflow centrifugal pumps series TP (non self-priming) and TPS (self-priming) has been enlarged. 12 types operate in the flow volume range of up to 210 m³/h and achieve pump heads of up to 90 m, available with motor power up to 45 kW. tuchenhagen.com



KI-DS Single seat valve and aseptic Double seat valve Gembra (photo: Kieselmann)

Kieselmann Fluid Process Group

Kieselmann present the new valve series KI-DS. These valves have a compact design, 3 actuators of different capacities are available. The actuators can be changed over either to air to open/spring to close or spring to open/air to close, simply by turning. The aseptic valves Gembra offer a combination of radial and diaphragm seal instead of a bellow.

AquaDuna develops and produces high-quality cleaning technology which is sold via Kieselmann. A highlight of the fair is the nozzle spraying head Dunos RB50. It allows a 360° cleaning of production vessels at defined 14 rpm. A novelty is the surge cleaner Dunos Rxx VAL for validate-able processes.

Kieselmann Anlagenbau plans and produces process plants and VA Food Processing develops and optimizes processes. A microfiltration plant will be introduced at the fair, which offers a “considerable increase” in value, especially for the milk-processing industry. Further highlights are the membrane filtration, Past+ microfiltration and Bacto+ MF process. kieselmann.de



The Hyghspin 90DF achieves discharge pressures of up to 50 bar (photo: Jung Process Systems)

Jung: High-pressure pump

Jung Process Systems will present the recently developed high-pressure pump Hyghspin 90DF. With this high-pressure pump, Jung is opening up market segments for twin-screw pumps that were previously normally reserved for other pump types.

The new Hyghspin 90DF is suitable for demanding pumping tasks. As an externally mounted, hygienic design twin-screw pump, it transports the medium extremely gentle and is easy to clean. Fitted with double-acting mechanical seals,

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*"Now at last you can say "cheese!"
with our processing and
packaging machines."*

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With cheese like that, at last you can smile. And you can keep on smiling when you place your production in our hands.

IMA Industries' companies have been operating in the dairy products' sector for years. In particular **Stephan** is known worldwide for its processing machinery and its turnkey, complete plants and automated solutions, whereas **Corazza** is the major global supplier of complete dosing and packaging lines for fresh and processed cheese.

Take a seat in our factory, and taste the IMA Industries solutions.
We are sure you'll find them EXQUISITE.



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IMA  **Corazza**
Dairy & Convenience Food Solutions



it is also safe to run dry and works with low pulsation. The double-suction 90DF model has two product inlets and one outlet and achieves discharge pressures of up to 50 bar. jung-process-systems.de

GEA Liquid Processing/ GEA Filtration

GEA Liquid Processing will be showing its range of Mixing Formula products and GEA Filtration equipment. The Mixing Formula range has high shear capability. The range was launched by the company only last year. The machine homogenizes and mixes in one operation. On the stand will be a lab-sized testmixer. The full range can handle production volumes of up to 15,000 litres in a single batch at viscosities up to 50,000 Cp. Alternatively the system can be used in a continuous process that will handle up to 40,000 litres/hour at lower viscosities. gea-liquid.com/geafiltration.com

SPX: Innovative process technologies

SPX will present several new, cost and energy-saving solutions for food and beverage processing. SafeWater is a new eco-friendly technology that revolutionizes cleaning procedures. Also on display will be the new APV Cavitorator which harnesses the power of cavitation for heating liquids without scaled build up and/or the mixing of liquids with other liquids, gasses or solids at the microscopic level to improve product quality and functional performance. The SPX Gerstenberg Schroder brand Nexus scraped surface heat exchanger is another innovative technology that uses CO₂ as a cooling medium. SPX will also showcase their new FX Systems (Factory Xpress) pre-engineered, self-contained skidded process plant units that make a wide range

The SPX Gerstenberg Schroder Nexus scraped surface heat exchanger uses CO₂ as a cooling medium (photo: SPX)

of process technologies and applications available on ultra-short delivery times for fast time to production, all with comprehensive automation options.spx.com

DSS: Green technology for a green industry

DSS Silkeborg will have a strong focus on the environmental and economic advantages, which the dairy industry can achieve by means of membrane filtration. DSS is an environmentally responsible company, which offers proven green solutions, promoting the green profile of the dairy industry and at the same time saving energy, water, and effluent charges.

Membrane filtration is the core competence of DSS, who know how to dimension and design the best possible plant for each process, and provide highly competent advice on the impact of individual production process stages on product quality, yield, environment, etc. In addition to being experts in the actual membrane filtration process, DSS has extensive knowledge of the many other aspects of dairy processing.

A fundamental part of DSS's business is to provide easy access for new and existing customers to spares, service, and expert knowledge. The 24/7 hotline team offers expert advice on membrane types, applications, process optimization, and membrane cleaning. dss.eu

Krohne: Inline measurement

Krohne will highlight two Optiquad versions for spectroscopic inline measurement of milk ingredients. Optiquad uses up to four optical methods.



Optiquad WW is used for continuous inline measurement of chemical oxygen demand (COD) in dairy wastewater (photo: Krohne)

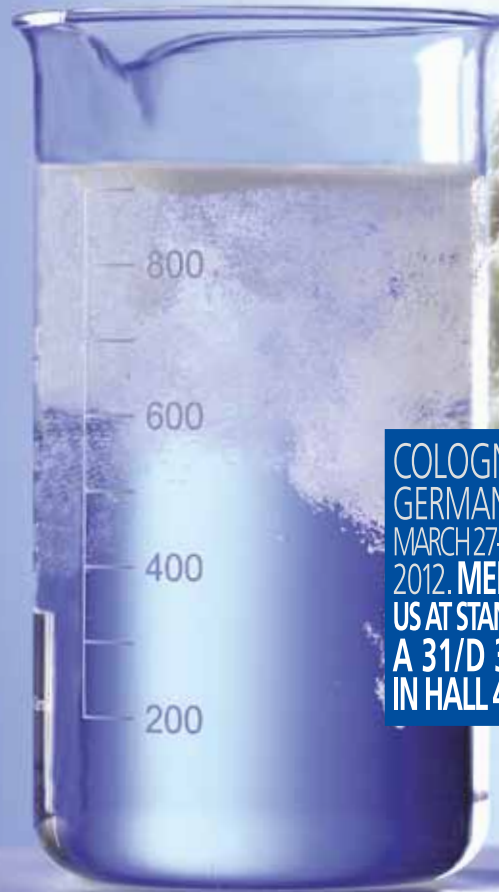
Optiquad-M can be used for inline measurement of protein, fat and lactose in milk products offering new opportunities for process optimization and quality improvement. The system measures the ingredients continuously and without contact. Typical applications include the increase of protein content in vat milk, standardization of fat content in liquid milk or setting a constant ratio of fat to protein in cheese making.

Optiquad WW is used for continuous inline measurement of COD in dairy wastewater. Optiquad WW uses up to four optical principles and up to 12 wavelengths. This results in an accurate, stable measurement over a broad measuring range, even with media of different consistencies or featuring very high COD loads. krohne.com

Norka: Energy efficient LED lighting

Norka, specialist in technical lighting with a high protection rating for extreme ambient conditions, now offers light emitting diodes (LED) for cold stores. Advantages of lamps with high power LED: the luminous flux increases when it gets cold. Frequent

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Krones offers a seamlessly integrated concept subsuming both process and filling technology for producing and bottling dairy beverages containing fruit chunks and fruit fibres (photo: Krones)



The range of luminaires POLLUX LED now comprises three identical LED luminaires with lamp packages from 8,200 lm to 19,200 lm (photo: Norka)

switching on and off, even in sub-zero temperatures, has no effect on the luminous semi-conductors at all; in fact, they are fully ready for operation instantly. Thanks to their extremely long service life, excellent cold resistance, high luminous power, fast switching properties without start-up time, and outstanding efficiency particularly at low temperatures, they have become the light source of choice for future-proof cold storage illumination.

Various series production lights of the manufacturer are available with LED equipment. This includes the new Pollux LED spotlight range offering large lumen outputs of 8,200 lm to 19,200 lm and polycarbonate cover screens that meet HACCP requirements. Combined with a variety of XENA lighting technology prism screens for asymmetric, linear or rotation symmetric light distribution with simultaneous, limited glare, the spotlight is a profitable alternative for many fields of application in the food processing industry. norka.de

Krones: Twin-flow concept for milk-based drinks

Krones has developed a process that covers all the qualitative aspects involved in milk drinks manufacturing, from production to filling. The process ensures exceptionally gentle treatment of milk-based drinks containing whole fruit chunks.

In order to preserve the structure of the fruit chunks and avoid product losses, there has to be stringent separation between the juice or milk-based mixed drink and the fruit chunks in the process technology as well. This means the milk base is treated in its own dedicated process, while fruit chunks, measuring up to 10 x 10 x 10 mm, are pasteurized in a separate shell-and-tube heat exchanger with interior cross-corrugated tubes. To ensure gentle product treatment, Krones has developed the entire process technology required.

Rigorous separation and gentle product treatment are also continued in the filling process, featuring Krones' new FlexiFruit pre-dosing equipment for fruit chunks or pulp. In the pre-dosing system, first the fruit chunks are inserted, and then the milk-based mixed drink is added in the main filler. This twin-flow process is already being used in the industry.

EvoGuard valves

Krones some time ago launched its EvoGuard series of valves, which includes all the valve types required in a beverage plant. The latest innovation is aseptic valves that are used as seat valves for hermetically dependable shutoff of pipes or as aseptic double-seat valves for separating media in aseptic and sterile processes. krones.com

Inotec: Process solutions

Inotec offers processing solutions for dairy, cheese and processed cheese products: mixing – emulsifying – conveying. The new Inotec Vario Mix Technology is suitable for all kind of mixing purposes, from sensitive products up to a very ag-

gressive mixing action. Two interacting spirals without central shaft allow for discharge with minimum remaining quantity in the mixer. For cooking – vacuuming – mixing – emulsifying, Inotec offers integrated processing equipment with automatic cutting set adjustment and auto-



The new Inotec Vario Mix Technology is excellent for all kind of mixing purposes – from sensitive products up to a very aggressive mixing action (photo: Inotec)

matic adjustment of the cutting position. This allows easy change from processed cheese with short and long structure without changing the cutting set components. inotecgmbh.de

GEA Westfalia Separator Group

GEA Westfalia Separator Group is presenting a new separator generation for milk skimming. For the first time in a medium capacity range, the new milk skimming separator MSI 140 with integrated



The new ecoclear is ideal for bacteria removal in the production of high-grade dairy products and is also suitable for producing cheese-making milk (photo: GEA Westfalia Separator)



direct drive will be presented. This separator will be combined with a standomat MC for automatic fat content regulation of cream and milk at the fair.

The new GEA Westfalia Separator ecoclear has likewise been developed for small and medium flow rates in the dairy technology sector – combinable for the first time in this capacity class with proplus. The proplus system enables extending the ejection intervals and consequently a reduction of the solids discharge. The ecoclear separator

is optimal for bacteria removal from high-grade dairy products and is suitable for producing cheese-making milk. Thanks to the self-cleaning bowl, the machine is suitable for fully automated cleaning-in-place.

The GEA Westfalia Separator ecoforce decanter series in 2-phase and 3-phase design with integrated summationdrive stands for high performance efficiency and reliability.

In addition, GEA Westfalia Separator Group will be showing its range of ceramic membrane elements for MF and UF.

A completely new service concept is also having its premiere at Anuga Food-Tec: serv&care for permanently high availability, process efficiency and budget security. westfalia-separator.com

**Flottweg:
Sedicanter on display**

At Anuga, Flottweg will exhibit a Sedicanter which combines the advantages of a decanter with those of a disc stack centrifuge. The machine was specifically

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At Anuga, Flottweg will exhibit the Sedi-center (photo: Flottweg)

developed for applications in which solids are too fine-grained to be processed in a normal decanter.

High performance disc stack centrifuges of the AC-series are reliable, sturdy and versatile. The machine features the Soft-Shot discharge system. Discharges are barely noticeable, avoiding wear on high rotating components.

Flottweg manufactures decanter centrifuges, disc stack centrifuges and belt presses. The company provides professional support with mobile test units, a pilot plant and a lab. The aim is to develop individual solutions in close cooperation with customers. flottweg.com

Cheese making & portioning

Treif: Space-saving industrial cheese dicer

Treif, developer and manufacturer of machines and systems for cutting and slicing food, will present its industrial cheese dicer Casan 200. The machine that is loaded fully automatically grates resp. cuts cheese into dices, sticks or strips.

With its opening dimensions of 240 mm/9 1/2" the machine can process two Euro blocks, one above the other, for producing mixed cheese. The machine is equipped with high-performance grating mode. Although designed to meet industrial demands, it is nonetheless very space-saving.

The cheese is fed automatically with just the hydraulic pressure necessary for a good cutting result with the set param-

eters (automatic feed pressure control). That is gentle on the product and energy as well as hydraulic oil can be saved compared with conventional systems.

The patented hygiene cylinder (with which the Casan is equipped as standard) makes product contamination with hydraulic oil technically impossible. No oil can get into the cutting chamber. Moreover, at TREIF only foodstuff hydraulic oil is employed.



Treif's Casan cheese dicer operates with sensors to control the frequency of the blade to achieve exactly the desired dice or strip size (sensor-based cutting technology). The result is a clear cutting pattern (photo: Treif)

Casan 200 can be operated from both sides of the machine thanks to the rotatable display. treif.de

Alpma: "Tradition meets Innovation"

Alpma will present its newest packaging machine for fold packaging, which offers a higher hygiene-standard, greater efficiency and more flexibility in format changes. Alpma subsidiary Servi Doryl will show the Bassine system. Alpma will further exhibit a combination of CUT 32 with density scan-

ner DS 32 as well as a CreamoProt installation. Cheese and drinks may be tasted at the CreamoProt bar.

Cheese making

Alpma presents complete solutions for curd preparation, thanks to the integration of the Bassine system from Servi Doryl. The particular shape of the plastic vats, as well as the patented robot cutting process ensure efficient curd cutting even for soft cheese. Optimum insulation allows for keeping the milk at perfect temperature. The vat system is suitable for small to medium-sized dairies. The construction of the system allows it to be used, where lack of space would prevent the use of other solutions.

Cheese portioning

Alpma presents a solution for precise portioning of Swiss-type cheese with the combination of the cutting machine CUT 32 and a density scanner DS 32. Thanks to its exact cutting technique, solid and hygienic engineering as well as its control by state-of-the-art servo technology, exact cutting results are ensured. Combined with the DS 32, even fixed-weight portioning of Emmenthal can be done.



Alpma will present complete solutions for curd preparation, thanks to the integration of the Bassine system from Servi Doryl (photo: Alpma)

The second generation Cheesixx as part of the holac-range of cheese cutting machines offers new features (photo: holac)



The cheese is first scanned at short intervals. Using this data, the cutting machine calculates the correct portion weight and divides the cheese bar. This enables the yield values to almost reach 100% – an improvement of nearly 20%.

CreamoProt

Visitors will be able to take a look at a CreamoProt pilot installation. The CreamoProt process for liquid processing of whey increases cheese yield to be considerably. Low fat products can be produced, which

possess an even creaminess, just as conventional (full fat) products do. alpma.de

holac: Cheesixx at AFT

holac will present their unique smallest cheese processing machine – the Cheesixx. The second generation Cheesixx as part of the wide holac-range of cheese cutting machines offers new features. The Cheesixx with the pneumatically powered chamber closing plate will suit a variety of different products, cut sizes and different types of cheese. Whether require small, medium-

sized, or large dice, sticks or “flakes”, or special shapes such as triangles or shreds are required, with its patented cutting technology, the Cheesixx handles all applications reliably and effectively.

Only the semi-automatic method in the loading of pre-cutting blocks or rest pieces and the lower output per hour differs from the AUT 200 which is the largest cheese-cutting machine in the holac range of products. It combines high performance and flexible use, and can be quickly adapted to new products. The

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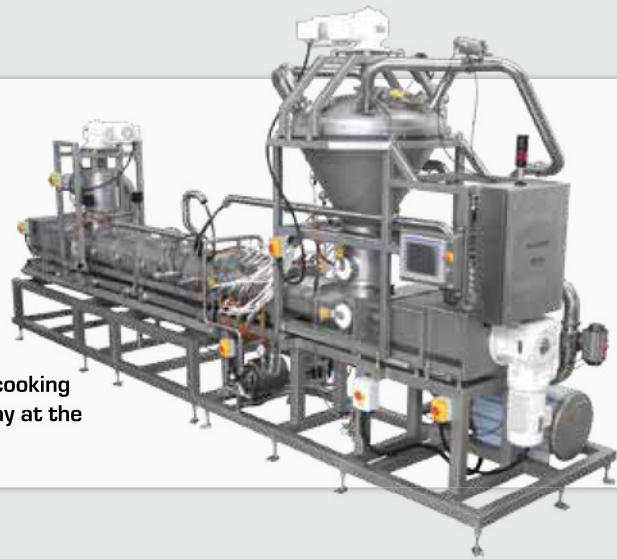
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Gold Peg's continuous Natural Mozzarella cooking & stretching system GPiCS will be on display at the Berief Innovativ stand



innovative product infeed enables this machine to process blocks, loose products and off-cuts. Its sophisticated control system is worthy of particular mention, as this enables it to be optimally integrated into processing lines.

holac cheese cutting machines are available as half- or fully automatic versions offering special features as power, quality, hygiene, safety, ergonomics and service. All equipment has been specially developed for cheese shredding and dicing. holac.de

Groba: Machines for cheese processing

Groba will demonstrate a multitude of solutions for processing of cheese. The company will exhibit cheese portioning machines, a complete cheese unpacking and cutting line and machines for cheese grating based on 35 years of experience. groba.eu



Alpha 533 F Cheddar Debagging Machine for removing thermoform packaging, sealed bags and shrink film from the cheese (photo: Hendriks)

Hendriks: Cheddar debagging

After debagging round, rectangular and Mozzarella cheeses, Hendriks Hands-Free Cheese Handling presents Cheddar debag-

ging. On show will be the Alpha 533 F Cheddar Debagging Machine, which removes thermoform packaging, sealed bags and shrink film from the cheese quickly, hygienically and in one single motion. Thanks to the patented film cutting method, no film residue is left behind on the cheese.

Another highlight of Hendriks's exhibition presence will be the display of fixed weight cutting of round cheeses with an adjustable centre-cutting knife. Hendriks's range of other cheese-processing machines, for e.g. de-rindng, portioning in fixed and variable weights and cubing of all types of cheeses, will be presented. handsfreecheesehandling.com

MTA: Cheese making equipment

MTA will be showcasing a 5,000 liter cheese vat that features a multitude of details designed to ensure gentle production of cheese curd. The vat is available in sizes 2,000 and 35,000 litres. MTA will also report on the completion of a complete Cheddar production line with a processing capacity of 3 t/h, with a 3-stage continuously operating curd drainage belt and two automated filling lines for block and barrel format (IDM was already at the cheese making plant and will report in an upcoming issue).



MTA - DRS curd draining belt before being installed at the customer's facility

Examples of customised, innovative lines also come from hard-cheese-making as well as from processed and Cottage Cheese in a shared presentation with Almac. mta-gmbh.de

Gold Peg: Mozzarella cooking systems

Gold Peg will show the RotaTherm and GPiCS Natural Mozzarella continuous cooking systems at Berief Innovativ's stand. The GPiCS is a continuous Natural Mozzarella cooking & stretching system allows for ingredients to be added to natural Mozzarella. GPiCS is an automated fully hygienic enclosed system that has no bath cook water and very low shut down wastes. Fast & full CIP of the system is standard. The RotaTherm Continuous Cooker produces processed cheeses, hybrid Mozzarella varieties, sauces, baby food etc. It has a flexible processing set up for the optimization of the processing conditions, incl. pasteurization, UHT & aseptic. berief.de

Filling & labelling

Grunwald: New generation of rotary-type cup filling machines

Grunwald will present the new generation of rotary-type cup filling machines



Grunwald's stand will again be designed in the style of a typical Allgäu mountain pasture (photo: Grunwald)

Ozone SIP unit for sterilization of cups and bottles supplied by Fischer Planning



Rotary for the first time. In addition a 6-lane inline machine with a production speed of 18,000 cph as well as a bucket line with “one touch quick-change system” and a 2-lane, compact rotary-type machine Hittpac AKH-019 will be shown.

At the moment investments totalling €5m are being made in order to build modern company premises. Under the aspect of sustainability new space for storage, offices, the design department and reception will be created in order

to achieve a further increase in capacity, efficiency and productivity. Until the end of 2012 Grunwald expects an increase of the number of employees of 20 - 30 %. grunwald-wangen.de

Fischer Planning/Beth-El Industries: Integrable sterilization with ozone

Fischer Planning/Beth-El Industries will introduce a brand new ozone sterilization module for cups and bottles that

can be integrated into filling/packaging lines, both in new or existing machines. The ozone gas is produced right on site, standard electricity (230 V) is enough to power the gas generator. Each cup will be flushed with filtered oxidant (Ultra Low Penetration Air, 0.3µm), followed by suction cleaning and neutralization of the disinfectant. The unit can likewise sterilize closures. All processes are running fully automated. fischerplanning.com



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Processed cheese



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Thanks to new intelligent drive systems and further optimisation Ampack Ammann offer double index filling machines with a guaranteed speed of 44 cycles/min (photo: Ampack Ammann)



Nedpack is launching a new vertical buffer system

Nedpack: Space-saving buffer system

Nedpack is launching a new vertical buffer system. The system was developed based on the product elevator Prorunner mk5. Main advantage of the buffer system is its use of space. A traditional, accumulating roller conveyor will often require a large number of running meters, while the Prorunner mk5 only needs a few square meters. By adding additional product carriers, the machine cannot only be used to bridge height differences but also for product buffering. nedpack.com

Herrmann Ultraschall: Packaging of cheese

Ultrasonic sealing ensures a tight seal even if contaminants are present in the seal area: the vibrations in the ultrasonic frequency of 20 – 35 kHz literally beat the product traces out of the sealing area. There is no risk of entrapped contamination – especially important when packaging and sealing grated cheese.

