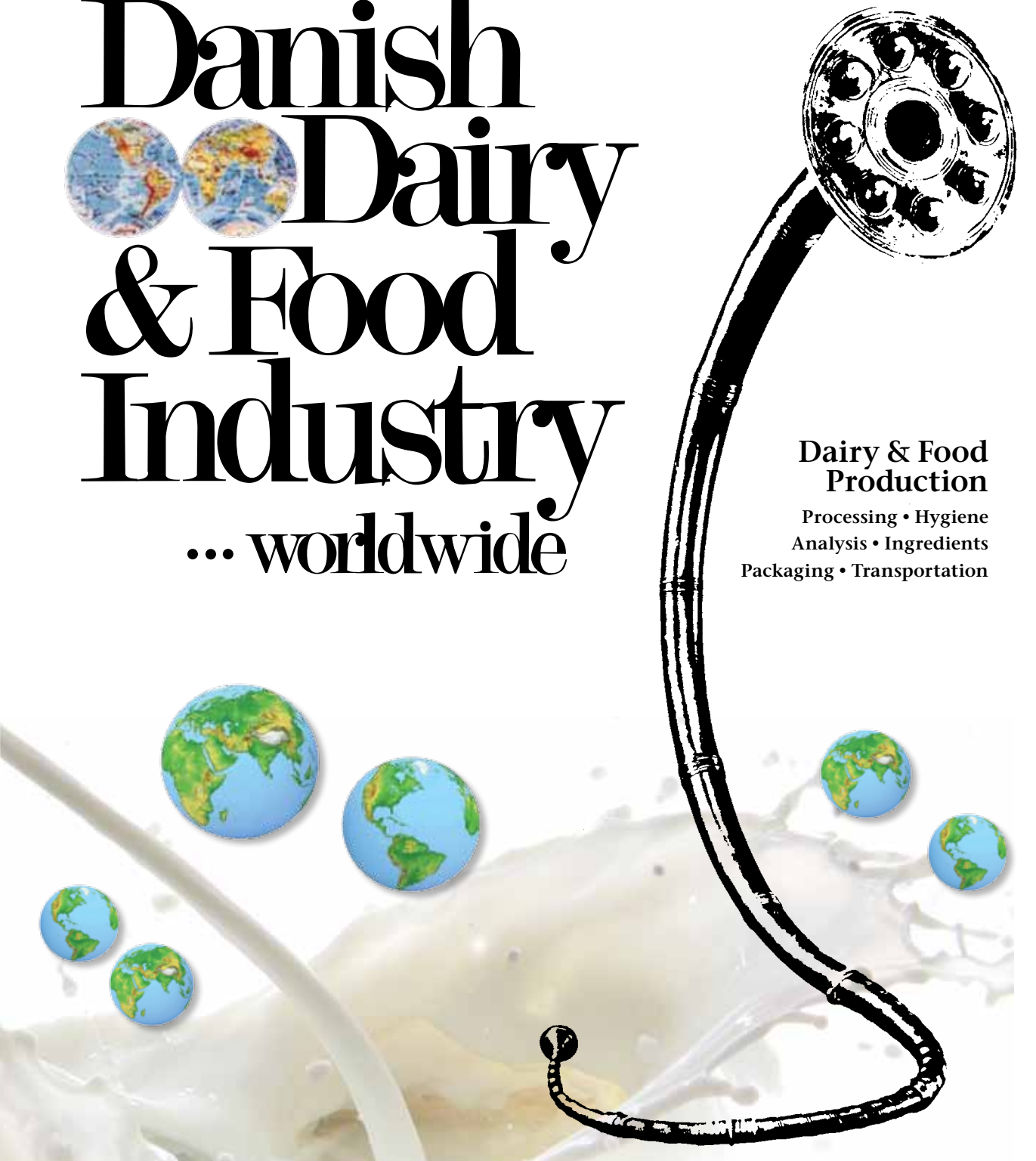
Danish Dairy & Food Industry

... worldwide



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Managing in Volatile Markets

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Danish Dairy & Food Industry ... worldwide

23
September 2013

Denmark - September 2013

Managing in Volatile Markets

"Managing in Volatile Markets" is the major theme running through Danish Dairy & Food Industry ... worldwide this year.