Ultrasonic technology generates the required temperature for the sealing

process from the inside out. The low heat input protects the fillings from thermal stress – the technology is therefore particularly suited for cheese and chocolate. The integrated process control by storing each sealing process allows complete quality control. The “cold” ultrasonic tools also consume less energy, while the sealed seams reach maximum strength immediately after the sealing process. Significantly narrower seams and the use of composite films with reduced complexity are possible. herrmannultraschall.com

Ampack Ammann: A bundle of innovations

Ampack Ammann will show a bundle of innovations for the dairy business:

■ **Carousel filler:** By integration of automatic cleaning manifolds with product change function for the dosing systems as well as the possibility of an integrated check weighing system for an automatic weight correction, the extremely flexible carousel filler is, according to Ampack, lifted to a new level of automation.

The use of state of the art drive technologies in combination with more possible cup configurations leads to an increase of capacity of this machine of approx. 20% without compromising flexibility.

In the area of innovative dosing methods, the product presentation for side by side dessert products was optimised. The filling capacity for six-pack cups was increased to 5,400 six-packs cph.

■ **Inline filling machines:** The new 12 lane format flexible cup filling machines for cup diameter 75 and 95 mm equipped

with 3 dosing systems, achieves format change times of less than 15 min and has a capacity of up to 28,000 cph. This filling machine gives dairies new possibilities for serving changing markets. Thanks to new intelligent drive systems and further optimisation, Ampack Ammann offer double index filling machines with a guaranteed speed of 44 cycles/min.

A further highlight is the save and reliable filling of aseptic dessert products in combination with cereals on any of the Ampack Ammann machine types.

■ **Bottle filling machines:** In the fast growing market for clinical and health care beverages Ampack Ammann has strengthened its leading position in Europe and has increased the level for aseptic reliability and capacity again by further innovations. Linear fillers are available in an output range from 6.000 – 36.000 bph. For each individual target market the adequate machine size is available in typical Ampack Ammann quality and flexibility, the company said.

■ **Sensocap:** The new screw cap concept Sensocap increases its distribution in the international market. With a new Sensocap-closure, which now can be used on HDPE and PET bottles, Ampack can offer customer more flexibility at equal investment costs. ampack.info

Langguth: Self-adhesive labeller

Langguth presents the self-adhesive labeller selfLAN 510, a compact and high-performance linear labeller for application of self-adhesive labels onto containers with widely differing sizes



The self-adhesive labeller selfLAN 510 has a low start-up and holding time (photo: Langguth)



and forms which is easy to integrate into existing production lines. langguth.com

Robatech: Adhesive application solutions

Robatech presents efficient adhesive application solutions. The SpeedStar heads are a world novelty and capable of placing up to 800 dots of adhesive per second. With these applicator heads Robatech

has succeeded in combining extremely short switching cycles with a high wear resistance. In spite of temperatures of up to 185 °C and viscosities of up to 5000m Pas the SpeedStar Diamond devices reach a much longer useful life than conventional heads. The heads are especially precise because the stroke of the shut-off needle is monitored and automatically adjusted.

A further Robatech product which scores with its sustainability is the new hotmelt applicator Concept Diamond of the Green-line series. Its insulation and the adhesive distributor result in an energy saving while protecting the operator from injury.

The operating data software InfoPlus developed for the RobaVis touch screen records data of the adhesive applicator system permanently, creates a log from them,

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Gernep presents latest developments of different rotary labelling systems for the food industry (photo: Gernep)



The Speed-Star heads are a capable of placing up to 800 dots of adhesive per second (photo: Robatech)

calculates consumption data for further optimization and generates messages for preventive maintenance. robatec.ch

GERNEP: Precision labelling

Gernep presents latest developments of different rotary labelling systems for the food industry.

The rotary labelling machine Labetta-SK is equipped with servo drives for precise and smooth transfer of labels precise onto the container; even in container recess or increased label fields. Compared to wet glue labelling systems changeover times, as well as cleaning and maintenance processes are shorter. Alternatively, servo driven bottle plates for labelling of various container formats offer an enormous flexibility.

For wet glue labelling, Gernep provides the Labetta. Advantage is an innovative overlay gear which allows precise label adjustment along with individually adjustable glue segments.

Hot melt wrap around labelling with OPP labels from the roll is a thing for the

machines of the Rollfed series, the Rollina applies for hot melt wrap labels from the magazine. The glue application of the rotary labelling machines results from a special closed hot melt system. A closed hot melt system prevents entry of any foreign matter.

Highly variable is the combination of wet glue, self-adhesive and hot melt labelling. To meet all requirements Gernep developed the Labetta Combi labelling machine. gernep.com

Claranor: Online dry & chemical free sterilization

During 2012, Claranor will install the first industrial equipment of pulsed light sterilization designed for lids. It will complete its cups and caps sterilizer range. Today, over 40 Claranor packaging sterilization equipments are integrated on industrial plants in the beverage and dairy industry all over the

world. A complete cup filling line running with Claranor equipment integrated on a Waldner filler will be on show.

In 2011 Claranor's cup treatment range got industrially validated for sterilization of packaging material before filling. This concerns dairy desserts with shelf life reaching 50 (for neutral products) to 60 (for acid products) days. claranor.com

Evergreen Packaging: Full line of gable top packaging machines

Evergreen Packaging will be on hand to discuss its full line of filling equipment. Many of the new models include servo driven technology.

The Q-35 gable top packaging machine serves the small to mid-size volume market. With fill volumes of 180ml to 1.15l, the Q-35 fills liters up to 3,500 cph (58 cpm) and fractionals up to 4,500 cph (75 cpm).



This Waldner filling line using pulsed light cup sterilization is operating at Weissenhorner Milchmanufaktur in Germany (photo: Claranor)



Evergreen Packaging's EQ-70 fills liters up to 7,000 cph (117 cpm) and fractionals up to 9,000 cph (150 cpm) with a three-stage top down fill system (photo: Evergreen Packaging)

The Q-70 meets market demand for a mid-speed liter cross-section machine with fill volumes of 180ml to 1.15l. This model fills liters up to 7,000 cph (117 cpm) and fractionals up to 9,000 cph (150 cpm).

With fill volumes of 180ml to 1.15l, the EQ-70 fills liters up to 7,000 cph (117 cpm) and fractionals up to 9,000 cph (150 cpm) with a three-stage top down fill system. ELL components include a self-contained CIP/SIP system, environmental control features, carton treatment and a hermetic filling system to maintain product quality. evergreenpackaging.com.

Lekkerkerker: Used machines but new concepts

Machinehandel Lekkerkerker, one of the major traders of used but completely rebuilt dairy machines, will present its complete portfolio for milk processing and cheese making. The company will focus on yoghurt, cream cheese, processed cheese and butteroil, where not only machines but also complete production lines and processing concepts can be supplied. The new head of sales for the CIS area, Maksim Kagan,

will be available at the show booth. lekkerkerker.nl



The new gable-top carton format 91x91 is already used by Tine dairy in Norway (photo: Galdi)

Galdi: Gable-top 91x91 format

Galdi will present the new model of the RG250UCS series: this machine uses the state-of-the-art technologies and is designed to fill different products, both liquid and viscous, in the new gable-top carton 91x91 (1.75 liter) format. "Our machine has already found favour in the market" – Galdi comments. "It has been created to offer higher performing solutions to customers: an even more careful

cleanability, higher speed, high versatility thanks to a new more precise dosing system which allows outstanding margins of flexibility and customization." galdi.it

Milk collection

GEA Diessel: New software tool

GEA Diessel will show the data capture system type ZEVODAT-flash, an electronic device for indication, data storage, control, and transfer of measured values such as volume, temperature, mass etc. RATZ – Remote Access Tool for ZEVODAT-flash – is a newly developed software tool that, combined with either GSM or GPRS data transfer technology, enables dairies not only get information about the conditions of milk transport trucks, but also to access procedures whenever it might be necessary.

GEA Diessel will also display the flow meter type IZMAG which meets the industry's highest standards. Its stainless steel design, individual calibration and a very fair price make the IZMAG an interesting and durable process metering device with an excellent cost/benefit ratio. geadiessel.com



RATZ is a new software tool for the data capture system type ZEVODAT-flash (photo: GEA Diessel)

Dairy Technology Award

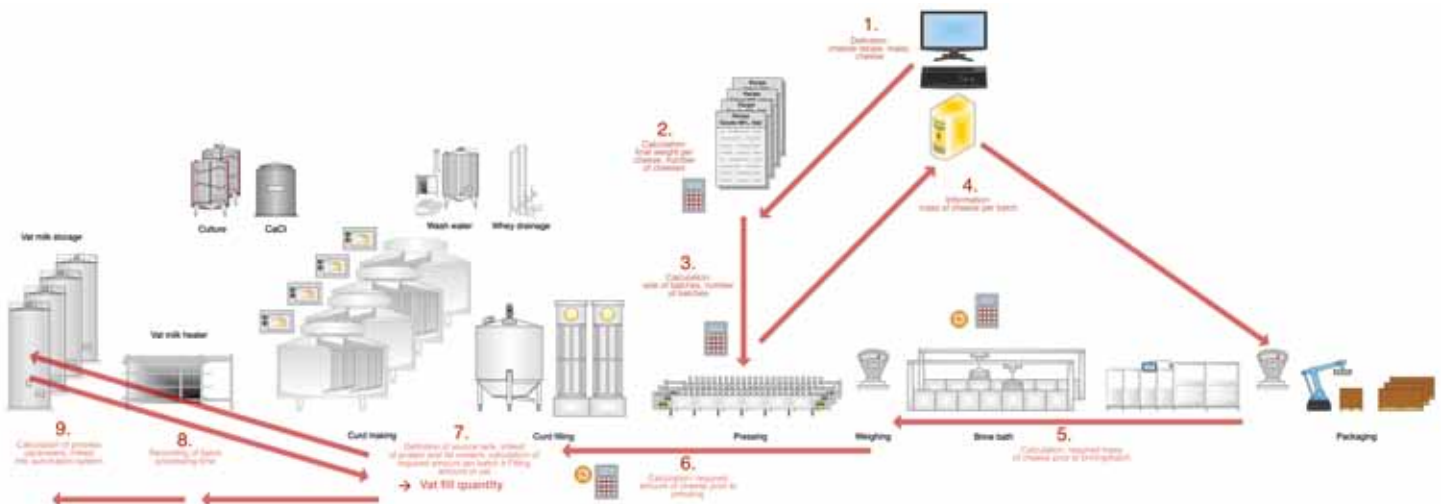
A large number of companies has applied for the Dairy Technology Award 2012 that will be presented during Anuga FoodTec on 28 March at 4pm (location: Kristallsaal). Although most of the applications were of high quality, only 4 made it through the screening by the most ambitious Jury. IDM introduces the awardees 2012 briefly on the next pages.



Given the large number of applications for the Dairy Technology Award 2012, the Jury had a "hard time" to select the best from the best. Photo taken at the Jury meeting on 30 Jan in Hannover, from left: Prof. Ulrich Hülsen, Prof. Britta Rademacher, Prof. Matthias Weiß und Klaus Schleiminger (Prof. Jörg Hinrichs was absent but voted by email) (photo: IDM)

Cheese, made "dynamically"

GEA TDS



Cheese making out of the view of automation (Source: GEA TDS)

GEA TDS will receive the Dairy Technology Award 2012 for its "dynamic recipe". It bases on practical experience in cheese making as well as on planning and building of complex cheese plants. The concept allows for a higher degree of standardization of final products, a better utilization of the whole cheese making

plant, increased efficiency as well as saving of energy, resources and costs.

The recipe does not take into account (classical) fixed parameters of raw materials but rather

- adopts to actual ingredients of milk
- and starts with the cheese that has to be produced.

Classical

Conventional automation of cheese making plants bases on fix parameters for amounts, temperatures, speed of processes etc. for each cheese type. These parameters are firmly stored in the recipe management. Adaptation to varying milk constituents or capacity usage of

the cheese making lines must be made by the operators more or less in a manual process.

Dynamic

The dynamic recipe does not define fixed parameters nor does it start with a constant amount of milk per batch. Generating of recipes is done automatically starting from the final product cheese and leading upstream while taking into account the actual composition of milk.

The amount of cheese per batch of a recipe will be defined as a start (ideally by the GEA Master Recipe). This includes the necessary product characteristics (dry matter, fat in dry matter, weight of individual cheeses, etc.) as well as the number of cheeses per batch. This allows for adjusting the number of required press positions and decreases the number of empty mold transport across the presses as well as it prevents cheese from entering press positions that are reserved for

other batches. This makes sure that capacities are utilized in the best way possible with strict separation of batches.

To take respect of required constant time flow, not the throughput of the filling line (i.e. the heat exchanger) is a fixed parameter but rather the filling time per batch. From that parameter as well as from the filling time per cheese vat, the system calculates the ideal value of vat milk throughput for the batch concerned – which will enter the automation system.

Autotuning for processing equipment

ProLeiT

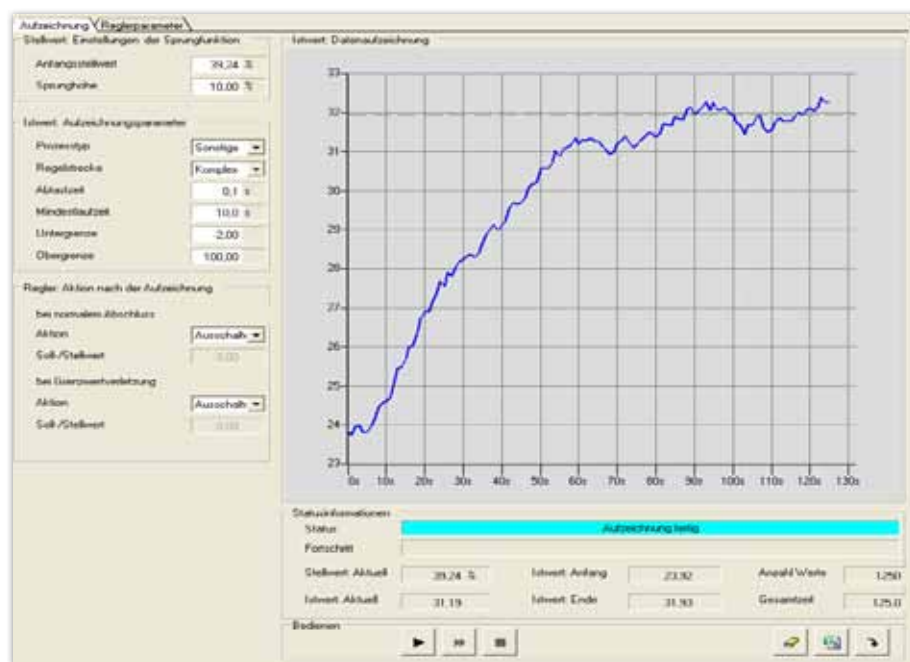
The Autotuning functionality is an add-on to the ProLeiT Plant iT/brewmaxx automation system for continuous P, I, PI, PD and PID, cascade, mixing and relation control units. The concept will receive the Dairy Technology Award 2012.

Extending conventional concepts, ProLeiT Autotuning proves to operate reliably also under difficult process conditions due to:

- Special algorithms for signal processing providing correct identification of the process dynamics and parameters;
- Identification in regard on significant deadbands;
- Stable transient processes in the control loop control that can be achieved also under disturbances resulting from changes in system parameters of the loop being identified and in the other control loops;
- shock-free switch from operating point to autotuning modus and back;
- Selection of different process dynamics profiles (high with short reaction time or stable with low over-oscillation).

Integration in Plant iT

Autotuning is an approach to automatically calculate the parameters of a PID loop control. The characteristics of the



Data recording of the Autotuning functionality (Source: ProLeiT)

controlled system will be identified and used for calculation of parameters. These parameters can then be transferred into the PID loop control. Autotuning is integrated into the database, visualization (HMI) and data acquisition modules of the automation system.

Added value

BASF Personal Care and Nutrition GmbH in Illertissen, Germany has conducted tests for Autotuning in different automation platforms. Handling the complex in-

teraction of PID loop controls by Autotuning in an evaporator, has made the added value for customers evident.

Nicolai Ziegler, head of maintenance of bei BASF Illertissen: “ProLeiT’s Autotuning of the software controls is a sensation! You need no knowledge of control parameterization. And there is no need to pre-set parameters (K_r, T_n, T_v etc.) as the PID control is completely self-operating. Set up with Autotuning, the process control is in an optimum state, which even is not able to be achieved by experienced personnel”

prolong-concept

GEA Westfalia Separator Group

The prolong-concept developed by GEA Westfalia Separator Group will receive the Dairy Technology Award 2012. Target of the development was to manufacture liquid milk with prolonged shelf-life with a fresh taste similar to pasteurized milk.

The process bases on centrifugal separation technology and keeps additional investment into hardware at a minimum compared to ESL technology. Problematic bacteria such as aerobic sporulating organisms (*B. cereus*) are separated almost 100% from the milk.

The process

Two separators for bacteria removal are added to the normal process of liquid milk manufacturing. High-performance separators remove highly effective non-milk constituents, somatic cells and sporulating bacteria. The prolong-process by GEA Westfalia Separator



The prolong-concept by GEA Westfalia Separator Group produces milk with prolonged shelf-life with a fresh taste similar to pasteurized milk (photo: GEA Westfalia Separator Group)

Group supplies a milk with a content of *B. cereus* spores of $< 1/10$ ml. Samples filled in a dairy in Southern Germany showed shelf life of up to 28 days at < 8 °C, as also analyzed by independent MIH institute.

Innovation

- Production of real **pasteurized milk** with a sell-by date of 21 days in minimum
- **High efficiency:** The whole milk stream will be cleaned from problematic bacteria. This can be used to improve the quality of other dairy products as well.
- **No high heat-treatment:** Neither skim milk nor cream must be subjected to high heat-treatment.
- **Easy integration** in existing processes.
- **Minimum product loss** if the Westfalia Separator proplus system is used.
- **Lower operational costs** compared to conventional ESL plants.

Injection molded cups or blow molded bottles on one machine

Illig

The thermoforming concept Illig – BF 70 will receive the Dairy Technology Award 2012. The unique machine concept makes it possible to produce cups and bottles similar to injection molded cups or blow molded bottles by normal thermoforming process.

The market situation was integrated into the development of the thermoforming machine BF 70. The solution makes it possible to combine advantages of thermoformed products like reduced container weight, high stiffness of formed part as well as repeatable constant quality with the freedom of producing different unique packaging shapes.

Container or bottles with pronounced undercuts or negative drafts can be produced thanks to moveable tool parts. In addition a forming procedure was found, which enables an absolutely uniform wall thickness distribution despite reduced initial area and high depth of draw.



The Illig BF 70 FFS machine is able to produce containers with a variety of different volumes (photo: Illig)

Cups or bottles are thermoformed as usual out of sheet material in a 2 row arrangement across the machine operating direction. The tools are split in 2 parts that open in feed direction after forming and punching.

This technology enables the machine to work from roll stock as a normal thermoforming machine and use the common thermoforming process to produce individual cups and containers, which cannot be

formed on standard forming machines. In comparison with blow-molded or injection-molded containers considerable differences in weight are achieved. Thermoformed containers are lighter, but provide the same stability. Normal materials, such as PS, PP, PET, PLA or multilayer material can be used on the machine. The machine BF 70 can be direct connected to existing or new filling and sealing lines and save therefore a lot of costs.

BF 70 is manufactured for the dairy and food industry completely in stainless steel design. According to format layout the output of this machine is approx. 25.000 – 30.000 containers / bottles per hour. The BF 70 is able to produce container with a variety of different volumes, i.e. 100ml, 175ml, 200ml by means of different lower forming segments. These segments are easily to change as long as the top diameter and neck measurement is the same.

New stabilising systems for cheese preparations and recombined specialities

Hydrosol



Hydrosol tests recipes on pilot plants (mixing and emulsifying machines, autoclaves, UHT, high-pressure homogenisers). The cooperation network of sister companies in the Stern-Wywiol Gruppe is a benefit for product development (photo: Hydrosol)

Cheese preparations or recombined alternatives can offer key advantages in manufacture and processing – and not just in hotter climates with low supplies of fresh milk. New stabilising systems from Hydrosol deliver attractive alternatives for cheese, white cheese and ricotta.

Recombined specialities are suitable for pizza, sausage and snack fillings, dips, bread spreads, salads and desserts. Batch production is simple, requiring only a double-sided cooker and a filling system. Final production is a matter of merely mixing the heated fat with functional systems from the Stabisol series, plus water, salt, seasoning, colours and flavourings. After heating to 85 °C the product can be filled into containers for further use.

High product quality with low costs

In addition to simple manufacture, recombinants also offer attractive savings potential. They are usually less expensive than real cheese, since they can be made in part from vegetable fat. At the same time, they offer good product quality. On pizza, recombined cheese, like real cheese, pulls into long strings. It also allows individual flavour and colour adjustment. Hydrosol stabilising systems prevent unappealing oiling out when products are heated in an oven. For sausage fillings, these analogues offer benefits of cut firmness and heat resistance, important factors for grill sausages and bratwursts. For snacks, the stability of recombinant fillings during frying and baking gives them major advantages over traditional cheese. They can also be deep-frozen without problems, and retain their original properties after thawing.

Snack manufacturers and deli food makers can use Hydrosol stabilising systems to make additional cheese preparations or alternatives, and profit doubly – they can keep their machines running at capacity, while often saving costs as against purchasing the finished products. In countries without large supplies of fresh milk, these functional systems offer a viable way to bring attractive products to market without using fresh milk or cheese. hydrosol.de



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Cross-continental alliance

Meggle & Idaho Milk Products



Located in the heart of Bavaria, Germany, Meggle have recently entered an alliance with US-based Idaho Milk Products for sales of MPC and MPI.



Guy Kientz,
Director
BG Food
Systems
at Meg-
gle

Meggle, one of the major whey utilization companies of Europe, have recently entered an alliance with US-based Idaho Milk Products for sales of MPC and MPI. IDM asked Guy Kientz, Director BG Food Systems, about the reasons for this cross-continent move.

IDM: What is the target of Meggle's recent alliance with IMP?

Kientz: Target of this strategic marketing alliance is to provide Meggle Food Systems customers based in Europe (Western, Eastern including the CIS), Africa and Middle East with Milk Protein Concen-

trate (MPC) or Milk Protein Isolate. These products complement the already existing range of dairy proteins produced by Meggle: acid casein and caseinate as well as whey protein concentrates.

IDM: Are more such cooperations to follow or does Meggle intend to enlarge its portfolio by investment in own capacities?

Kientz: The growth strategy of Meggle Food Systems is based on three drivers:

- 1) Further development of added value ingredients based on existing raw materials (skim milk and whey) as well as using the opportunity given by the increase of the milk output, driven by the end of the quota system in Europe in the coming years
- 2) Foster new products development by using the expertise of Meggle's

global innovation on development capacities

- 3) Complement the existing range with ingredients produced by strategic partners, co-manufacturers or traded.

IDM: What is the volume of the market for MPI85 and which industries are users of this specialty?

Kientz: The world market of MPC is estimated to be 100,000 tons.

The market is broken according to concentration and three segments have to be considered:

- MPI with 85 or higher percentage of proteins mainly used in nutrition
- MPC with protein content from 70 to 85% mainly used in the food industry: cheese and dairy fresh products

■ MPC with 42/56 % of protein, this product is commonly used as a concentrated skim milk powder in various food industries.

Main producers are located in Oceania, Europe and USA.

IDM: What are the core areas of activities for Meggle BG Food Systems?

Kientz: The core activities are focusing on supplying solutions and services to three markets:

- Dairy market: cheese and fresh dairy products, ice cream and dairy beverage
- Savoury market: meat, soups, sauces and food preparations
- Sweet market: non-dairy beverage, baking and confectionery

Those 3 markets are served with solutions based on:

- Dairy proteins: milk and whey based
- Dairy powders: lactose and permeates
- Vegetable fat powders creamers and toppings
- Functional systems or recombined products.

IDM: Where does Meggle BG Food Systems see its core competence and strengths in the B2B business with raw materials and semi-finished products?

Kientz: Meggle Food Systems is positioned as a value generating organization, with a strong focus on customer satisfaction. The strong position on whey derivatives of the Meggle Group through its lactose and WPC production enables the Food Systems group to provide comprehensive ingredients and solutions for the food industry at large.

Furthermore the broad experience on Consumer Products in Germany and Eastern Europe gives us the opportunity to enter the segment of the easy or ready to use solutions.

In particular, Meggle is able to propose the finished product as well as the ingredients & technology leading to those finished products like food preparations.

The Swiss Muesli Revolution Emmi Yoghurt Milk



Thinner than yoghurt but thicker than milk, that's the way Swiss consumers like their "Muesli" (photo: Elopak)

Emmi has launched a new dairy concept to appeal to the Swiss consumer and their love of Muesli. The dairy, which is the largest milk processor in Switzerland, has labeled the introduction of the new product Emmi Yoghurt Milk – the Muesli Revolution. The innovative product is more liquid than yoghurt but thicker than milk giving just the right consistency for Muesli.

The product was first launched last autumn in three varieties. "Everyone who likes to eat muesli knows that problem; if you add yoghurt it makes the flakes stick together so you need to add milk to be able to enjoy eating the muesli," Elopak's Market Unit Manager in Switzerland, Guido Hangartner explains. "Too much milk turns muesli into a soup so there was a dilemma in the dairy market place that Emmi has solved with a beautifully simple idea."

"Because Emmi Yoghurt Milk is thicker than milk yet thinner than yoghurt, it has the ideal consistency to be mixed with muesli or fruit," explains Sibylle Umiker, Spokeswoman for Emmi. "It is designed to delight all the Swiss lovers of Muesli and with its creamy texture and mild taste encourages more consumers to try muesli combined with new Yoghurt Milk as part of a healthy breakfast and a nutritious diet."

Easy pouring

Emmi Yoghurt Milk is offered in Pure-Pak cartons; 750ml Diamond Curve with large caps for easy opening, pouring and re-closing. "This product brings consumer convenience and this is enhanced and delivered through the packaging. The shape of the top panel allows for a larger cap for easier pouring and use. The Curve panel brings a better grip and Emmi is using the panels to identify the flavor of the product," adds Guido Hangartner: emmi.ch/elopak.com

European Dairy Technologist Course

Ewes and Goats Milks: Application in Cheese Manufacture
25 to 29 June 2012, Surgeres (France)

ENILIA/ENSMIC will host a European Dairy Technologist Course on ewes and goats milks' application in cheese manufacture. The course will feature lectures as well as practical applications.

Venue: ENILIA/ENSMIC, Avenue François Mitterrand – BP 29, 17700 SURGERES, Contact: Mr Emmanuel AUDEBERT, enil.surgeres@educagri.fr.

All set for growth

Al Ain Dairy



Al Ain Dairy is the largest dairy in the UAE

Al Ain Dairy, the largest dairy and juice producer in the UAE, have set out for product innovation and growth. \$2.8m were invested in a new camel milking parlour, a further \$150m will be invested in a new cow farm and with Dhs100m, the plant and dairy farm will double output in the course of the year.

CEO Abdullah Saif Al Darmaki: "We focus our efforts on providing our customers with an even greater choice of dairy and juice products that meet the highest national and international quality standards. 2012 will see an increase in production volumes across our entire product portfolio which is in keeping with demand and in line with our objectives."

Morning Drink

Al Ain Dairy started 2012 with the launch of a nutritious and tasty new "Morning" Mango Passion drinking yoghurt. The "Morning" range of drinking yoghurts is made with 100% pure fresh low fat milk, contains less than 2% fat, natural fruit sugars and has no artificial colors, flavors or preservatives. Ultra-fresh "Morning" is fortified with additional vitamin A and D. The range delivers 15% of the RDA of Calcium.

Al Ain "Morning" drink is also available in Apple & Cranberry; Peach & Apricot and Blackberry & Apple flavors in handy 250 ml pet bottles. alaindairy.com



54m litres of milk

30 years ago Al Ain Dairy started with a mere 200 cows. Today, the company is

milking over 5,000 cows and 2,500 camels with plans for further increase of milk output already in realization. Core of the



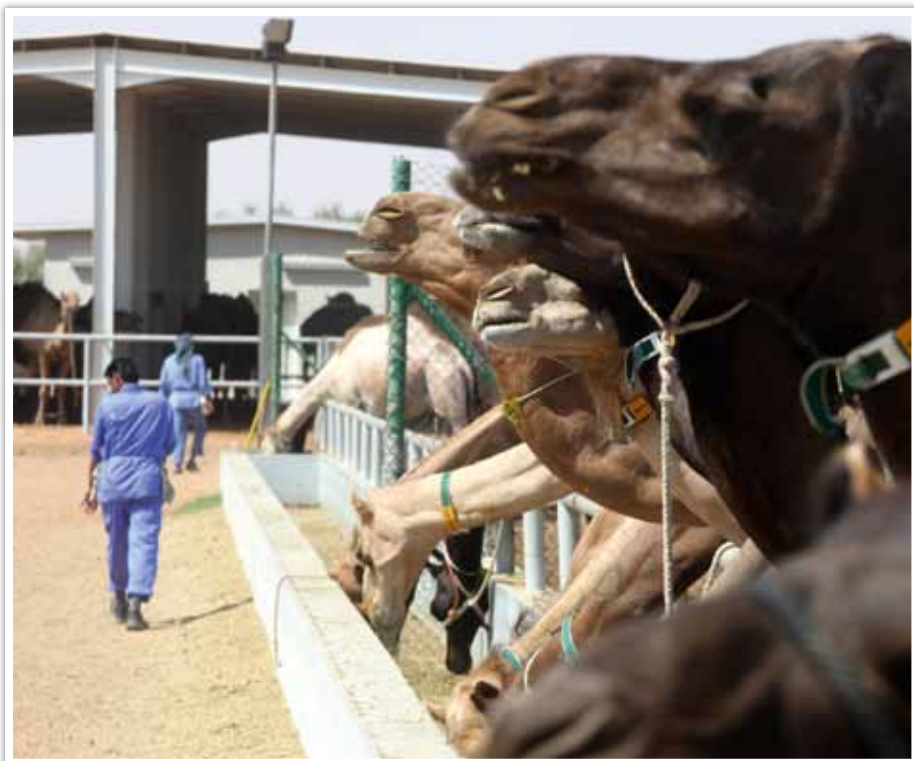
200,000 liters of milk are produced every day in Al Ain's own farms



State-of-the-art processing and filling equipment are a basis for Al Ain's ongoing success in the market



Al Ain is a significant juice producer in the Gulf area



Besides ~ 5,000 cows, Al Ain also milks 2,500 camels

investment is to introduce the very latest in camel milking automation to triple output and increase the stake in the rising global market for camel milk (Al Ain's "Camelait" has become the leading camel milk brand in the UAE).

To date, over 200,000 liters of milk (54m litres a year) is produced daily in what is extremely efficient production that runs 24/7. That comes in addition to 50,000 liters of fresh juice and 20,000 liters of long life juices daily.

Exponential growth

The company is producing an ever growing product portfolio which includes cow and camel milk, a wide selection of dairy products, laban, yoghurts, desserts and fruit juices (still) all to the domestic market.

Based on innovation, diversification and a growth strategy, Al Ain have developed into the largest dairy and fruit juice manufacturer in the UAE and one of the leading brands in the area. Most recently, the brand has seen exponential growth with a sharp increase in demand not just locally but internationally and as a result Al Ain now contemplates export markets. Al Ain Dairy announced an aggressive approach to marketing and branding in 2012 and to focus on new product devel-

opment as well as making improvements in supply chain.

Al Ain Dairy is a semi-Government company with 50% of the company stakeholders being those in the UAE com-



munity marginalized by low income. Al Ain Dairy has been paying dividends to those stakeholders, some 20,000 Emirati households for many years.



The company is recipient of ISO 9001 and ISO 22000 certification and strives to prioritize safety and quality across every aspect of its operations. The company is also fully HACCP in quality and food safety standards. The company is proud of its Superbrands status and was the recipient of a range of consumer and trade awards in 2011, including an Innovation award for its new and innovative variants. Al Ain Dairy is also recipient of numerous Sheikh Khalifa Excellence Awards as well as the Emirates Quality Mark.

A special seal of approval came following a successful launch of the milk variants Date and Cardamom Milk flavors, with the company recipient of the prestigious Trends & Innovations Award during the 2011 SIAL exhibition in Abu Dhabi.

Plans for 2012

2012 will see the company introduce innovations including a range of niche camel milk ice creams, flavored camel milks and a variety of other new drinks.

The company plans to welcome visitors to the farm for the first time, soon. All nationalities, young and old will soon be able see for themselves firsthand what daily farm and factory life is like, learn all about the cow to consumer cycle and see livestock. Children especially will learn the importance of fresh milk for health in what will be intended as educational visits designed to add value particularly schools and universities for field trips and by special invitation only.

Al Ain Dairy also wishes to demonstrate its commitment to sustainability issues and have their sights firmly set on attaining their own "green credentials" in 2012.

Guarantee of quality and product safety

X-Ray scanners, Part I



X-ray scanner SC 5000 with separate display – individually adjustable and easy to operate



X-ray scanner SC 5000 with large conveyor body especially for yoghurt trays
OCS_X-ray scanner SC 5000: At Müller, the OCS SC 5000 scanners check the famous twin pot Corner yoghurt as well as several normal single yoghurt pots



Clearly arranged display showing an X-ray of the “corner yoghurt” in its tray

X-ray technology is becoming increasingly important in the food industry. For level and foreign objects control of their products, the Müller group installed X-ray systems of OCS Checkweighers (ocs-cw.com), Kaiserslautern, Germany.

The Müller group, headquartered in Aretsried, Bavaria has dealt with the issue of X-ray technologies for a long time. The department “Central Production and Engineering” was looking for a system solution to detect foreign objects and to determine exactly the filling of their products. Back in 2007, Müller group had invited renowned manufacturers of X-ray scanners to present their inspection systems. Extensive product testings resulted in a pre-selection of suppliers for a closer cooperation. In a way, it was decided at the last second to incorporate the X-ray scanners of OCS Checkweighers into the running selection process. The results of product tests on OCS scanners were very promising, despite their very short time on the market.

Scanners for several plants

The German plants Aretsried (Alois Müller Dairy), Freising (Weihenstephan Dairy)

and the Müller Dairy in Market Drayton, UK, were equipped with one OCS X-ray scanner each. This enabled the employees on site to convince themselves of the outstanding performance of OCS X-ray scanners which then had to prove whether they maintain the meaningful results in terms of filling and foreign object control even under real production conditions. Furthermore, additional factors like handling, cleaning efforts, maintenance and the service life were examined and assessed by the employees. In short, the machines were tested under production conditions to the acid test.

Müller made high demands on the X-ray scanners. Highest performance in detecting foreign objects and determining the filling with the lowest number of false-positive rejections. Furthermore, the X-ray system shall have no effect on the line efficiency, i.e. the highest possible availability (in a three shift operation) must be ensured – this they achieved with the OCS X-ray scanner.

Müllers project managers Rüdiger Herman and Bernd Stechle: “Not only the innovative capacity of OCS impressed us, but also the extremely high detection ac-

curacy, outstanding technology and the extraordinarily robust design of the scanner. The future safety of this device and the overall concept was 100% convincing.” The extremely high-quality individual components of the X-ray system, such as the high-performance camera, the X-ray tube and the high-power generator with a higher-than-average service life – this made OCS an odd-on-favourite.

And this was in 2008 the beginning of the close and cooperative partnership between Müller and OCS which starts with an extraordinary R&D project.

Security

A very important aspect for the Müller group is the safety of inspection systems for people and products. Due to the robust and large-scale machine construction and thanks to a variety of “intelligent” security measures on the device, there is no danger to operator and product. This is also ensured by X-ray emission measurements conducted at regular intervals.

“Although the implemented X-ray scanners have a lower performance compared to inspection systems at airports, we decided to support the safety and

harmlessness of our inspection systems by appropriate measurements,” said project engineer Bernd Stechele.

S **elt scanners**

The SC 000 X-ray scanner has been developed to check products packaged in trays. The large yoghurt trays required equally large conveyor belts, which OCS implemented in the SC 000. Variants with a remote display have also been realised. This practical and user-friendly display can be positioned according to the operator requirements while being multi-adjustable. OCS also implemented a high-performance camera to suit perfectly the application. OCS placed special emphasis on easy cleaning and tool free change of the belts and conveyor bodies requiring routine cleaning. Moreover, OCS developed a special programmable access system (EKS – Electronic Key System) tailored to meet the customer requirements. This access system allows for the protection of the individual access levels against unauthorised access. In cooperation with Müller, OCS developed

and tested a special curtain material that withstands the abrasive and sharp trays.

The OCS SC 000 scanners check the famous twin pot Corner yoghurt as well as several normal single yoghurt pots. However, there was a special challenge which complicated this seemingly simple task: The checking of the twin pot Corner yoghurt stacked in trays with two layers.

The large compartment is filled with yoghurt, the small one with cereals, flakes or fruits. These products come in trays, stacked in two layers just as they can be found on the refrigerated supermarket shelves. For a conventional X-ray scanner however, this presents a serious challenge as the products can easily move and slide on each other causing an unacceptable number of false-positive rejections. Not so with the OCS scanner. The main advantage of the OCS scanner is that it compensates for sliding of the products – without any negative impact on the scan results.

The single pots are stacked in one layer while fixed in their tray, but they are driven at high speeds. This task takes many scanners to their limits, since the perfor-

mance of the tube is not sufficient to fully scan the product. Here too, the OCS scanner scores with exceptional results.

ailore soft are

In cooperation with Müller, OCS developed custom made software especially to meet and satisfy completely the requirements of the dairy industry. However, not only the software was specifically developed for the dairy industry, the whole design of the OCS scanners also complies with the special requirements of this industry. Very high humidity and high temperatures in combination with cardboard abrasion are usual there where the scanner is implemented within the production process. OCS's response were constructive and technical solutions at the same time. Like the cooling device developed particularly for cooling the scanner cabinet and the tube in a closed circuit without absorbing the ambient air.

The second part of the article will deal with the joint development of Müller and OCS and individual arrangements for several of the Müller processing plants.



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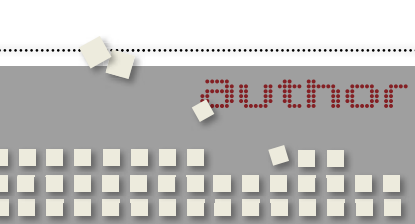
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Ice cream micro-structural analysis

Application of X-ray microtomography



Finn Hjort Christensen, Group Manager, Ice Cream Application, Danisco, Edwin Rahrs Vej 38, 8220 Brabrand, Denmark, g8fhc@danisco.com

X-ray microtomography can be used for studying 2D and 3D microstructure of food products. One of the microstructure elements that can be analyzed is air bubble size distribution in aerated products, in this case we have used X-ray microtomography for studying the air bubble size distribution in two different ice cream samples, one based on Cremodan SE 309 (a conventional emulsifier & stabiliser system from Danisco) and one based on Cremodan 809 Creamline (an emulsifier & stabiliser system from Danisco developed specifically for enhanced creaminess in ice cream).

The ice cream based on Cremodan 809 Creamline clearly had a finer air cell size distribution than the ice cream sample based on Cremodan SE 309, both when measured in the centre and at the surface of the samples. The average air cell size in the centre and at the surface of the ice cream based on Cremodan 809 Creamline was equal which indicates a stable air cell structure. The average air cell size in the ice cream based on Cremodan SE 309 was different when measured at the surface of the sample and in the centre of the sample. Average air cell size was around 40% bigger at the surface as in the centre of the sample, suggesting a coarsening of the air bubbles at the surface of the sample.

Ice cream samples - makeup

Ingredient Name	S1	S2
Water (Tap)	63.950	63.900
Coconut oil	8.000	8.000
Skimmed milk powder	8.700	8.700
Whey powder	2.500	2.500
Sucrose	12.000	12.000
Glucose syrup powder 32 DE, 95% TS.	4.000	4.000
Cremodan SE 309 Emulsifier & Stabiliser System	0.700	
Cremodan 809 Creamline Emulsifier & Stabiliser System		0.750
Annatto Extract (Danisco)	0.050	0.050
Firmenich Vanilla 550111 T	0.100	0.100
Total %	100	100

Calculations	S1	S2
Total Fat	8.60	8.65
Total MSNF	10.65	10.65
Total Dry Matter	35.30	35.35
Total Carbohydrate	22.10	22.10
Total Protein	3.35	3.35

Procedure

1. Melt the fat at approx. 50°C
2. Mix liquid ingredients at 20-22°C
3. Mix dry ingredients and add to water phase at 20-22°C
4. Add flavouring and colouring
5. Add the fat and increase temperature to 70°C
6. Homogenise at: 78°C/175 bar
7. Pasteurise at: 84°C/30 sec
8. Cool to 5°C
9. Ageing overnight at 5°C
10. Freezing, drawing temperature: -5.5°C, 100% overrun
11. Fill in packaging
12. Overnight freezing in hardening tunnel at -30°C
13. Store at -25°C

X-ray microtomography offers possibilities of studying micro-structure of food products in 3D, but at a high price (equipment and operation time).

X-ray microtomography

X-ray microtomography extends the capacities of X-ray imaging to produce pictures of ultra-high resolution and contrast. Using the same principles as medical scanners, namely differences in X-ray absorption scientists can produce 2D and 3D representations with micrometer resolution (1 - 10 microns).

Microtomography, like tomography, uses X-rays to create cross-sections of a 3D-object that can later be used to recreate a virtual model without destroying the original model. The term micro is used to indicate that the pixel sizes of the cross-sections are in the micrometer range. This also means that the machine is much smaller in design compared to the human version and is used to model smaller objects. These scanners are typically used for small animals (in-vivo scanners), biomedical samples, foods, microfossils, and other studies for which minute detail is desired. The first X-ray microtomography system was conceived and built by Jim Elliott in the early 1980s. The first published X-ray microtomographic images were reconstructed slices of a small tropical snail, with pixel size about 10 micrometers (ref. 1).