Dairy farmers, dairies and supplier companies are challenged to perform at their very best on the fluctuating global markets, where the financial crisis has changed known buying patterns and consumer behaviors. The new order is exemplified by low-income western consumers turning towards the discount dairy markets, while high-income groups in e.g. the West, China, Russia and Middle East still demand dairy products with added value, such as luxury, health, disease prevention, guaranteed high quality and pure-nature etc.

During the next few years it is further expected that middle-income groups in developing countries will increase demand for more fresh dairy products, while more low-income groups will be able to afford recombined milk products produced from various milk powders. This is the situation for the entire industry, which in this edition of the Danish Dairy & Food Industry informs you about how they cope with these challenges.

A large number of dairy supplier companies, educational and research institutions participate in Danish Dairy & Food Industry, which this year is introduced by the Danish Minister for Trade & European Affairs, Nick Hækkerup along with one of the world's leading dairy companies, Arla Foods.

Besides studying this magazine our readers have the opportunity to meet representatives from the Danish dairy and food industry at large international exhibitions in 2013 as for example:

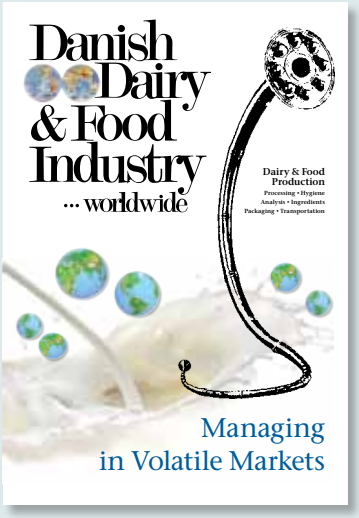
WorldFood in Moscow 16-19 September, World Dairy Expo in Madison 1-5 October, ANUGA in Cologne 5-9 October, IDF World Dairy Summit in Yokohama, Japan 28 October - 1 November, WorldFood in Ukraine 30 October - 1 November, Danish International Food Contest in MCH Herning 5 -6 November, WorldFood in Kazakhstan 5-8 November and FIE Food Ingredients Europe in Frankfurt 19-21 November.

The Danish Dairy Managers Association and the Danish Dairy Engineers Association own and publish Danish Dairy & Food Industry ... worldwide. We have published the magazine since 1976 and this issue is the 23rd in succession informing you about Danish dairy and food industry.

Danish Dairy & Food Industry ... worldwide is distributed in more than 120 countries in 9.000 copies. Further, the magazine is available at our homepage: www.ddfi.dk. Our experience tells us that about 100.000 dairy, food and marketing specialist worldwide study this journal every year. ■

Anne-Sofi Christiansen
Chief Editor

Anna Marie Thøgersen
Editor



The cover shows a lure. This instrument dates from the Danish Bronze Age (about 600 B. C.). It has only been found in Denmark and the former Danish territories. Today it forms part of the Danish Quality sign known as the "Lure-brand", used on dairy products. Background picture by Colourbox.

Circulation: 9.000 copies

Readership: Leading personnel in the dairy and food industry in more than 120 countries as well as employees at Danish embassies and consulate-generals, Government advisers and representatives of marketing councils.

The editorial staff of Danish Dairy & Food Industry ... worldwide:
Chief Editor, M. Sc.
Anne-Sofi Christiansen
Editor, M. A.
Anna Marie Thøgersen

Litographed by:
Gitte Kristiansen,
Jorn Thomsen A/S, Elbo
Kolding, Denmark

Printed by:
Jorn Thomsen A/S, Elbo
Kolding, Denmark

Editorial office and distribution:
Danish Dairy & Food Industry ... worldwide
Munkehatten 28
5220 Odense SØ
Denmark
Tel.: +45 66 12 40 25
Fax: +45 66 14 40 26
www.maelkeritidende.dk
info@maelkeritidende.dk
www.ddfi.dk

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AU2MATE PROCES AUTOMATION PARTNER

AUTOMATION AND INDUSTRIAL IT WORLDWIDE

Au2mate's know-how covers every dairy process from raw material reception to packing including high valueadded processes, OEE and MES solutions. Please refer to our web page for further contact information in Denmark, UK and Dubai.