In order to investigate possibilities with X-ray microtomography for analysis of ice cream microstructure, we contacted “S” - Institute for Snow and Avalanche Research S - in Switzerland, who has earlier analysed ice cream using X-ray microtomography (other people has also used X-ray microtomography for food structural analysis, see examples in literature list). “We asked them to analyse two ice cream samples based on two different emulsifiers & stabilisers systems from Danisco (one based on Cremodan SE 309 and one based on Cremodan 809 Creamline).

Cremodan SE 309 is a conventional emulsifier and stabiliser system for ice cream, whereas Cremodan 809 Creamline is an emulsifier & stabiliser system specially developed for enhanced creaminess through creation of finer air incorporation in the ice cream.

The X-ray microtomography micro-structural analysis focused on air bubble size distribution as ice crystal size analysis is difficult as the absorption contrast between water (ice crystals) and the unfrozen phase of ice cream is low.

Ice cream samples

The ice cream samples were based on 8% vegetable fat (recipe see table).

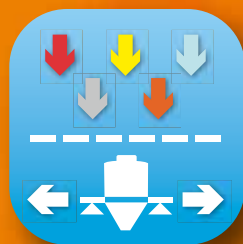
X-ray microtomography analysis

Air bubble size distribution in the two ice cream samples was analysed on a Scanco medical scanner CT40, type Des top cone-beam microCT, resolution 10 microns, X-ray tube, Tungsten anode, Energies 40 kV, 15 mA.

S1 - Ice cream based on Cremodan SE 309

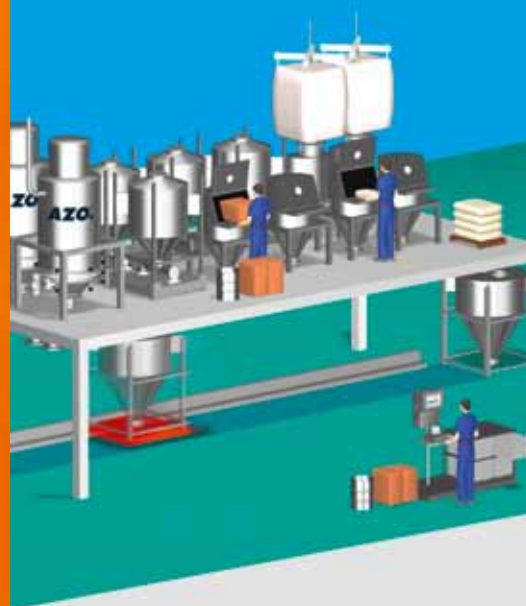
S2 - Ice cream based on Cremodan 809 Creamline

Air bubble size distribution was measured in two positions in the samples, one at the surface of the samples and one in the bulk (centre) of the samples. Results are shown in figure 1.



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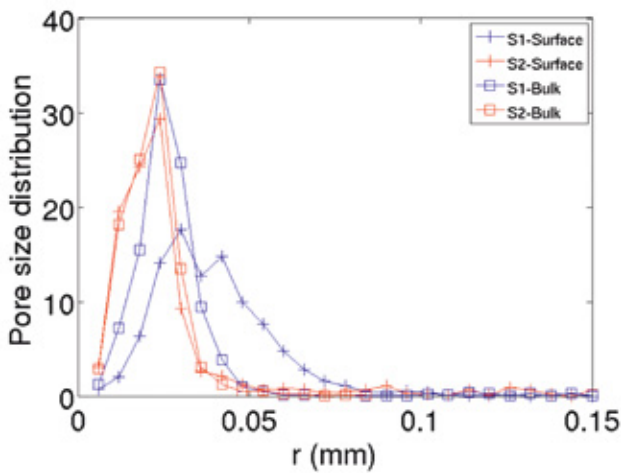
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diameter calculation of spheres done according to method described in literature source no. 1
 Figure 1 Air cell size distribution as measured by X-ray microtomography. Filter cut-off at 1 microns

measured at the surface of the samples

	average pore size diameter
Sample no. 1 based on Cremodan SE 309	43 μm
Sample no. 2 based on Cremodan 809 Creamline	27 μm

measured in the centre of the samples

	average pore size diameter
Sample no. 1 based on Cremodan SE 309	29 μm
Sample no. 2 based on Cremodan 809 Creamline	22 μm

The ice cream based on Cremodan 809 Creamline (sample no. 2) clearly showed (as expected) a finer air cell size distribution than the ice cream sample based on Cremodan SE 309 (sample no. 1), both when measured in the centre and at the surface of the samples.

The average air cell size in the centre and at the surface of the ice cream based on Cremodan 809 Creamline, were of similar sizes, indicating a stable air cell structure. The average air cell size in the ice cream based on Cremodan SE 309 was

different when measured at the surface of the sample and in the centre of the sample. Average air cell size was around 50% bigger at the surface, than in the centre of the sample, indicating a coarsening of the air bubbles at the surface of the sample.

3D images of the air cell structure of the two ice cream samples can be seen in figure 2.

Conclusion

X-ray microtomography can be used for quantitative analysis of air bubbles in

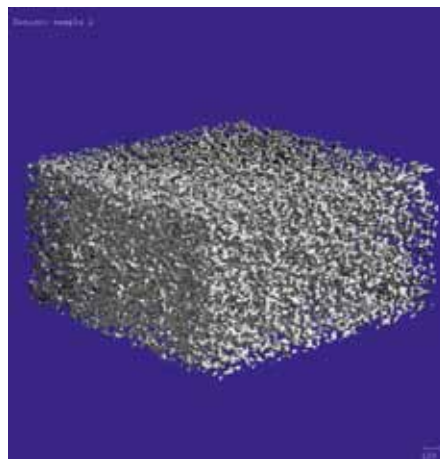
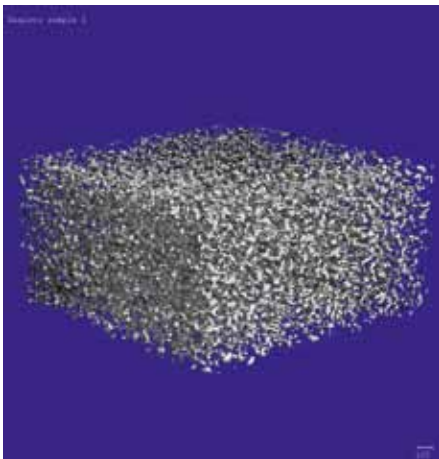


Figure 2 3D images of the ice cream sample based on Cremodan SE 309 on the left and the ice cream sample based on Cremodan 809 Creamline on the right. The measurements were done in the centre of the samples

ice cream and for 3D visualisation of the air bubble structure in a non-invasive way and in this way offers possibilities not achievable with more normal microstructure analytical equipment such as scanning and transmission electron microscopy. However currently X-ray microtomography for food structure analysis is neither common nor standard and the investment in equipment is high and operating it rather time intensive.

Cremodan 809 Creamline is an emulsifier & stabiliser system from Danisco specially developed for enhanced creaminess through creation of finer air incorporation in the ice cream and in this study it was shown that ice cream based on Cremodan 809 Creamline clearly had a finer air cell size distribution than ice cream based on conventional emulsifier & stabilisers

Frozen desserts

Danisco offer an extensive toolbox for the ice cream and frozen dessert industry, drawing on our long experience in the field. To support customers product development, we develop inspirational marketing and technical concepts and provide intensive customer training in all aspects of ice cream and frozen dessert applications. In all the technical support we provide, close customer cooperation is the key.

“We can help you

- Innovate new products from idea generation to market launch
- Choose the optimal ingredients for a specific formulation and process
- Design formulations
- Assess alternative processes and process parameters
- Troubleshoot

Local support – global knowledge

“We have application centres in Australia, Brazil, China, Denmark, Mexico, Singapore and USA. This enables us to monitor global and local trends information we use when cooperating with our customers. All our application sites have state-of-the-art facilities, including the pilot machinery and analytical equipment necessary to meet all requirements. Our staff are highly skilled and possess in-depth knowledge of our ingredients, their functional properties and how they are applied in industrial processes.

The list of quoted literature is available on request from the author

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High performance centrifuges

Flottweg AG

Flottweg AG, headquartered in Vilsbiburg, Germany, ranks as an internationally leading manufacturer of industrial centrifuges for solid/liquid separation.

More than 500 employees all over the world work for Flottweg, achieving a turnover of approximately €100m. A long and wide experience in liquid-solid separation using intensive research and modern technologies and thus treating our natural resources

like energy, water, and air with respect and consideration have resulted in a highly developed and customer-tailored range of products. Flottweg's current product range consists of decanters, belt presses, and disc stack centrifuges, and handles many different applications and capacities from pilot plant to large-scale continuously operating production facilities.

Flottweg decanters, disc stack centrifuges, and belt presses assume key

functions in mechanical separation technology and are used all over the world in the chemical, pharmaceutical, petrochemical, mining, beverage, and food industries. The food industry is without a doubt one of the most important sectors of the economy offering a wide range of applications for mechanical separation.

Flottweg centrifuges are used in many areas of the food industry, including the production of wheat starch, soy protein,

lactose and casein, wine, beer, fruit and vegetable juices and many more. Hundreds of Flottweg Decanters and separators have been working most successfully in the food industry for more than 30 years all over the world.

The quality of the separation process is frequently a crucial factor for the quality of the final product as well as the economy, safety, and environmental friendliness of the process. Flottweg separation equipment ensures efficient clarification and separation for the highest possible yields throughout the entire processing procedure thus providing excellent quality and profitability.

Moreover, the core of the Flottweg business strategy has always been as follows, says sales engineer Manfred Kropp: "Our customer is our partner. Separation processes often represent a challenge for our customers as well as for us. Every process is different;



Flottweg disc stack centrifuge

parameters often vary considerably. In many cases, a ready-made solution is not possible. Optimal integration of a centrifuge or a belt press in customer

systems, however, is a requirement for successful and efficient processes. This means that the solutions we develop are adapted to specific customer needs and processing requirements. Due to the very long life time cycle of a centrifuge, which is usually more than 20 years, criteria such as reliability and service are most important for the purchase decision."

Flottweg products are made in Germany. All machines are designed and manufactured at the headquarters in Vilsbiburg which allows for maximizing of the manufacturing efficiency, maintaining high technical standards, and bringing new technology developments quickly to the market. Over the years, Flottweg has developed a worldwide sales and service network with its own subsidiaries, branch offices and representations. The company is providing 24-hour aftermarket service. flottweg.com

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A characteristic taste

Hemme Dairy

For Jörgen Hemme, a family tradition of dairy production going back over 400 years is the driving force behind and the guarantor of ecological and economic action. He is a member of the 18th generation of the Hemme family to run the dairy at Wedemark in Lower Saxony, Germany. The farm is producing some 8,000 litres of fresh milk a day that undergo traditional in-house pasteurization at 72 – 75 °C, for processing and bottling.

Because the demand for regional products is growing steadily and because Hemme Milch, as a culinary ambassador of Lower Saxony, stands for absolute product freshness, Jörgen Hemme has made investments in recent years worth an average annual turnover in order to equip the dairy with reliable modern technologies such as a floating milking carousel, which allows the cows to be milked gently.

Marking

Milk and milk products are processed hygienically every day in the dairy's own high-tech plant, and portioned accurately in modern filling units. The packaging is then marked with its best-before-date by the alphaJET inkjet printer that works synchronously.

Because milk is a fresh product that quickly reaches its use-by-date, the reliability of the technologies deployed in



Jörgen Hemme (right), proprietor of Milchhof Hemme with Rüdiger Werner, KBA-Metronic area sales manager.

the process chain from cow to customer is of top priority. For several years, three industrial alphaJET ink-jet printers from KBA-Metronic have been marking the expiry date – without any direct contact – onto freshly sealed yoghurt pots or sachets filled with fresh milk.

KBA-Metronic's alphaJET is a freely programmable, continuous inkjet printer (CIJ) for non-contact marking. Thanks to an attractive stainless steel design offering IP 55 protection class, the alphaJET can easily be used in humid and

wet areas. Depending on the area of application, there are a number of different inks that ensure optimum marking adhesion on the material surfaces. The system has automatic date functions, including best-before-date, shift identification, and time, etc. Variable data can also easily be entered via an interface or directly on the control display. That's why, when the time comes around, Hemme Milch customers may also find Easter or Christmas greetings printed by inkjet on the lids of their yoghurt pots.



Child's play: Entering texts on the alphaJET



Two alphaJETs print the best-before-date "Hemme Milch means enjoying milk and delicious dairy products every day"



International Scientific Conference on Probiotics and Prebiotics - IPC2012

The next International Scientific Conference on Probiotic and Prebiotics will be held during **12th - 14th June** in the university city of Kosice, Slovakia.

The conference programme will focus on current advances in the **science and research of probiotics and prebiotics** their present and future role in maintaining health and preventing diseases. IPC2012 will focus on **evidence-based benefits** as proven in clinical trials and scientific experiments.

Further to the health effect of beneficial microbes new developments in their selection, identification, production, application and delivery will be discussed. Topical subjects as safety, regulatory issues and claim substantiation will be also addressed by internationally renowned experts.

The mission of IPC2012 is to provide a comprehensive scientific forum to all stakeholders of probiotics. The three day conference is a networking event for scientists, researchers, product developers, industry participants and regulatory officials who work with probiotics. The conference will also provide a platform for scientific exchange and discussion.

Meet those at IPC2012 who influenced the past, influence the present and most importantly will enable the future of probiotics.

It is the goal of IPC2012 to further explore the potential of already used and novel probiotics by disseminating latest results and new ways of probiotic research. In addition novel strains, controversial but scientifically solid ideas, approaches, visions will be presented, and worldwide co-operation between scientists and institutions facilitated.

Claim substantiation by means of sound scientific approach is particularly important when presenting probiotics to regulatory bodies worldwide. Hence it is a major challenge to prove health claims when developing and introducing new products to the market. **The conference is a unique opportunity to meet leading scientists, researchers, product developers, regulatory experts who are capable of proving that probiotics work and are reliable means for maintaining health and preventing diseases.**

For further information on the conference please visit www.probiotic-conference.net or contact the Organizing Secretariat of IPC2012. Phone: +421 917 858 838, e-mail: info@probiotic-conference.net





Some 170 representatives of the European dairy industry, associations and administration attending the EDA Policy Conference learned that a holistic approach on whole foods and not on single ingredients is needed to assess possible risks (photo: IDM)

Saturated fats in public discussion

EDA Policy Conference

Can legislation keep track with the rapid progress of science when it comes to risks associated with nutrition? This was the question posed by Dr. Joop Kleibeuker, Secretary General of the European Dairy Association (EDA), when opening the “Policy Conference on Saturated Fat and Dairy for Health” on 8 Feb in Brussels. IDM reports.

Clash of interests

In fact, legislation does not always take into account scientific findings. Esther de Lange, Member of the European Parliament, pointed out to the clash of political interests in Europe and to fact that (food) health legislation is strictly national. Given the high rate of obesity in the member states, the EU presses for less overall fat intake. Of member states, 21 out of 27 have put subjects like saturated fats, energy and fat consumption and trans-fatty acids high on their agenda. The EU Commission, said Stephanie Bodenbach from DG Sanco,

totally relies on the assessment of EFSA and this is (simplified) “less from everything”. There was clear preference for reduced-fat products, said Bodenbach.



Esther de Lange, MEP: The political discussion on foods is highly emotional, and emotion sometimes takes over science (photo: IDM)

Clash of findings

When it comes to food, the debate is highly emotional, de Lange added, and thus sometimes emotion rules over science. There is also a clash of scientific statements – much better would be a unified voice from industry and science and an approach across industry borders, said de Lange. This is, however, easier said than done. Scientists tend to interpret findings of others and not all that raise their voice have the latest knowledge, said food scientist Prof. André Huyghebaert from Ghent University. Science is progressing so fast that it becomes ever more difficult to stay on top of the developments. Findings just need time for diffusion.

Generic milk advertising has long since turned to emotional messages leaving scientific findings out, said Laurent Damiens, head of the cross-country milk advertising association European Milk Forum (established last year). Advertising targets the

whole product and not just single ingredients.

Clear messages!

Given its composition, milk fat is superior to any other fats, stated Prof. Huyghebaert. Informing consumers properly is however a difficult task. One cannot use scientific terms as most consumers simply don't have enough knowledge to understand what is meant. Therefore, science and industry need to deliver clear messages, always taking into account that the lowest-income groups are the most vulnerable in society. Trends in society have much more influence on consumer behavior than consumer information, added Huyghebaert.

Holistic approach

Prof. Arne Astrup, food scientist from Copenhagen University, said that focusing on single ingredients was outdated. The focus should rather lie on whole foods and their complex composition. There is no evidence that cheese or butter consumption is dangerous in any way, he said. Recent findings show that risks for coronary heart disease associated with



Podium discussion on saturated milk fat (from left): Professors Arne Astrup and Ian Givens (University of Reading), Stephanie Bodenbach, EU Commission DG SANCO, Prof. André Huyghebaert and Laurent Damiens (photo: IDM)

saturated fats have been highly overestimated. A slight improvement might come from substitution of saturated fat by polyunsaturated fat. If consumers would substitute saturated fat by carbohydrates with a low glycemic index, risks would grow significantly, however.

The effects of certain foods on dietary risks cannot be assessed by looking at their content of saturated fats, Astrup pointed out, as there are complex interactions and individual fatty acids have individual effects. Cheese for instance may even reduce cholesterol based on

its content of peptides and calcium. All in all, dairy products consumption can even lower risks for colorectal cancer and coronary heart disease. Fermented milk products have even better effects.

A similar statement came from Prof. Ian Givens, University of Reading. Referring to energy intake, dairy products carry more nutrients than other foods. Saturated milk fats pose less risks than commonly associated.

Givens and his colleagues Astrup and Huyghebaert recommended further scientific studies – a true scientific statement ...

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Manufacturing high quality ice cream with high overrun

Cost cutting in recipes



author



Hanne K. Ludvigsen, Product Manager, Ice Cream and Dairy Group, Palsgaard A/S. E-Mail: hkl@palsgaard.dk, Tel: +45 7682 7665.

The full pleasure of eating ice cream requires a smooth and creamy product throughout the entire shelf-life. However, not only recipe and processing parameters influence the product quality as experienced by the consumer. Also during transportation and storage of the ice cream – from the factory via the shop to the consumer – a high risk of applying heat-shock with concomitant quality loss exists.

The importance of air in ice cream

Air is an important component in ice cream affecting the physical and sensory properties as well as the storage stability. Ice cream normally has around 100% overrun meaning that the air makes up 50% of the ice cream volume. The amount of air incorporated into the mix influences the sensory attributes of the ice cream. If a lower amount of air is applied, the resulting ice cream is dense, heavy and more cold eating. If a higher amount is used, the texture is lighter, creamier and more warm eating.

Producing ice cream with a high overrun

Production of ice cream with high overrun is an interesting tool for cost saving. However, the perceived quality by the consumer has to be kept in mind. The sensory attributes such as creaminess and smoothness as well as resistance to shrinkage and melting can-

not be compromised as these properties are very closely linked to consumer preferences. Creaminess as well as melting resistance is related to the distribution of air cells in the product. A more uniform air cell distribution in the ice cream results in a creamier and slower melting ice cream. Emulsifiers like mono- and diglycerides are well known for their positive influence in this respect.

The effects of emulsifiers

Production of ice cream with high overrun means, other things being equal, that the cell walls around the air cells are thinner and weaker. It is therefore at high risk production of very high overrun ice cream takes place. However, by choosing the right emulsifiers and stabilizers it is possible to manufacture an ice cream with high overrun which will still be perceived as a high quality ice cream.

Especially the emulsifier plays an important role: Emulsifiers are sur-

face active ingredients due to their hydrophilic-lipophilic properties. Consequently, they place themselves in the interfacial layer between the fat/protein and water. The main functionality of emulsifiers in ice is to destabilize the fat globule membrane covering the fat globules formed during homogenization of the ice cream mix.

During ageing the proteins covering the fat globule are replaced by emulsifiers. Hereby agglomeration and partially coalescence of the fat globules is facilitated. This is important for the structure formation and air cell distribution formed during whipping and freezing.

Further emulsifiers are important for the stability of the formed air cells i.e. the strength of the air cell walls. In short terms the functionality of the emulsifier in ice cream is seen as:

- improved fat emulsification in the mix
- controlled fat agglomeration and coalescence
- facilitated air incorporation
- improved dryness on extrusion
- improved melting resistance
- improved heat-shock stability
- improved smoothness and creaminess

Types of emulsifiers

Mono- and diglycerides of fatty acids (E471) are the most commonly used emulsifier in ice cream. Mono- and diglycerides of fatty acids are produced by interesterification of glycerol and fat.

The selection of fat determines the functional properties of the emulsifier.

The mono- and diglycerides can be further esterified with organic acids. For instance lactic acid is used for formation of E472b lactic acid esters of mono- and diglycerides of fatty acids, so called lactic acid esters. Compared to mono- and diglycerides, lactic acid esters are more hydrophilic. Lactic acid esters are not commonly used in ice cream production. However, it has been found that it has a great influence on foam stability and texture when used in combination with mono- and diglycerides. This fact can be utilised in production of ice cream with high overrun.

The effect of stabilizers in an ice cream with high overrun

As always in ice cream the emulsifiers for high overrun ice cream are used together with stabilizers.



Guar gum, locust bean gum and alginate are often used as stabilizers in ice cream

The stabilizers are hydrated and dispersed in water reducing the amount of free water in the ice cream mix. The stabilizers bind the water by means of hydrogen bonds or trap the water in a three-dimensional network reducing the mobility of water resulting in an increased viscosity.

The main functions of the stabilizers are to:

- increase the mix viscosity
- prevent whey separation (syneresis)
- improve the whipping properties
- improve the texture
- prevent ice crystal growth (during storage)
- improve the melting resistance
- regulate sensory properties.

The options when choosing stabilizers are far greater than in the case of emulsifiers. Most countries allow the use of a wide range of stabilizers. The most commonly used stabilizers in ice cream are:

- guar gum (E412)
- locust bean gum (E410)
- cellulose gum (E466)
- alginate (E401)
- carrageenan (E407).

Manufacturing ice cream with 150 - 185% overrun

Palsgaard carried out a project with the aim of creating a solution for production

of ice cream with overrun as high as 150 - 185%. The quality in terms of sensory attributes, melt-down properties and storage stability should be comparable to standard ice cream. Ice creams with fat levels from 6 - 10% were included in the trials. Vegetable fat was used as fat source and whey powder and/or skim milk powder was used as milk solid non-fat. The use of whey powder also meant that the protein level was low in some of the trials.

The ice cream was produced in Palsgaard's pilot plant by means of a HTST unit combined with a continuous freezer. After hardening the ice creams were transferred to a storage freezer at -18 °C. For evaluation of the storage stability heat-shock tests were carried out by increasing the temperature to -10 °C for 4 days after which the ice creams were transferred back into the storage freezer.

Sensory properties as well as melt-down properties were evaluated for samples without and with exposure to heat-shock. The meltdown properties were analysed at a controlled temperature of 25 °C over 90 minutes.

High shear benefits

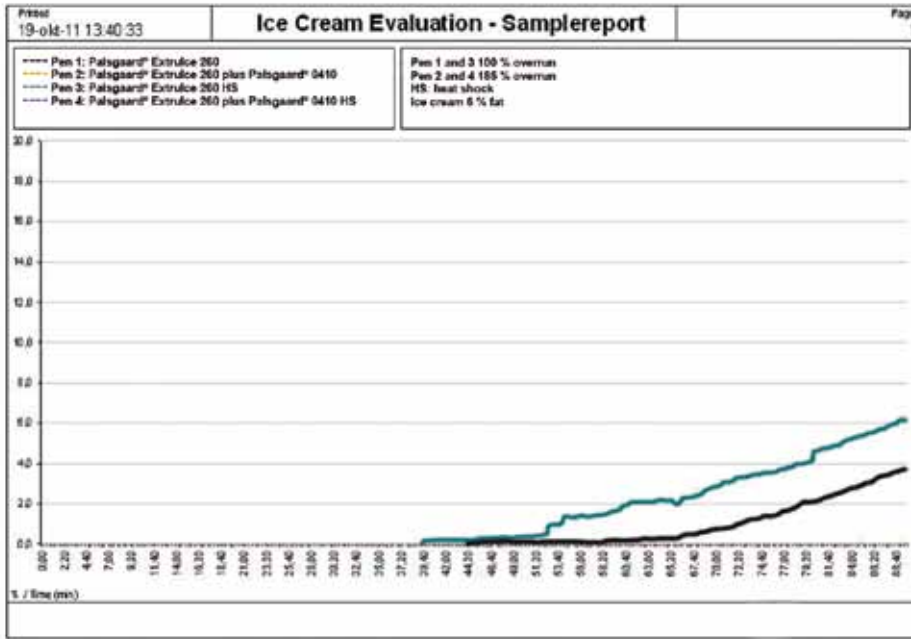
In order to obtain an ice cream with high overrun and a homogeneous air cell distribution it was necessary to apply higher shear in the freezer i.e. the dasher speed in the continuous freezer was increased.



1-Monoglyceride (E471)



Lactic acid esters of mono- and diglycerides of fatty acids (E472b)



Melt-down curves of 6% fat ice creams with 100% and 185% overrun.

Higher shear also means higher degree of churning out in the freezer and hence stronger air cell walls and higher stability of the created ice cream structure. This was also confirmed in the melt-down and heat-shock tests. Figure 4 shows the melt down curves of 6% fat ice creams with 185% overrun. Results for ice cream stored at constant temperatures as well as heat-shocked ice cream are shown. For comparison also melting properties of a 6% fat ice cream with 100% overrun are in-

cluded. Both ice creams are stabilized with Palsgaard Extrulce 260. Palsgaard Lactem 410 was further added to the high overrun ice cream.

From figure 4 it can be seen that only 4% if the 100% overrun ice cream stored at constant temperature had melted. If this ice cream was exposed to heat-shock 6% of the ice cream was melted during the 90 min. test period. The ice creams with 185% overrun were very stable and no drips from either of the ice creams were noticed dur-

ing the melt-down tests. Shrinkage wasn't observed in any of the samples.

Using lactic acid esters

The addition of the lactic acid ester of mono- and diglycerides to the recipe had a tremendous effect on both processing and melting as well as sensory qualities of the ice cream. Adding Lactem facilitates production of high overrun ice cream with an excellent and stable structure. Furthermore, it enhances the sensory properties by creating a creamy and full bodied ice cream even in ice creams with 6% fat. Even high overrun ice cream exposed to heat-shock had a creamy and smooth mouthfeel without iciness. The high overrun ice creams were softer but still melted slower compared to a standard ice cream.

Conclusion

In conclusion it can be said that the ice cream factories now have a new cost cutting tool. By slightly modifying their existing recipes e.g. by using Palsgaard Lactem 410 together with Palsgaard Extrulce 260 they can produce an ice cream with high overrun while still keeping a creamy, smooth and full bodied texture and mouthfeel.

As the product also has excellent storage stability the ice cream still satisfies the consumers. Should you like to know more about manufacturing ice cream with high overrun please contact



Melt-down tests

Special packaging solutions

Gizeh



For the Campina brand, Gizeh has developed a complete range of packages

Gizeh produce 3.5bn plastic cups a year in 4 plants across 3 countries, employing a staff of 600. The dairy and ice cream industry makes the biggest single group of customers. IDM paid the company headquarters in Bergneustadt, Germany a visit.

Commodities stand only for a third of Gizeh's business. Most part of the production are tailor-made packaging solutions that are developed together with customers. The dairy company is defining its requirements while Gizeh develops the optimum solution for the given case based on its know-how in design and production. With sales in the dairy industry of about €50m, the company ranks among the Top European players in its field.

Large portfolio

Thermoforming, die-casting and injection stretch blow-moulding paired with printing, inmould and shrink-sleeve labelling of cups are Gizeh's production processes. Strength of the supplier is the large portfolio of available packages, some 900 items make the core assortment. In PP and PS round cups, Gizeh can supply 20 different diameters from 65 to 184 mm. Non-circular cups, twin pots, hollow bottom, goblet-type and multi-layer cups as well as cup bottom labelling demonstrate the enormous portfolio that Gizeh offers. All thermoformed cups are made inline at any of the plants.

Sales Manager Robby Schröder is particularly pleased with the success that the company has had with its shrink-sleeves since introduction in 2006. Today there are 4 such

lines in operation. „Shrink-sleeves are a growing market. The process makes 100% of the surface available for decoration and requires only modest investment at the customer site. Market entry barriers become smaller which is important for product innovation. In some niches such as coffee drinks, the shrink-sleeve has become a standard,“ says Mr. Schröder.

Design projects

As a niche market player, Gizeh is not so much after printed 75/95 mm cups but is rather more active in supplying special solutions. Since 2006, 8 employees have been working in the dept. for technical application. They manage complete design projects, provide advice to customers and are available for market analysis and production startups. Based on 3D-CAD equipment, the department can export data for building STL models of new packages. Frank Kriener, Production Manager: “For customer information and especially for marketing purposes physical models are always the best way to proceed. It is somewhat difficult to

deduce functionalities and characteristics of a new package from 2D drawings. Therefore we offer STL models.“

Gizeh's own pre-print layout allows for fast reaction to customer requests. For a number of renowned companies such as FrieslandCampina, Zott, Müller or Lactalis, Gizeh is a partner of choice for packaging development projects. For instance, Gizeh has designed a complete family of cups (photo) that enter the market printed, neutral or with shrink-sleeves.

Trends

There are two current trends in the market, according to Mr. Schröder: sales of cost-efficient cups are growing along with those of high-quality label tubs. The latter segment is growing with increased use also of cups offering barrier protection against oxygen or light using EVOH or multilayer. Higher protection of the content is especially important when it comes to products with special constituents such as vitamins or amino acids etc.



Robby Schröder: “The shrink-sleeve label has become the standard in some product areas.“



Plant Manager Frank Kriener's preprint layout dept. can quickly react to customer requirements

In Europe the opportunities for new probiotic products are reducing rapidly to almost zero (photo: Hydrosol)



10 Key Trends in Food, Nutrition & Health

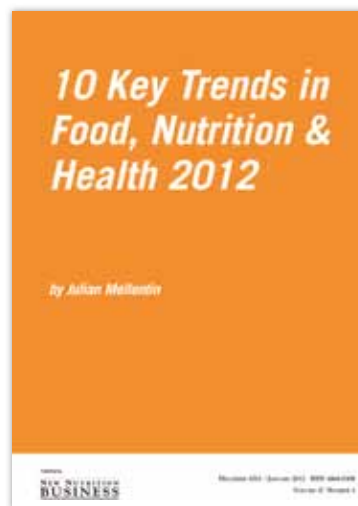
New Nutrition Business

Market and trend research company New Nutrition Business recently has issued a new food trend report. On ~90 pages, the report identifies 10 Key Trends which are broken down to individual product categories.

While most trend lists change significantly from year to year with new subjects appearing one year and disappearing the next. This is not the case with New Nutrition Business' list. The company focuses only on those trends that are the underlying key drivers for the industry – not fads or short-term developments with no long-term meaning. These important trends will shape the business of food and health for many years. This long-term focus enables companies to formulate their innovation and strategy plans around the trends analysis.

Most significant categories of foods are dairy, fruit and vegetables, and “good grains”. All three overlap with Naturality. Dairy is established as the most credible carrier for a wealth of health benefits.

The key trends identified by New Nutrition Business are:



Market and trend research company New Nutrition Business has issued a new food trend report. On ~90 pages, the report identifies 10 Key Trends which are broken down to individual product categories. The report “10 Key Trends in Food, Nutrition & Health” can be ordered at new-nutrition.com

- Naturality
- Energy
- Digestive health
- Feel the benefit
- Weight management
- Movement
- Senior nutrition
- Fruit & vegetables
- Dairy
- Good grains

Naturality

The biggest trend, it is becoming a basic consumer requirement for any brand, even those without an overt health position. Naturality is also an innovation strategy, with the biggest successes coming from creating new brands and new product formats.

The “naturality” trend is behind successes in Greek yoghurt in the US, coconut water, almonds and pistachios – and has opened the door to a growing number of successful fruit and vegetable-based products, which like dairy are a credible all-natural food form.

“Naturally functional” needs no health claims – when consumers can draw their own conclusions.

Digestive health

Products for digestive health have recently proven themselves to be almost recession-proof, even when selling at premium prices. Despite the economic downturn, premium brands such as General Mills' Fiber One and Danone Activia have achieved 10% + annual growth. Given that the probiotic dairy category is now well-established and in many countries there are few – or no – opportunities for new probiotic dairy brands, the growth opportunity lies with fibre.

In Europe the opportunities for new probiotic products are reducing rapidly to almost zero. The track-record of the EU's health claims regulator, EFSA, of declining health claims for probiotic products will mean the disappearance of all probiotic health claims. This will be a barrier to entry for new brands and will actually benefit established brands, such as Activia, which have a high level of consumer belief because of their “feel the benefit” advantage.

Feel the benefit

Offering a benefit the consumer can feel has become even more important – and effective – in a tough economic environment. When people can feel the benefit

being offered to them, they see that they are getting value-for-money.

ve ent

An opportunity particularly for science-based companies with products that address bone health, joint health and the problem of muscle-wasting – all health issues for seniors in particular.

eni rs

The most important need group because seniors are over-represented among buyers of all products with health benefits. In recent financial statements, for example, Danone revealed that its Actimel dairy drink brand, the world's biggest immunity brand, was bought mostly by people over the age of 60.

Dairy

Dairy enjoys a strong “naturally healthy” image in consumers' minds and has become a credible category for health messages, while dairy proteins are accumulating a growing body of science behind their benefits. Protein is emerging as an essential ingredient to support “healthy ageing”. The massive success of the Greek yoghurt category in the US, which has quickly boomed to 1.5 billion from 100 million in annual sales, illustrates how there are still a wealth of untapped opportunities to create new dairy propositions, even in developed markets.

hat natural eans t nsu ers

There are two broad categories – different, yet entirely complementary – of “natural” as defined by consumer perceptions:

1. Natural meaning fewer and simpler ingredients: Foods that are “free-from” artificial colours, preservatives or additives. It can also be used to encompass foods that are free-from other ingredients that target consumers object to.
2. Natural meaning “naturally functional”: The number one in the current market: the message that a food or food ingredient has a natural and intrinsic health benefit is one of the most persuasive that people can hear.

Fa t rs fsu ess f r naturality

To be successful with the naturality trend isn't simply a question of choosing ingredients with a health halo. While that's a sensible thing to do, in fact it won't by itself do a lot for sales. A naturality strategy must perform across these four aspects:

- Marketing
- Processing technology
- Science
- Convenience.

Consumer research shows in almost every country, that consumers want to get their health benefits from foods that are “as natural as possible”. But that's a finding that many have misinterpreted.

What consumers are most concerned about is:

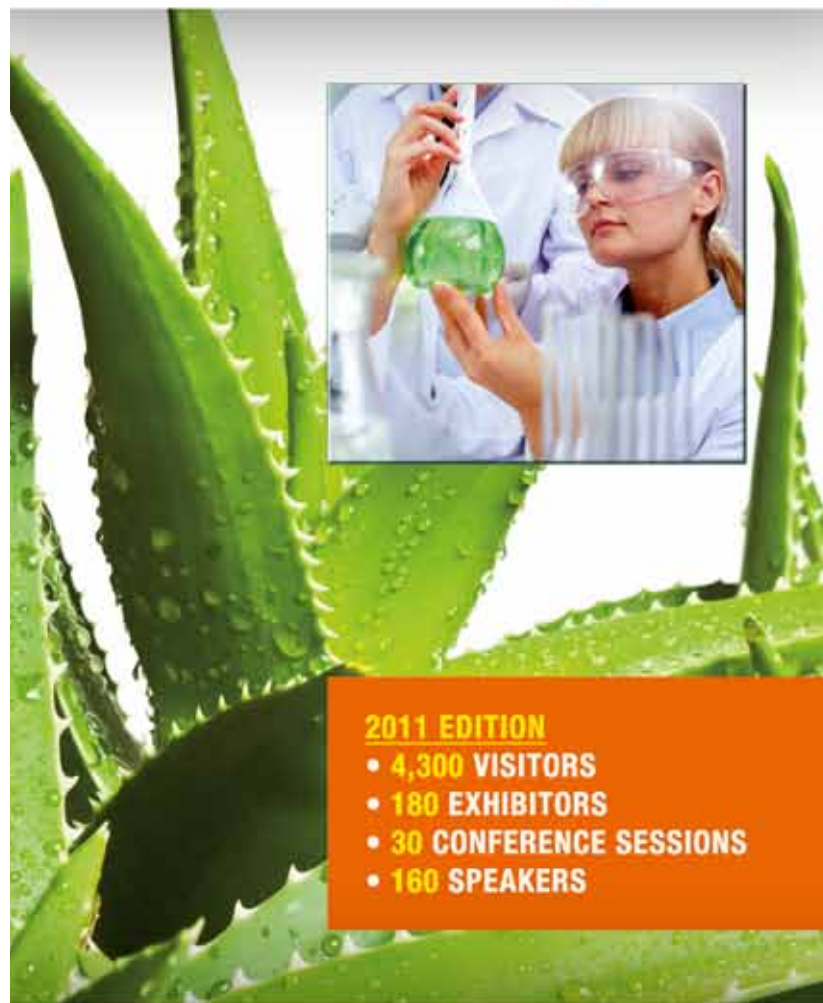
- A product should have as few ingredients as possible, and they should look like ingredients someone recognises, not the contents of a chemistry set
- The product should be free from artificial preservatives, colours etc
- Any health benefit should look like a logical, natural and credible fit to the product.

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Two stabilizing companies join forces

Hydrosol and C.C.A. Klimmeck enter a partnership

Hydrosol is one of the global players in the stabilizing of foods, especially dairy products, deli foods and meat and fish specialities. The company is a member of the owner-managed Stern-Wywiol Gruppe with eleven specialist firms in Germany and ten affiliates abroad. The group prides itself in a two-digit growth rate and will achieve a turnover of more than 310 million EUR in 2011. Last year Hydrosol took over the stabilizing company C.C.A. Klimmeck GmbH. Hydrosol's managing director Stefan Schliesser and Klaus Klimmeck speak about their joint future.

IDM: Mr. Klimmeck, why did you decide to sell your company to Hydrosol?

Klimmeck: I have known Hydrosol as a company and its management personally for many years. We were "friendly competitors," and the courage and eagerness with which the management and its committed team built up the firm's applications

technology always impressed me. So because I couldn't find a suitable successor for my company, the obvious thing to do was to enter a partnership with Hydrosol.

IDM: Mr. Schliesser, what do you hope to gain by buying C.C.A. Klimmeck GmbH?

Schliesser: Through our broad-based applications technology we have built up a large fund of know-how in the stabilizing of different foods over the past 15 years. But nobody knows everything, so a transfer of knowledge and an exchange of skills give you a welcome competitive edge. Mr. Klimmeck worked in the dairy industry for over 30 years, and his Laboron stabilizing systems are a success story. Over the years Laboron has created and served a niche in the food additives market – a niche other suppliers will find hard to fill. That is a unique opportunity: a product that suits us and that we shall be pleased to go on developing.

IDM: Can you tell us more about Laboron? How does it differ from competing products?

Klimmeck: You don't buy stabilizers off the shelf. Stabilizers are individual compounds based on a great diversity of raw materials and blending methods. Milk proteins, for example, can have very different effects in spite of the same protein values, depending on the heat they are subjected to in the spraying process and the composition of the feed given to the dairy cows. My philosophy has always been only to test and use the best base materials from different international suppliers. That is a laborious process, but ultimately it proved to be the secret of our success. These customized Laboron products are unique specialities that are scarcely offered elsewhere on the market.

IDM: Can you explain that a bit further? In what way are the Laboron products unique?

Klimmeck: The Laboron products are geared precisely to the manufacturing processes and formulations of individual customers. In the stabilizing of cream, especially, Laboron has carried out pioneering work, and we still have a unique selling proposition in this field. The benefit lies in optimum exploitation of the functionality of the additives, and the fact that the products are very easy to use.

IDM: Can you name a Laboron product with a special feature that isn't available on the market?

Klimmeck: Take Laboron S-68, for example. It's a liquid carrageen. All manufacturers are familiar with the substance as a



Hydrosol has acquired C.C.A. Klimmeck GmbH. The photo shows Hydrosol CEO Stefan Schliesser (left) and Klaus Klimmeck

powder. And they are all familiar with the difficulties of working with a powder that is so hard to dissolve. The problems lie in proper dosing and in lump formation and bacteriology. As a dairyman of the "Old School" I enjoy challenges like that. After a lot of trial and error and the development of special plant I found the solution: the stabilizer is sold to customers as a liquid and used successfully all over Europe.

IDM: What applications is Laboron S-68 used for, and what benefits does it offer?

Klimmeck: It can be used wherever carriage powder is used. In classic dairy cream, Laboron prevents the fat globules from rising (creaming); in cream toppings the aim is to create a smooth, stable foam; in puddings the objective is a creamy melt, and the addition of Laboron makes whipped quark light and fluffy. There are many more examples besides these. The benefit of the product is that it makes processing reliable. Being a liquid, it disperses optimally in the large cream tanks and thus poses very little risk of damage to the fat. Moreover, the functional constituents of the stabilizer are much more readily available in the liquid phase than in powder.

IDM: Mr. Schliesser, do you have enough production capacity in Wittenburg for making the Laboron products as well?

Schliesser: We have invested continuously in enlarging our plant and capacity. We now have a compounding capacity of about 40,000 tonnes of ingredients and one of the most efficient blending plants for powdered foods, with state-of-the-art mixing and filling systems. In the course of our takeover of Klimmeck we have also enlarged our capacity for liquid blends.



Pilot plant at Hydrosol - Laboron makes fresh cheese light and mellow

IDM: What projects are you planning for the near future?

Schliesser: In Ahrensburg we are currently investing five million EUR in enlarging our technical trials department for baking and dairy applications. Convenience products are very much a coming thing even in emerging markets like China and India. We help the manufacturers with customized products for different segments. Recent examples are label-friendly functional systems for cultured dairy products and clean-label solutions for ketchup that emphasize the natural tomato structure and flavour. In the mayonnaise sector we develop compounds for freeze-thaw resistant products with a fat content of 20 to 60 percent. A new range in the portfolio is a cheese preparation which draws strings when it melts on pizzas and gratins and also spreadable varieties. Other highlights include customized combinations of active ingredients for fresh meat,

sausage and surimi. Of course one of our focal points will be continued development of the Laboron products, too, especially cream stabilizers. We are testing new possibilities of structuring powders, for example by agglomeration. As a family business we view investments in the long term. That gives us freedom and makes us independent of short-term considerations to satisfy investors and shareholders.

IDM: Mr. Klimmeck, do you intend to continue your activities in the world of stabilizers?

Klimmeck: For the time being I shall be available to my present customers as a contact. And concerning the transfer of know-how Mr. Schliesser mentioned earlier, I will pass on my knowledge and practical experience in the development of the Laboron products. That will ensure a smooth transition to Hydrosol in customer relations as well as in applications technology.



The Hydrosol plant in Wittenburg has a capacity of 40,000 tonnes of stabilizer compounds a year and will take over production of the Laboron range

The Nutrilac IC range of functional milk proteins was developed especially for ice cream and dessert applications (photo: Arla Foods)



Functional milk proteins

Save costs in ice cream making

Dairy solids, such as milk powders and cream, have long been essential in commercial ice cream making. However, with commodity prices high, producers are increasingly seeking alternative ingredients that enable them to make indulgent products that resonate with consumers but at reduced cost and without creating any formulation challenges.

Traditionally, the most common options, such as whey protein concentrates, have proved suitable only for partially replacing milk powders and cream. As such they have caused quality issues, including off-tastes and shorter melting times – both of which are considered negative attributes in a finished ice cream product.

But a new generation of functional milk proteins is providing an effective

solution. Also made from whey, these proteins are a by-product of cheese production and completely natural. They can be substituted on a one-to-one ratio for the skimmed milk powder (SMP) used in conventional recipes, and require no production changes.



Nutrilac IC functional milk proteins, made from whey, are completely natural (photo: Arla Foods)

“The functionality in these milk proteins can do the job in ice cream with about half the protein,” explains Henrik Hjortshoj, senior sales manager for Arla Foods Ingredients Global Ice Cream Group, supplier of functional milk proteins under the Nutrilac IC brand. “This means the producer can make a finished product that costs up to one third less compared with using SMP.”

At the same time, these proteins don’t compromise on the taste, texture and quality consumers expect from ice cream. “Their increased functionality can even produce a superior finished product, along with the increased efficiencies,” says Hjortshoj.

Simulating dairy

While investigating the interaction between fat globules and air, researchers



Less milk protein in an ice cream recipe allows for significant cost savings (photo: Arla Foods)

at Arla Foods Ingredients discovered that there were functional proteins in milk which could actually simulate the role of milk powders in ice cream production – creating a product with the same taste and texture as those made to conventional recipes. In fact it was found that these functional milk proteins could even produce more agglomerated fat particles and bigger protein particles, resulting in a more open protein fat network and thus a more smooth, stable and airy structure.

Following on from this research, Arla developed the Nutrilac IC range of functional milk proteins, dedicated to ice cream and dessert applications. They were tested in the company's state-of-the-art Application Centre and found to be highly effective at replacing milk powders in all types of ice cream while maintaining a creamy taste with comparable structure, scoopability and melting properties. Importantly, Nutrilac IC functional milk proteins are used on the basis of a one-to-one substitution ratio. "This means they are really simple and easy for ice cream producers to integrate into their existing production set up," says Hjortshoj.

Less milk protein

The ingredients are also formulated to produce a comparable product with about half the protein needed in a dry milk powder. "Our Nutrilac IC solutions have about 15% protein, whereas a similar amount of skim milk powder would contain about 35% protein," says

Hjortshoj. "This means our ingredients can create a comparable ice cream with half the protein and a cost savings of 25% to 33%."

Arla Foods Ingredients researchers have also carried out sensory tests to find out whether ice cream made with Nutrilac IC could match ice cream made with other ingredients in terms of eating quality. Hjortshoj says: "The evaluations revealed that Nutrilac IC ice creams featured a warmer eating structure, excellent creaminess, a slightly sweeter flavour profile and comparable body and elasticity."

In terms of melting behaviour – good ice cream should melt on the tongue, not in the cone or bowl – the ice creams made with Nutrilac IC also performed well. "Products made with the functional milk proteins actually showed a slower melting behavior than those made with either SMP or the combination of SMP and whey powder," says Hjortshoj.

This was also true for low fat recipes, which typically melt faster than standard ice creams, adds Hjortshoj. The Nutrilac IC range includes a speciality formulation for low fat ice creams which can reduce the fat content by up to 50% while eliminating typical fat reduction issues, such as weak ice cream structure, icy mouth feel and low creaminess. "In our tests, ice creams made with our Nutrilac IC low fat solution showed better fat destabilization, which contributes to acceptable melting resistance," he explains.

Functional milk proteins such as Nutrilac IC are completely natural and contribute to a cleaner label for a finished product. In powder form, these ingredients are also a natural milk protein stabilizer, which means they have a long shelf life – up to 18 months when stored in closed bags and cool, dry conditions.

"With manufacturers feeling the pressure to reduce costs and increase their production efficiencies, functional milk proteins like Nutrilac IC offer the perfect solution," says Hjortshoj. "They can help ice cream producers keep overheads down with no detriment to product quality and, in addition, they provide opportunities to create healthier, lower fat products that consumers will love."

Fage ordered 5th filling machine Oystar



Fage USA has installed an aseptic Flexline FL 8/8 CA made by Oystar Hassia

Greek-style yoghurt manufacturer Fage USA Dairy Industry, Inc. has purchased a total of five Oystar machines. The newest investment is a Flexline FL 8/8 CA for preformed cups from Oystar Hamba. The Flexline in aseptic design fills and seals both preformed round cups and double chamber cups with strained yoghurt. Fruit fillings or the addition of honey as well as fruit yoghurt are also possible. The filling quantity for the round cups is 170 ml, 200 ml or 250 ml; and 150 ml in the case of the double chamber cups. Thanks to the fully automatic adjustments, cups of different heights can be processed without changing the format. Depending on the cup geometry and product properties, the FS system, which operates with two double production lines, achieves a production rate of up to 36,480 cph.

All of the dosing equipment is designed for CIP /SIP treatment. When it comes to cleaning and sterilization, the entire dosing device is rinsed with a caustic cleaning solution and sterilized afterwards with 130 °C steam. All movements are servo-controlled.
oystar-group.com

Adding "nutty" excitement to dairy delights

Inclusions

author



Jack O'Brien is president of ExecuTec Business Communications, a US based marketing consulting company specializing in the global food, dairy and beverage industries. He can be contacted at executecmktg@aol.com.

From sweet to savory, bits and pieces add excitement to ordinary dairy products.

McDonald's restaurants welcomed 2011 with the introduction of Fruit & Maple Oatmeal. This hot, whole-grain oats cereal is topped with what we in the dairy industry refer to as inclusions or mix-ins. The extras are: brown sugar crystals, diced red and green apples, dried cranberries and two types of raisins.

According to a senior director of nutrition, McDonald's Corp., Oak Brook, Illinois, "McDonald's wants to help make it easier and more inviting for our guests to eat more whole grains and fruits, and Fruit & Maple Oatmeal is an effective way to help our customers integrate these important food groups into their daily diets."

Dairy foods manufacturers would likely benefit from taking this same approach

Edible art project



When flavor designers create new offerings for their Los Angeles-based ice cream parlor — L.A. Creamery — they seek out fresh, local ingredients that contain no artificial components. "We hope to redefine ice cream not only as a frozen dessert but also as a true art form," they say.

They start with an organic ice cream mix from Straus Family Farms, Marshall, California., as a base, or "a canvas to which we add other ingredients to create signature artisan ice cream," they add. Some of the more unusual creations include

Maple Bacon, Sweet Corn & Berry Caramel and Thai Chili Pineapple.

With rapid expansion plans in place, the company recently hired a first season finalist of "Top Chef Just Desserts." With the title of corporate pastry chef, a few of her first creations for L.A. Creamery were Honeycomb (honeycomb-flavored ice cream layered with handmade honeycomb foam candy) and Roasted Banana (fresh bananas roasted with brown sugar and butter until caramelized, then blended with a lightly rum-flavored ice cream base).

when formulating all types of products — from cheese spreads to ice cream to yogurt parfaits. Including inclusions adds value and creates a point of differentiation with minimal effort, as the same product can function as a base to which chocolate, fruits, nuts and more are blended, swirled or packaged separately so that the consumer can personalize the product with just the right amount in every bite. Some inclusions offer nutritional perks, such as delivering antioxidants, fiber, minerals, vitamins and even omega-3 fatty acids.

"A scoop of low-fat dark chocolate walnut ice cream makes a great snack," says a registered dietitian based in Chicago. "Those extra ingredients give consumers permission to indulge on something we would normally consider dessert."

The many nuts among us

Walnuts, as well as many tree nuts and peanuts, complement creamy dairy products. Not only do they add flavor, texture and eye appeal, they are loaded with nutrients that interest today's health-and-well-



Dean Foods uses creative animal names to gain attention



Yogurts are excellent vehicle for inclusions



Walnuts, as well as many tree nuts and peanuts, complement creamy dairy products

ness-seeking consumer. In fact, the health image of nuts received a boost in 2003 when FDA approved a qualified health claim for nuts that linked most nuts, as part of a diet low in saturated fat and cholesterol, to a reduced risk of heart disease.

The nut industry has been very aggressive with conveying this message to consumers. According to the 2009 Functional Foods/Foods for Health Consumer Trending Survey sponsored by the International Food Information Council (IFIC), Washington, D.C., a quantitative study designed to measure Americans' attitudes toward, awareness of and interest in functional foods, or more specifically the ingredient or ingredients in foods that deems them functional, the health and wellness benefits associated with nuts have resonated with Americans. Of 358 respondents, 73% said they are fully aware of this relationship: monounsaturated fats, found for example in olive oil and nuts, for reduced risk of heart disease.

More recent data from this biennial study will be available soon. And the nuts industry expects increased consumer awareness thanks to aggressive marketing efforts by numerous associations and nut-based snack manufacturers, in particular, those who sell nutritional bars. For example, Kraft Foods Inc., Northfield, Illinois, has made the nutritional profile of nuts the focus of its Planters NUT-rition line of nut-based bars and snack mixes.

Nutritional bars have raised consumer awareness regarding how different nutrients come together in a nice package, as bars can be very nutrient-dense snacks and meal replacements. Further, nutritional bars also appeal to consumers because they deliver varied tastes and textures – from sweet to salty and crunchy to gooey. Dairy products can do the same when formulators include inclusions.

In most dairy applications, diced, sliced and slivered nuts are best when formulating multi-serving items. The smaller particles disperse throughout the product allowing each serving a healthy dose of the inclusion. Processors should choose various cuts and sizes based on the final appearance, texture and mouthfeel that they are trying to achieve.

In ice cream, manufacturers that want to incorporate a ribbon of flavor would use a nut paste. To create a chunky effect, they would also add large diced pieces, or they may use a smaller dice to increase the dispersion throughout the product. Similarly for cheeses, the final product might be rolled in a nut and fruit combination, thus requiring some type of diced product. A dairy drink manufacturer may use a nut meal or flour in order to create a dairy drink with some texture.

In addition to choosing a specific nut for its inherent flavor profile, nuts can be treated in a variety of ways to bring unexpected flavors to the formulation. For example, roasting enhances a nut's intrinsic taste, generating a characteristically stronger flavor that becomes a part of the finished product's sensory profile. Coating or encrusting nuts allows for the addition of flavors not typically associated with nuts, for example, tangy citrus and spicy pepper.

Praline nuts continue to be an attractive inclusion to dairy foods formulators, as the praline coating, which is best described as a browned sugar glaze, not only adds extra crunch and sweetness, but it also keeps nuts from getting soggy. Confectionery coatings provide similar benefits, as well as allow for the addition of color.

When including inclusions, remember that dairy bases are extremely compatible with all types of flavors – even the extremes that seem more appropriate for the candy or snack foods aisle. Suppliers are ready to help you create something that's never been done before.

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Perfect cheese processing

holac

holac cheese cutters were specifically developed for shredding/dicing of cheese. The company has a long lasting experience in manufacturing cheese processing machines that are flexible and built to the highest standards in regard of sanitation and productivity.

Starting with the first cut, holac cheese dicers and shredders deliver an outstanding cutting result for all applications when processing a variety of commonly available cheese types in shape of cheese blocks, cheese logs or cheese cut-offs. As part of cheese processing lines, the holac cheese dicers/shredders can be operated semi- or fully automatic. The main characteristics of holac's cheese processing machines are the high performance level, liability of operation, hygiene, safety, ergonomics and last but not least their durability even under extreme operation conditions. Amongst holac's long-time customers we find renowned and reputable small and mid-sized cheese processors all over the world.



The **Cheesixx** series has filled the gap in the portfolio of cutting machines for cheese. The smallest of holac's es-

tablished machines has been re-engineered with a pneumatically powered loading chamber closing plate to make operation more efficient and time-saving. The enhanced Cheesixx is capable of processing all commonly available cheese types, provided the cheese is pre-cut to fit the chamber.



The **AUT 200** is the largest fully automatic cheese dicer/shredder in holac's product portfolio. Its features are a high output rate, a high degree of flexibility, outstanding sanitation standards and an easy and quick change-over time to process new products within minutes.

The innovative machine feeding and loading enables for the processing of cheese blocks, cheese logs and bulk cheese cut-offs. State-of-the-art automation technology guarantees an optimum integration within cheese processing lines.

Guaranteed performance

Regardless if it is all about producing small, medium or large cubes, sticks, plates or other shapes such as cylinders, triangles or rasps: advantages of the holac cheese shredders/dicers are high capacity, flexibility of use and rapid changeover. Especially when rasping cheese, holac machines often deliver a better product quality than traditional systems. It is even possible to produce rasps of various sizes from cheese rich in fat. Another aspect is the special automation technology that guarantees optimum integration in processing lines, be it machines that are loaded manually or by automated conveyor belts.

Hygienic safety

Thanks to intelligent machine construction, minimum cleaning intervals and a high standard of hygiene, downtimes during and after production are reduced. Optional automated cleaning position makes cleaning a routine.

Operational safety

High CE safety and hygiene standards are the basis of holac's cheese processing machines. The credo "form follows function" governs the appearance, supports every-day operation and makes handling of all holac machines self-explanatory. Smart investment is critical and at the moment of purchase one should always think of reselling: solid technical machining and branded quality make the low-maintenance machines often a "generational wonder" and high performers, which remain high in demand on a world-wide scale. As a partner, holac stays always at your disposal and offers consulting, individual adaptation, spare parts and service. **holac.de**

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The most important global event to concentrate exclusively on nutraceuticals, raw materials, and functional food and drink ingredients, Vitafoods Europe, is set to celebrate its 15th anniversary from 22-24 May 2012 at Palexpo, Geneva.

The event is co-located with Finished Products Expo, Europe's leading dietary supplements event.

The newly-created Vitafoods Europe Conference Executive Advisory Board, which consists of industry experts from around the globe, has asked scientists, research teams and commercial managers to submit conference papers for inclusion within the three-day programme.

Exhibitors also have the chance to demonstrate their latest products before an engaged, targeted audience at the Supplier Seminars, while the New Products Zone will act as a guide map for visitors wishing to plan a route that encompasses new products of interest. Additionally, VitaTrend will feature a series of presentations examining key trends in the functional food ingredients sector: vitafoods.eu.com/finishedproductsexpo.com

People

GEA Convenience-Food Technologies



Dirk Hejnal, 45, has been appointed Segment President of GEA CFT. Hejnal joined GEA in 1986 and has been President of the segment GEA Farm Technologies since 2008.

Dr. Marco Gandini, 44, is new COO of GEA CFT. He joined Niro Soavi in 1993, and has been the company's Managing Director since 2008.



Lactic Acid Bacteria

4th edition handbook

Edited by DuPont (formerly Danisco) scientists Sampo Lahtinen and Arthur Ouwehand together with professors Seppo Salminen and Atte von Wright, the fourth edition of Lactic Acid Bacteria is of interest to anyone working with lactic acid bacteria.

The 800-page reference book covers all basic and applied aspects of lactic acid bacteria and bifidobacteria, including new discoveries, revised taxonomy, food technology applications, probiotic functioning, health, legislation and applications.

More information at crcpress.com/product/isbn/9781439836774

Versatile packaging machine

Baumer



Baumer has developed a three-in-one, space-saving system that integrates three machines in one (photo: Baumer)

Baumer has launched an innovation in the field of combined machines that can package products in wraparound carton, tray+film or film. The machine is equipped with a belt that allows to change configuration from wrap around, to tray+film or film in few seconds only by covering the chains. The conveyor belt is completely controlled from the operator panel and is automatically and rapidly positioning at format change, avoiding problems deriving from inadequate machine adjustment. baumer.it

drinksplus concept evolves

SIG Combibloc

The drinksplus technology from SIG Combibloc delivers total solutions to manufacture added-value products – i. e. premium drinks with real fruit pieces (up to 6x6mm). The solutions comprise product treatment, process technology, aseptic filling and the downstream process.

In developing new concepts for beverages containing cereal grains, SIG Combibloc worked closely with Zentis, one of Europe's leading fruit-processing companies. The drinksplus concept makes it possible to aseptically fill into carton packs drinks containing whole grains and/or ground grains, flakes etc. sig.biz



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No longer the land for dairy p

An ideal geographic location and potential for high milk production, Romania would make the perfect hub for expansion across Europe. Or so Olympus' managers thought when they strengthened their investments in Romania. They weren't alone: other foreign investors set up production units in Romania and took advantage of the then untapped local market. Most of the top dairy producers in Romania are controlled by foreign companies – but for how long?

Olympus

While Greek producer Olympus focused on Romania, expanding production capacity and exporting more of the products made in Romania, another dairy producer – Tnuva – has abandoned Romania, after EUR 22.7 million losses in 2010, when its turnover stood at EUR 21.4 million. It has recently announced it would shut down the factory near Bucharest.

Meanwhile Olympus, which owns a EUR 55 million greenfield factory in Brasov county, Romania, plans to make Romania its export gateway to the world. “Due to its location, Romania will not only



Ilias Pliatsikas,
Deputy
Managing
Director
Olympus
Romania

become our export gate for Western Europe, but also for the rest of the world,” Ilias Pliatsikas, Deputy Managing Director Olympus Romania said in an interview for IDM International Dairy Magazine.

The Romanian market itself could not absorb all the dairy products made here. After six years on the Romanian market, Israeli producer Tnuva announced it will close down its factory in Romania. The producer had closed down a cowshed in the country earlier this year.

But other producers see a light at the end of the tunnel, even though many Romanians still buy dairy products at local markets, rather than factory packaged in supermarkets. “The Romanian market is not ready yet to absorb big quantities of products under high quality standards. [...] However, we can already see some significant changes in this segment and we think that quality dairy products will only increase their share in the future,” said Pliatsikas of Olympus.

Fierce competition

The Greek producers have launched the Oly brand on the Romanian market and produce milk, yoghurt and sour cream in the country. Cheese production is planned in Romania as well. The Greek dairy producer hopes to reach a turnover of EUR 40 million in 2012 from this factory, while selling more than half of the factory's production on external markets. The dairy factory in Halchiu is Olympus' largest investment outside Greece. “At the same time, we are working hard on extending our distribution network. All in a little more than six



Olympus' new EUR 55 million greenfield factory in Brasov county, Romania



Olympus has launched the Oly brand on the Romanian market

of milk and honey producers?

Romania

months,” adds the Olympus Deputy Managing Director.

It is not easy to produce and sell dairy products on the Romanian market. The profit margins are “very low,” says Ilias Pliatsikas, while the competition is among the fiercest.

Olympus entered the Romanian market in 1999, with a milk processing factory in Barolt, which was closed down after the opening of the new unit. It also owns a minority stake in local dairy producer Prodlacta.

Danone

Others have a different strategy and focus more on selling locally. Danone Romania, one of the largest players on the dairy market in the country, manages to sell most of its local production on the local market. Around 90% of dairy production sold on the Romanian market is made in its factory in capital city Bucharest. Around 3 percent of the Danone yoghurts and milks made in Romania go to shops in the neighboring Republic of Moldova and the Adriatic region. Its sales in Romania reached EUR 113 million in 2010, registering a growth of 10 percent on the year before.

The French group, with EUR 17 billion in sales worldwide, has 740 employees in Romania and over 70 products sold on the Romanian market. Its main brands are Activia, Danonino, Actimel, Nutriday, Cremosso, Danette, Casa Buna.

Lactalis and Müller and ...

While some continue to produce on the Romanian market and even increase production capacities, others are slowly moving production away. This year French Lactalis, owners of Romanian dairy brand LaDorna, announced plans to shut down their Cottage cheese factory in Suceava county in Romania, and move production equipment to Poland, where demand is higher.

German producer Müller is still playing the waiting game with Romania and despite not announcing any plans to build a factory locally, hasn't yet ruled it out, as potential for the Romanian market is still seen, in spite of economic difficulties. It will all depend on the evolution of turnover in Romania, where the company already sells dairy products.

Meanwhile local producers La Colline have started exporting Romanian goat

dairy products to Hungary, the Czech Republic and Slovakia. Up to half of their production goes to export, from a 12-employee factory in Transylvania.

Moving from foreign capital to local one, Albalact is the largest – and one of the few remaining – Romanian-owned dairy producers in the country. Owned by investors Petru and Raul Ciurtin and listed on the Bucharest Stock Exchange, the company is also the third largest dairy producer in the country, based on its production capacity.

Milk production costs in Romania are lower than in Hungary, Poland or Slovakia, according to a report from the Competition Council. Even so, in 2008 Romania had the highest retail prices for fresh milk, according to data from Eurostat. Two years ago, the total value of the Romanian dairy market was around EUR 1.1 billion, while the sale per capita reached EUR 50 a year, according to data from Euromonitor. The economic crisis and lowered household budgets have most likely sunk their teeth into the volume of dairy sales in Romania in the last three years, although some players started to report sales growth in 2011. Corina Saceanu



Albalact is the largest – and one of the few remaining – Romanian-owned dairy producers in the country



The total value of the Romanian dairy market was around EUR 1.1 billion in 2009

Truvia stevia leaf extract

Naturally-sourced, calorie-free sweetness for ice cream and dairy desserts



Stevia-based sweeteners are extracted from the leaves of a shrub, *Stevia rebaudiana*, which has been used as a source of sweetness for centuries by the indigenous peoples of South America

author



Michael vom Dorp, Application Lead for Dairy, Ice & Fruit at Cargill Sweetness EMEA

Truvia stevia leaf extract is Cargill's fully characterised, high-quality ingredient made from the best-tasting stevia leaf components delivering naturally-sourced, calorie-free sweetness. Now EU approval has been given it can be used in a variety of food and beverage applications – with ice cream and dairy desserts a particular area of interest.

Stevia has been successfully used as a sweetener in Asia, North America and South America for a number of years, and products sweetened with stevia, including Truvia stevia leaf extract, have been on the French market for two years, under temporary approval.

The popular interest is there, but expectations are high. Consumers may be watching their calorie intake, but resist compromising on taste and eating experience in the products they buy, and increasingly prefer ingredients to be as natural as possible, with good ethical credentials.

This presents opportunities and challenges. First there's the question of working out how to formulate successfully. Next, the vital issue of how to position stevia-based products and finally, how best to assure consistent ingredient quality and availability.

Quality, consistency, sustainability

Cargill has been working on these questions since 2004 when the decision was made to build a brand new Truvia business, standing for quality, consistency and sustainability in stevia. Since then it has conducted almost 60,000 hours of food and applications work to bring Truvia stevia leaf extract to market.

Stevia is not a 'single ingredient' solution. The whole food matrix needs to be re-balanced to suit precise requirements – to reduce calories without reducing taste and enjoyment you can't simply replace sugar with Truvia stevia leaf extract.

When it comes to reformulation in dairy products, there are limits on the use of steviol glycosides. For fermented milk products the limit is 100 mg steviol equivalent per kg only for energy reduced or no sugar added products, which equates to 304mg/kg rebaudioside A, 253 mg/kg stevioside.

For ice cream/frozen dairy desserts the limit is 200mg steviol equivalent per kg, again only for energy reduced or no sugar added products, which equates to 608 mg/kg rebaudioside A, 506 mg/kg stevioside.

Working to these limits, and because Truvia stevia leaf extract has a synergistic effect with other sweeteners, the best results are achieved with a blend of sweeteners such as polyols, for example Zerose erythritol, and sucrose.

Truvia stevia leaf extract in ice cream

In the field of ice cream we have been working to create solutions with various sweetener blends including Truvia stevia leaf extract. This has illustrated how it can be used in no-sugar-added recipes for extruded ice cream coated with a Maltidex crystalline maltitol sweetened couverture.

This is a great opportunity for customers looking for low or no added sugar, low fat, or light calorie/reduced options for the EU market. The established diabetic ice cream market will also benefit from these new possibilities, particularly in Germany where the use of fructose in combination with polyol sweeteners in diabetic products will not be allowed from early October 2012. This means manufacturers of such products will be looking to reformulate with alternative sweeteners.

Using Truvia stevia leaf extract in combination with polyols also means manufacturers can maintain the individual polyol proportion below the 10% threshold at which it is necessary to include a polyol 'digestive tolerance' element in pack labelling. Typical ice cream comprises around 18% sweetener ingredients, but as Cargill has demonstrated during taste sessions, it is still possible to create an industrially produced ice cream that is scoopable at home or stable on the stick, by substituting sucrose/sugars for C* Maltidex maltitol, C* Sorbidex sorbitol, Zerose erythritol and Truvia stevia leaf extract.



Producing light ice cream products with a 30% calorie reduction is possible by combining Truvia stevia leaf extract with polyols and sucrose

Producing light ice cream products with a 30% calorie reduction is possible by combining Truvia stevia leaf extract with polyols and sucrose, with the further advantage of avoiding a labelling of possible laxation effects, as Truvia rebiiana exhibits no such effect. This means such combinations have huge potential for the ice cream industry. A recent lecture at INTER-ICE 2011, the international ice cream congress in Cologne, illustrated the possibilities and limits around stevia in frozen products.

In addition to our work with ice cream, Cargill has produced two prototype dairy dessert concepts created with a 30% calorie reduction. These illustrate just how well Truvia stevia leaf extract works in dairy applications, when used in combination with other sweeteners, in these examples C*Maltidex maltitol syrup and sucrose.

Chocolate cream dessert

This delicious chocolate cream dessert was developed using Truvia stevia leaf extract, C*Maltidex maltitol syrup and a special blend of Cargill Cocoa & Chocolate Gerkens cocoa powders.

In creating this prototype the Cocoa powder used was important in terms of taste (mild with low bitterness) and the level of fat. It was vital to get the level of fat and sugar correct to ensure the desired mouthfeel and texture.

The dessert was well received when tasted at FiE, delivering a rich, chocolaty eating experience and an enhanced nutritional profile.

Fromage frais

We have also developed a 'quark'-type raspberry added fromage frais aimed

at children, to provide them with dairy goodness but with less sugar and with a 30% calorie reduction.

The fat content was very low, at 0.1%, so it was important to use naturally-sourced texturisers like pectin and Locust-bean-gum in the fruit puree to ensure good mouthfeel and with great taste.

Fromage frais products are valued as healthy snacks for children because of their dairy content. By delivering an enhanced nutritional profile in terms of carbohydrates, this version provides a healthier choice, but with all the dairy goodness.

These prototypes illustrate how Cargill is in a strong position to re-formulate effectively with its range of sweeteners, texturising and other ingredients such as cocoa and chocolate.

Natural and ethical

As with any new market, there are a range of players offering stevia-based sweeteners for the whole range of applications, making any number of claims, including claims around sustainability – so why choose Truvia stevia leaf extract?

Cargill has substantial experience of agricultural supply chains, and the supply chain for Truvia stevia leaf extract has been under development by Cargill for the past seven years. This supply chain is based on the principle of full traceability, with Cargill overseeing the product from field to table, backed by the reputation and credibility of a company with a 146 year pedigree.

Our vision of sustainability is very clear. If farmers cannot count on a consistent market and a fair price for their crops; if



You can't simply replace sugar with Truvia stevia leaf extract – the whole food matrix needs to be re-balanced

the crops themselves do not produce the best sweetener in the most efficient way; if it takes too much energy and costs too much to extract and transport the sweetener – and if ingredients and products that are safe, and of the highest quality and consistency cannot be counted on – then the business is not sustainable.

Cargill's supply chain has been built with a vision to support growers while delivering a great tasting calorie-free sweetener to consumers.

Our commitment takes both time and patience – to find the right partners, develop and implement standards, understand the impact on natural resources and to be a good community partner. To this end we have developed comprehensive standards and set clear performance targets and auditing processes.

Creation of successful dairy products

Stevia holds great potential for reformulation in a wide range of food categories, such as dairy, beverages and confectionery. However, reformulating products to contain stevia is not simple, as illustrated by the changes in formulation required to develop the prototypes mentioned.

Cargill brings together all the key ingredient families under one roof, simplifying that process and providing the capability and experience to provide a complete solution.

Our interconnected in-house capability has driven the creation of Truvia stevia leaf extract. Now in a fast changing market of many options and myriad claims, it will inspire the creation of successful dairy products incorporating Truvia, opening up a new era in naturally sourced, calorie-free sweetness.

New tub for Alpro

arcil



The design of the new Alpro cup was researched pre-production by the innovation department at Synerlink, arcil's engineering subsidiary (photo: arcil)

Alpro has selected arcil to support the launch of its new product "Alpro Fruity & Creamy," a creamy soya-based yoghurt variety. Alpro wanted a new and original container, completely dedicated to this new recipe, in order to raise the company's profile on the single-serve yoghurt market. Arcil provided an end-to-end service along with added flexibility for its customer's machine. Arcil created the container's new design and then made the necessary changes to the existing arcil machine in order to produce this additional container, while guaranteeing post-production performance.

The design was researched pre-production by the innovation department at Synerlink, arcil's engineering subsidiary which was created in 2010, to ensure that the solution was immediately machineable and met its customer's industrial profitability objectives.

Arcil's technicians worked on the arcil machine at the customer's plant to enable production flexibility between 2 types of container. The modification to add the new container type to the standard container already produced on the machine required a machine shutdown of only 6 days. Moreover, the 95% performance test agreement was exceeded (95.5%). arcil.net

Faster eye formation and mild flavor

Swiss cheese



Faster eye formation and mild flavor in Swiss cheese, a new culture from Chr. Hansen does the trick (photo: Chr. Hansen)

Due to a growing demand for sliced cheese products, Swiss cheese makers must ensure fast and controlled eye formation in cheese types such as Maasdammer and Emmenthal. On top of this technological request, consumers prefer a distinctive nutty flavor together with a light sweet mouthfeel.

Chr. Hansen now introduces the new propionic culture OpenIT PS-60. The culture series provides the typical distinctive mild sweetness to propionic cheeses, in addition to a powerful gas release allowing for perfect eye formation.

The new culture is cost-efficient due to the high concentration and high activity. One F-DVS 500 unit carton is normally enough for the inoculation of 10,000-15,000 litres of milk. PS-60 is a fast lactate fermenting culture, robust to different ripening parameters. Good growth is recorded even in difficult conditions (low temperature, high salt, low pH). chr-hansen.com

The Dairy Technology Award, sponsored by the trade magazines *molkerei-industrie* and IDM International Dairy Magazine and the Association of German Dairy Engineers Ahlemer Ingenieure, is offering a prize for the successful implementation of technical innovation in the dairy and food industry.

The award will be given to manufacturers in the dairy and food industry, industry supply companies and service providers.

The following qualify for the award: processes, components or complete production units and special problem solutions (logistics, IT) which provide the industry with a new advantage or technological breakthrough.



**Dairy
Technology
Award**
**Molkerei-
technik-
Preis**

Sponsored by



Awards will be made in these fields:

- Processing & Automation Technology
- Packaging & Filling Technology
- Environment & Sustainability (in expression: saving of energy and of resources)
- Process Management & IT
- Logistics
- Food Safety

Open invitation

Dairy Technology Award

Award Ceremony: 28 March 2012, 4pm, Anuga FodTec, Cologne; location: Kristallsaal

Jury

Applications have been judged and awardees have been selected by a jury consisting of these renowned experts:

- Prof. Dr.-Ing. Britta Rademacher, University of Applied Sciences and Arts in Hanover, Faculty of Mechanical and Bioprocess Engineering, member of the board of German Dairy Engineers' Association VIM
- Prof. Dr.-Ing. Jörg Hinrichs, University of Hohenheim, Inst. of Food Science and Biotechnology, Dept. Animal Foodstuff Technology
- Prof. Dr.-Ing. Ulrich Hülsen, University of Applied Sciences and Arts in Hanover, Faculty of Mechanical and Bioprocess Engineering
- Prof. Dr.-Ing. Matthias Weiß, University of Applied Sciences and Arts in Hanover, Faculty of Mechanical and Bioprocess Engineering
- Dipl.-Ing. Klaus Schleiminger, KSI Engineering, Krefeld.

Awarding

The winning projects/innovations will be announced on 28 March during the tradeshow Anuga FoodTec. The awardees will receive an engraved certificate, and a detailed description will be published internationally in the trade magazines *molkerei-industrie* and IDM International Dairy Magazine.



Milk processing technology



Trade magazine for milk processing



Association of German Dairy Engineers, VIM



European food and health policy

Bringing different 'clashes' into perspective



Author: Dr. Joop Kleibeuker; Secretary General, European Dairy Association; euromilk.org

The European Dairy Association (EDA) organized in February 2012 a policy conference in Brussels on saturated fat and dairy for health that saw the presentation of the latest science on saturated fat and dairy and aimed at engaging EU and national policy makers, scientists, dairy producers and other stakeholders in a constructive discussion about the translation of science into public health policy.

Speaking at the conference, MEP Esther de Lange unveiled her view of the process of European policy-making in the field of food and health – a real eye-opener for the more than 150 conference attendees. Mrs de Lange stressed the various elements 'contributing' to this process and described policy-making in the European Parliament as a clash of political visions, nationalities and committees. She mentioned that other elements such as emotion, popular culture and Zeitgeist also influence and hence further complicate the policy-making



Food manufacturers across all categories need to communicate clear and concise messaging of (food) scientific evidence (photo: Ocean Spray)

process. Mrs de Lange mentioned the discussions going on around the labeling of country of origin of foods as a current example. In her view, consumers today are interested in knowing where the food they buy comes from, a typical matter of 'Zeitgeist'.

Science is considered a key cornerstone of food policy and there is general consensus that European public health legislation should be science-based. However, developing science-based food policy recommendations is a difficult task as, in reality, it is not guaran-

teed that legislation will in the end take into account "over obvious" science. Emotion can win it from science! Mrs de Lange therefore pleaded for clear and concise messaging on the scientific evidence put forward to policy makers.

No guarantee

This shows that science can be very complex and even "overwhelming" science does not guarantee a smooth translation into legislation. Most recent scientific findings on saturated fatty acids in dairy, as presented by Professor

Astrup (University of Copenhagen) and Professor Ivens (University of Reading) during the conference, indicate that it is time to reassess the way saturated fat is viewed by policy-makers. Latest science questions whether the effect of particular foods, such as cheese, on heart disease or stroke can be predicted only by their content of saturated fatty acids. Food sources of saturated fatty acids such as dairy foods contain other nutrients with an influence on the risk for heart disease or stroke. Professor Astrup believes that using single nutrients and single risk markers of disease are not the way to go in establishing dietary recommendations people eat food, not nutrients.

Stephanie Bodenbach from the European Commission, one of the panellists at the same conference, agreed that science should be revised from time to time. However, she also confirmed that the European Commission bases a major part of its nutrition policies on the 2010 EFSA opinion on dietary reference values for fats which recommends that intake of saturated fatty acids should be as low as possible in a nutritionally adequate diet. In the view of the European Commission, EFSA has taken into account all relevant research, including the new research on saturated fatty acids, in its 2010 opinion. Mrs Bodenbach also mentioned that the European Commission's mandate to EFSA on dietary reference values has been very open and that Member States also exert a lot of power in the discussion around EU public health policy.

Introduction

It is clear that the interaction between scientists and policy-makers is difficult and not always based on common understanding. Professor Andr Huyghebaert (University of Ghent), another pan-

ellist at EDA's conference, described the translation of science into nutritional recommendations as a long and highly sensitive process, often characterized by resistance amongst the academic and policy making communities to change their views. Professor Huyghebaert sees another main challenge in the scientific language used which is difficult to understand for both policy-makers and consumers. A serious effort should therefore be made to translate the scientific findings into clear, concise and easy-to-understand messages. There is also a gap between what the consumer knows about food and how he makes his food choices. This is often influenced by other elements such as safety, image and culture which play an increasingly dominant role in consumer behaviour.

The lively discussions and "clash" between science and policy-making at the EDA conference clearly illustrated that there is a need for exchange to bridge the distance between science and policy-making. EDA has therefore been at the forefront of making this interaction possible and already put quite some effort into the translation of complex scientific findings into clear – but not oversimplified – and concise messages usable for policy-makers. In this context, Professor Astrup's arguments on reassessing recommendations on saturated fatty acids are important foundations when considering the impact on health of dairy foods. EDA is committed to continuing its efforts in facilitating exchange between the various viewpoints in the future. This should ultimately result in evidence-based and useful policy recommendations aimed at informing the consumer correctly, even if the latter is not solely influenced by nutritional information, but also by emotional aspects such as pleasure and culture.

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A revolution in cheese manufacturing

Pastair: Gentle milk treatment

author



Johan Sjöholm has extensive experience as an entrepreneur. 2002 he sold his innovation Arom Pak to Tetra Pak. He is also behind Ecolean AB's new stand up pouch, Bioett's time/temperature sensor and QB Food Tech's continuous mixers QB Mixer. Johan has been 17 years with the Tetra Pak Group, both as Production Director for Tetra Pak Equipment and R & D Director for FillTech

The driving force of the Pastair concept is the gentle treatment. Pastair's gentle processing method is developed to reduce bacteria, mold, yeast and spores in liquid food at the same time preserve the original taste.

The drawbacks of pasteurization

Virtually all liquid foods are treated with a traditional heat pasteurization to be safe to consume and to get a shelf life that is acceptable in terms of distribution. The process varies for different products. Typical milk and milk-derived products are heat treated in order to destroy pathogenic and spoilage microorganisms. Milk treated for example by 72 °C for 15 sec-

onds gets normally a one-week shelf life. To achieve longer shelf life than a week requires treatment with higher temperature or longer holding time is required. One of the drawbacks of all pasteurization is that both the taste and nutritional value is altered, for example can important vitamins be reduced or disappear.

Pastair AB has developed a gentler process that is achieving the required

The unique Pastair process treats milk much more gentle than normal pasteurization while at the same time delivering a safe product (photo: Pastair)



safety for the product but saves nutritional values. This can be done without a noticeable change in taste and without any significant denaturation of proteins. The principle of Pastair is based on inactivation of microorganisms by ozone, O³. Ozone is one of the most powerful disinfectants known.

The Pastair process is built up from the following major steps (see Fig.1):

- Injection of ozone
- Holding time
- Deaeration

O³ is injected into the product and maintained there for a defined time. To be able to remove the O² and O³ from the product, it is heated up to about 60 °C for a very limited time. This short deaeration time creates minimal changes in taste and nutritional value. As the temperature of the process is not exceeding the so-

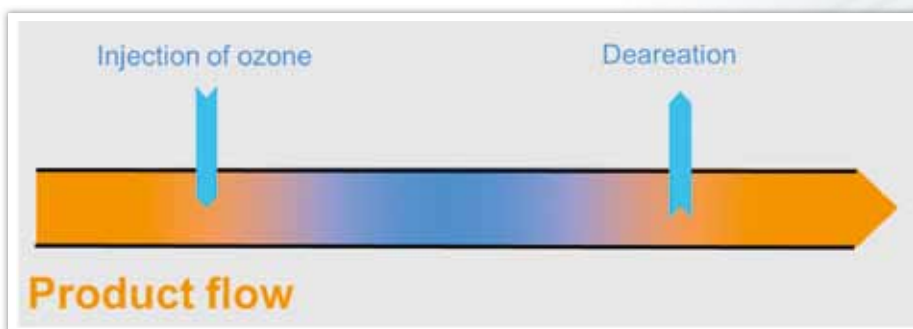


Fig.1: The Pastair process

called denaturation temperature of proteins, the process can be seen as “cold pasteurization”.

The oxygen in the ambient air is concentrated in an oxygen concentrator. The ozone is generated from the concentrated oxygen in an ozone generator. The ozone is then injected directly into the product pipe through an injection nozzle. After the ozone is injected in the product, the ozone will be transformed back to oxygen again, without any rest products. The oxygen used in the process is released back to the air

Benefits

Customer benefits by using a more gentle treatment are:

- Provides a better nutritional content by saving milk enzymes
- Better taste and product quality
- Less waste due to elimination of clostridium spores in cheese manufacturing.

In cheese production the quality is preserved, mainly due to the gentle treatment that preserves the important enzymes. At temperatures over 64 °C the milk enzymes are normally dramatically reduced (see Fig. 2). By preserving important enzymes, a cheese that is safe for consumption as well as having the advantage in taste like an unpasteurized can be achieved

It is well known that unpasteurized cheese has a better flavor profile than heat-pasteurized. Most often a mechanical removal of bacteria and spores in the form of special centrifuges and ultra-filtration in combination with a heat treatment at high temperature of the cream destroys important milk enzymes. This process is also expensive to install and maintain. If these enzymes can be saved in the milk you get a cheese with more flavor, reduced storage time, higher yield and lower cost. The clostridium spores are especially difficult to remove by using heat (the temperature needs to reach at least 137 °C and 3-4 sek).

The clostridium spores are sensitive to ozone and can therefore be easily removed by Pastair. The clostridium spores are damaging the cheese during storage by blowing the cheese and

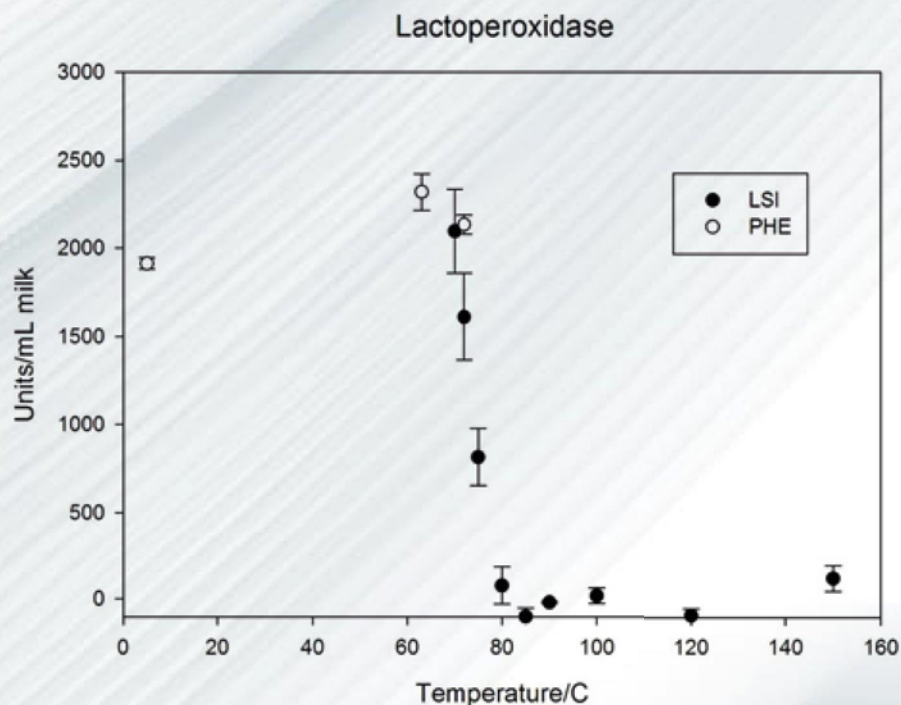


Fig. 2: Influence of heat on enzyme activity in milk (Source: Aarhus University Nov 2010 – Jonatan A Dickow)

can create lethal toxins. Especially hard cheeses are sensitive but also semi hard. (Not only does the cheese look damage but the taste is also affected.)

Pastair will participate at Anuga Food Tech in hall 4.1 B-099. The company will display the unit P1 with a capacity of 1,500 litre per hour. The visitor will also be able to taste cheeses that are produced with Pastair and cheeses that are produced with normal pasteurization (72 °C). Unique is that these cheese (pasteurized and ozonized) are produced from the same milk batch.

Pastair can also be used for dairy products, fruit juices, protein drinks, etc. The benefits for the various applications is described below

Milk for human consumption

If ordinary fresh milk is pre-treated with Pastair and then followed by a traditionally pasteurization is performed, the product will have the same taste profile as pasteurized milk but a longer shelf life will be achieved.

The University of Lund conducted studies of milk treated with Pastair regarding the oxidation of lipids and proteins in 2011. The conclusion was that no increase in either lipid or protein oxidation was detected. Furthermore, no in-

crease in free fatty acids or total acidity due to the processing of Pastair was observed.

Juices

Using Pastair in the process of juices the same microbiological quality and shelf life that is equivalent to a normal pasteurization can be reached. Pastair will provide a taste that is more like the original juice material. Furthermore, it has been shown that the vitamin content of the finished product is higher for juice treated with Pastair than for the same product treated with heat only. A further positive effect could be achieved by exploiting the excess of ozone to wash the fruit even before pressing. This will give a better juice quality, longer shelf life and significant environmental benefits.

Using Pastair can also generate new functional foods and dietary supplements

Proteins

Many proteins such as egg white and whey protein are heat sensitive and problematic to heat process. One effect of pasteurization of liquid egg white is the reduction of the ability to whip it after the heat treatment. This is not affected by the treatment of Pastair.

A first order for a Pastair unit was received from Tetra Pak, June 2011.

Reducing costs without compromising quality

IDM Interview

At FiE, National Starch Food Innovation introduced a number of interesting new ingredient concepts for the dairy market. IDM spoke with Mona Rademacher, European Marketing Manager Dairy, about how dairy companies can reduce costs and still manufacture high quality products.

IDM: You presented a new solution for the cost control of set yoghurt. What good can Elastigel 1000 J do for a dairy processor?

Rademacher: The price of dairy-based ingredients continues to fluctuate. We have developed a solution for manufacturers of set yoghurt that helps them cope with this price volatility. With Elastigel 1000 J food starch, protein can be taken out of a recipe and replaced by a starch-based ingredient without any compromise in mouthfeel and appearance. Depending on the price of SMP (skimmed milk powder), savings of at least 10 Euros per tonne of product can be achieved. We target the markets in North Africa, Middle East and France with this cost saving product.

For the main European market, we showcased N-Creamer 221 and N-Dulge C1 food starches in a cost-effective dairy drink. N-Creamer 221 starch helps manufacturers to replace protein for cost reduction while maintaining texture, whereas N-Dulge C1 co-texturiser reduces cost by replacing fat in dairy products while providing the mouthfeel of a higher fat product.

IDM: You talked about protein replacement, can you talk a little bit more about the fat replacement options you can give?



Mona Rademacher, European Marketing Manager Dairy at National Starch Food Innovation: "We have developed a solution for manufacturers of set yoghurt that helps them cope with price volatility" (photo: National Starch Food Innovation)

Rademacher: Of course. Our range of N-Dulge co-texturizers enables fat replacement while achieving the desired mouthfeel and creaminess. We have a lot of solutions for manufacturers to take out fat and protein from products without the need to sacrifice taste, texture or quality, as is often the case with "light" products. We also have clean label solutions that allow the replacement of fat in dairy products, for example the co-texturizer Novation Indulge 3920 mimics the texture of fat, making products much more attractive to consumers.

IDM: And now let's discuss sugar. Can your products replace sugar as well?

Rademacher: To assist our customers in launching products with the new sweet-

ener, stevia, we have developed Enliten. This is a naturally-derived, low-calorie sweetener made from a patented stevia plant variety. It contains over 95 per cent of the best tasting component, rebaudioside A, or Reb A. Two products are available under the Enliten brand, each with different levels of Reb A [95% and 97% Reb A]. With our texture expertise, we can combine Enliten stevia sweetener with functional starches to help our customers to produce sweet tasting products with less sugar that offer a texture resembling the original. In plain words: we take the product's texture back to what it was before the replacement of sugar.

IDM: All this fine replacement should be done without compromising the declaration of products...

Rademacher: Clean label is a big trend for yoghurt and dessert products. We can for example help to replace protein with Novation 3300 which can be labelled simply as "starch". We are constantly working on the development of new clean label solutions for dairy manufacturers to be able to better serve their needs.

IDM: How do you intend to measure the effects of your products on dairy products? A lot of it is just sensory impressions that are not really measurable in neutral terms.

Rademacher: We have developed a tool to help our customers exactly in this respect. Building on work by our sensory scientists, the Texicon texture language was created to bring terms like creaminess to a more scientific base, to help manufacturers achieve perfect textures faster. For example a "creamy" texture comprises of at least 15 sensory and rhe-



Enliten is a naturally-derived, low-calorie sweetener made from a patented stevia plant variety (photo: National Starch Food Innovation)

ology attributes, such as mouthcoating, oral viscosity and meltaway.

IDM: You mentioned the volatility of prices of dairy-based ingredients. Is there no fluctuation of prices for your raw materials?

Rademacher: Our products help to reduce the reliance on ingredients that

are vulnerable to fluctuations, such as dairy-based ingredients.

Look at the current situation. Nobody knows what the financial crisis will lead to. All signs point to further cost reduction in our industry. We can offer solutions that enable the replacement of expensive ingredients such as fat, sugar or protein, without impacting on mouthfeel or texture.

New deZaan Fresco Cacao range ADM



The Fresco Cacao range delivers a chocolate taste with reduced bitterness (photo: ADM)

ADM Cocoa offers a new range of cocoa products with a fresh, mild fruity cocoa taste. The deZaan Fresco Cacao range includes cocoa powder, cocoa mass and chocolate.

The Fresco Cacao range delivers a delicious chocolate taste with reduced bitterness and can complement dairy or fruit applications. Manufacturers are often presented with difficulties in the formulation of chocolate in dairy applications as the bitterness of cocoa is not always compatible with the acidity of yoghurts and certain fruits. To help address this problem, chocolate and cocoa are available now that are less bitter. adm.com

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Valio ensures milk quality with Delvotest

DSM



Valio, Finland's largest producer of dairy products, has reached an agreement with DSM to use its microbiological test, Delvotest, for detecting antibiotics in milk (photo: DSM)

Valio, Finland's largest producer of dairy products, has reached an agreement with DSM to use its microbiological test, Delvotest, for detecting antibiotics in milk.

The contract will see Delvotest used throughout Valio's supply chain, including its dairies, laboratory facilities and affiliated farms. Valio selected DSM as its testing partner as a result of its track record in the farming sector. Laura Kulkas, Veterinarian, Valio stated: "We needed a reliable, robust and effective testing procedure that

could adapt to our operational needs whilst ensuring safe products for our customers. After a demonstration of Delvotest's capability, we are confident that DSM, through its extensive industry experience and strong reputation, can provide this."

DSM's Delvotest BLF (beta-lactam fast test) analyzes milk samples and measures traces of beta-lactam, the main antibiotic used to treat cattle, in just 5 minutes. Delivering consistently reliable results, the new test brings greater efficiency to detection of antibiotic residues, saving time and money for dairies worldwide.

With Delvotest BLF, dairy professionals no longer need to wait for lengthy tests to prove that the milk is safe to use. The test is easy to use, and requires no new laboratory equipment for Delvotest customers. Dairy professionals can accurately check the milk safety at any stage, from farm to the processing facility. Delvotest BLF can be used in conjunction with other Delvotest products for maximum reliability and speed. dsm.com

New cottage cheese cultures

Chr. Hansen



The new Fresco 3000 culture program delivers better cheese and higher yield (photo: Chr. Hansen)

Chr. Hansen's new Fresco 3000 culture program for cottage cheese promises higher yield and better cheese quality. The new Fresco 3000 series is designed to provide a cheese yield increase of 2-5.

The opportunity to reduce production costs together with improved cheese quality and more robustness against phage attacks gives Chr. Hansen reason to believe that they can increase the market potential for cultures in the cottage cheese market. Apart from production advantages, the new Fresco series come with consumer benefits: a deliciously smooth texture and mild taste provided by the cultures. Further, with its high-protein, low fat and low sugar content cottage cheese hits the healthy dairy trend spot on. chr-hansen.com

MAFEX

31 Oct – 2 Nov, Casablanca



The 1st international food technology exhibition MAFEX is scheduled to be held from 31st October to 2nd November, 2012 in O.F.E.C Casablanca, organised by IFW EXPO and IEC. This event, the first in Morocco, aims to be the most important gathering for trade suppliers and buyers from Morocco and other African countries and a real platform to showcase new products, meet new contacts .

The show provides an ideal international meeting to discover new process and machines and reap new business opportunities in Africa. MAFEX 2012 will feature 450 exhibitors and more than 10,000 trade visitors. MAFEX offers 3 days exhibition open exclusively to trade visitors and 2 days of conferences. Learn more about MAFEX at iecgroupp.org

New yoghurt cultures with WOW effect

Chr. Hansen



New YoFlex and nu-trish cultures guarantee exquisite taste, healthy and clean label for low-fat yoghurts (photo: Chr. Hansen)

Chr. Hansen launched a series of new YoFlex and probiotic nu-trish yoghurt cultures. The focus has been on developing cultures with good taste and texturing properties in low fat milk.

More than 20m tons of yoghurt is consumed every year corresponding to each person on earth eating up to four kg a year. So far less than 20% of this volume is low fat yoghurt. The reason is simple: consumers refuse to accept poor taste or a thin, watery mouthfeel. And the natural trend is driving product development towards using an absolute minimum of ingredients, which for yoghurt means no stabilizers, thickeners and flavors to compensate for the lack of fat.

The new portfolio of seven cultures, three of them with the well-documented BB-12 probiotic strain enables dairies to deliver on all three parameters at the same time: Exquisite taste, healthy and clean label. chr-hansen.com.

Milk powder free of emissions

Reven



Self-cleaning cyclone separator (photo: Reven)

At Anuga FoodTec, Rentschler Reven showcases air cleaners based on the cyclone principle that are particularly suitable for removing milk residues, steam and grease vapours from the exhaust air of milk dryers. The cleaners have a high separating efficiency over the entire particle range while keeping emissions below the current limit of 10 mg/m³ of exhaust air. Sophisticated airflow technology prevents deposits of baked-on milk powder and provides for self-cleaning of the polished stainless steel separator blades.

Efficient cleaning of the extracted air improves the cost effectiveness of the drying process as milk residues are returned into the dryer. reven.de/killing-grease

The “clip-tube” Poly-clip System



The new clip-tube is a tubular package clipped on each end, supplemented by an extrusion nozzle on a threaded end piece and a closure cap (photo: Poly-clip System)

Poly-clip System has introduced a new packaging as cost-effective alternative to tubes: The clip-tube for processed cheese and other pasty products. The clip-tube is a tubular package clipped on each end, supplemented by an extrusion nozzle on a threaded end piece and a closure cap. The CBS Cap Bonding System opens up new market opportunities with this extremely competitive package.

The clip-tube can be produced in pack sizes from 30 ml with diameters ranging from 18 mm to 50 mm, offering advantages over conventional tubes:

- The package is pleasant to the touch and easier to squeeze.
- After each extrusion the material tension of conventional tubes sucks in air which could react with the content – this does not happen with clip-tube.
- A conventional tube is rarely emptied completely – the soft film of the clip-tube provides a simpler and better solution enabling the entire contents to be used up completely.
- Compared to conventional conical tubes, the cylindrical shape of the package permits a higher packing density in the box in only one work step.
- The package requires less space in the rack because a Euro hanger can be attached which permits the packages to be suspended for presentation, even in refrigerated counters.
- The clip-tube improves visibility in the rack and differentiation from competition products.

The transfer-sealing/clipping-machine TSCA with hydraulic dosing pump HDP and the CBS Cap Bonding System form a fully-automatic packaging line for clip-tube. A threaded end piece is adhesively attached to a tubular bag clipped on each end (clip-pak). With its modular design, the CBS permits attachment of various components for each work station, e. g. extrusion nozzles, closure caps or caps with Euro hanger. For this, up to eight work stations are operated using an electrically-driven rotary disc. Oscillating bowl feeders guarantee that every single component is positioned correctly, offering continuous production. A central, movable display ensures reliable controlling of all production processes. For data logging, remote maintenance and diagnoses, there is an Ethernet interface. The CBS is easy to convert. By simply exchanging the collet, the machine can quickly be adapted to various product diameters and lengths. Corrosion-free materials and integrated safety covers guarantee maximum safety and hygiene. polyclip.com

TasteSolutions Mouthfeel programme Givaudan

Givaudan is addressing the mouthfeel challenges that food manufacturers of dairy products face in low-calorie products with its TasteSolutions Mouthfeel programme. The signature programme includes a unique sensory language, Sense It Mouthfeel, and advanced technologies to optimise the taste profile of reduced-calorie dairy products and provide the premium flavour perception consumers desire. Mouthfeel, along with aroma and taste, provide the full experience of a food product in the mouth and impact how the product is perceived. While introducing new and effective natural mouthfeel ingredients through the programme, Givaudan has also developed a specific sensory language for mouthfeel.

E-Commerce with replacement parts DairyBits

DairyBits provides easy access to a wide range of cost-effective machinery replacement parts for a variety of dairy machines. DairyBits has entered the world e-commerce with the launch of its new website, dairybits.co.uk, making the process of ordering replacement parts quicker, and cheaper.

Unwrapping of cheese

Alpma's first installation at Jermi

As manufacturer of processed cheese specialties, Jermi Käsewerk has a long standing experience. The use of high quality raw materials, accurate processing and continuous improvement of processes and product quality has brought the company to a leadership position in its segment.

In the Laupheim plant in South Germany, cheese specialties in various shapes and formats are prepared and packaged for end consumption. Jermi manufactures standard products as well as added-value products for niche markets.

Over the past 16 months, Jermi has ordered four machines from nearby supplier Alpma, of which the latest is a completely new development.

Cheese cutting

In 2009, Jermi installed a SC Basic cheese cutting line made by Alpma to become more flexible and to keep exact product weight. Besides fast delivery time, the flexibility of the machine in terms of products and portion sizes as well as in terms of product consistency has turned the balance in favor of Alpma. The machine is able to process up to 24 different cheeses starting from



Jermi in Laupheim, Bavaria is a specialist for processed cheese and added-value fresh cheese products (photo: Jermi)

very soft sorts like Camembert and processed cheese, reaching to hard cheese. Diameters of the cheese loafs can vary between 160 to 300 mm.

Portioning

For cutting of portions, Jermi opted for a high-capacity machine model CUT 25/M. The focus was here high yield coupled with high flexibility. The CZT 25/M processes standard cheeses as well as various fresh cheese portions and por-

tions of smoked cheese. Both the CUT 25/M and the SC Basic are equipped with ultrasonic technology which allows for cutting soft and sensible products into exact and precise portions.

Unwrapping

The most recent machine supplied by Alpma to Jermi was the FAP/BTS Basic line – the first machine for unwrapping cheese from ripening foil. Prior to awarding of contract, Alpma and Jermi had in-deep discussions which ensured that aspects from practical experience at Jermi became a basis for construction.

Gerhard Jerg, CEO Jermi: “We were able to feed our practical experience into the design of the FAP. Alpma has worked to our full satisfaction.”

Linked to the FAP is a cheese-block cleaving machine BTS Basic which feeds a high-capacity slicer made by Weber. This line can process up to 3 tons of cheese per hour.

During the project, both Jermi and Alpma benefitted from continuous direct communication. Mr. Jerg. “Alpma has convinced with the whole package of solutions they made. We are very satisfied with design, functionality, esthetics and performance of the machines.”



Jermi is satisfied with design, functionality, esthetics and performance of the new FAP machine (photo: Alpma)

Calendar

May			
7-10 May	Cibus	Parma/Italy	cibus.it
9-10 May	DIN Conference	London	dairyindustrynewsletter.com
15-18 May	Hispack	Barcelona/Spain	hispack.com
21-24 May	IDF Cheese Ripening & Technology Symposium	Madison, Wisconsin, United States	www.idfcheese-us2012.com
22-24 May	Vitafoods	Geneva/Switzerland	vitafoods.eu.com
June			
4-8 June	IDF/ISO Analytical Week	Tel Aviv, Israel	www.idf-iso-analytical-week.org
19-21 June	IDF/INRA International Symposium on Spray Dried Dairy Products	Saint-Malo, France	http://colloque.inra.fr/sddp2012
26-28 June	Food, Health, Natural Ingredients (FiA, Hi&Ni)	Shanghai/China	fiasichina.ingredientsnetwork.com
September			
16-18 Sept.	International Dairy Show	USA	dairyshow.com
4-6 Sept.	EDA Annual Assembly	Barcelona/Spain	euromilk.org/eda
19-21 Sept.	China Brew&Beverage	Beijing/China	chinabrew-beverage.com
23-26 Sept.	InterMopro, InterCool	Düsseldorf/Germany	intermopro.de
November			
4-8 Nov.	IDF World Dairy Summit	Cape Town, South Africa	www.wds2012.com
13-15 Nov.	HIE Health Ingredients Europe	Frankfurt/Germany	hieurope.ingredientsnetwork.com
13-15 Nov.	FoodPharmatech	Herning/Denmark	foodpharmatech.dk
14-16 Nov.	BRAU Beviale	Nürnberg/Germany	brau-beviale.de

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Developing the Microbial Fuel Cell
Inhibition of lactose crystallisation in ice cream
Retrofit makes processes safer and more efficient

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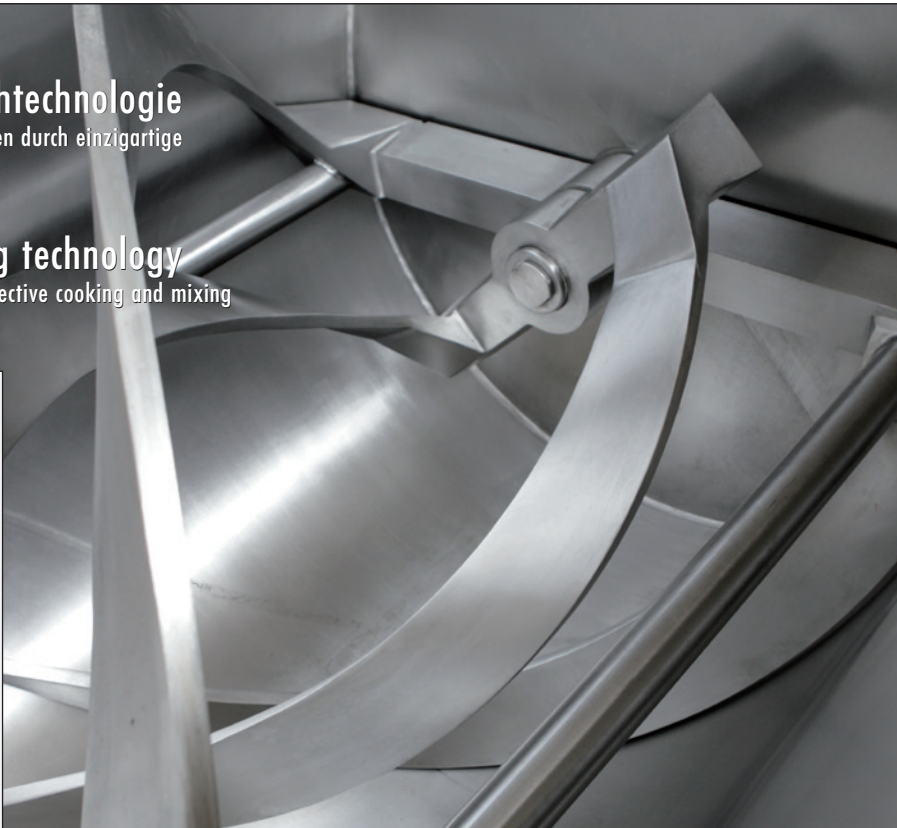
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