Au2mate develops and supplies automation solutions for the process industry world wide. These solutions are prepared through teamwork and close partnerships with our customers, and they cover the entire range from complete automation projects to consultancy services and advice.

We have many years of experience in the field of process automation. We have developed a structured work method, and with efficient knowledge-sharingtools, we can guarantee rapid delivery of top-quality solutions at competitive prices.

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QUICK FACTS ABOUT AU2MATE

- Au2mate was founded in Denmark in 2001.
- Has 53 employees at offices in Denmark, UK and Dubai and holds more than 500 man years of experience in dairy automation.
- Project-oriented, has delivered more than 900 projects, PLC, SCADA, MIS/MES and ERP integration to dairies throughout the world including Nordic countries, Europe, America, Asia, Africa and Middle East.

PLEASE VISIT WWW.AU2MATE.COM FOR FURTHER CONTACT INFORMATION

Although nearby markets will continue to be of great importance to Denmark and Danish exporters we also have to reach out to new emerging markets.

When the Going gets Tough…!

By
Nick Hækkerup, Danish Minister for Trade & European Affairs

Growth market strategies

A popular saying goes; ”when the going gets tough the tough gets going”. Times right now are indeed tough, challenging and volatile especially in several nearby markets on the European continent. Although nearby markets will continue to be of great importance to Denmark and Danish exporters we also have to reach out to new emerging markets.

As a result the Danish government has prepared special growth market strategies for the 10 most prospective markets in terms of future growth. These include the BRIC markets as well as Vietnam, Turkey, Indonesia, South Korea, South Africa and Mexico. Around 60% of future growth is expected to be found in these markets alone.

We also have to pay careful attention to other markets that are showing rapid growth and where Danish products, technologies and know-how may see not only commercial opportunity but also can contribute to the overall development and capacity building. Several African nations are on a positive path and although Danish development funds have been provided to this continent for many years, embracing commercial opportunities have only recently started to take off. Greater coordination between official development cooperation and commercial engagement goes hand in hand and represents an area of substantial future potential.

Opening doors

Our growth market initiatives are not only targeted but also ambitious. We aim to grow Danish exports to these markets with more than 50% within three years from the launch of each of the strategies. Resources are allocated to these markets and from the government’s side we have taken it upon ourselves to play a very active role when it comes to relationship building and contact facilitation.

What can Denmark offer?

But what is it exactly Denmark has to offer markets - both new and old?

I believe that our tradition of producing safe and healthy high quality foods in a sustainable yet effective manner is at the absolute core. We produce just such foods in Denmark and we produce the equipment and ingredients to facilitate local production of such foods abroad. It is a national priority supported by well-coordinated cooperation between authorities, farmers, food producers and academia. This results in respect and credibility from buyers, who trust food products and ingredients from Denmark.

We know that consumers and end-users alike to an increasing extent carefully consider these qualities and are willing to pay for these.

Yet another area of Danish business excellence is related to the reduction of environmental impact of farming and food production. Water and energy usage has been an issue for many years and has brought about technological development. Such technologies are increasingly sought after on a global scale and are quickly becoming yet another Danish export strength.

I feel Denmark and Danish Food and Agro-industrial producers are in a very promising position when it comes to tackling what may be described as the new global order. Yes, the going is tough especially close to home but opportunities await elsewhere and Denmark is going for them! ■

Arla Foods Adding Value

In January this year, Arla Foods released the company's new strategic targets for the next five years. The significant aspect of the Arla 2017 Strategy is the increasing focus on markets outside the EU. Besides strengthening the major Lurpak®, Castello® and Arla® brands, Arla Foods speed up on e.g. producing highly refined whey and milk powders at two of the Groups plants; Denmark Protein and Arinco. These two facilities produce millions of kg of premium dairy goods targeting the middle class consumers - and not least their infants - on the new rising markets.

Arla Foods in Figures

In 2012 the global cooperative dairy company Arla merged with the German dairy MUH and British Milk Link. Thus Arla Foods grew to 12,300 co-operative owners in Denmark, Sweden, Germany, Belgium, Luxembourg and the UK.

- Net turnover 2012: DKK 63,114 billion
- Milk weighed in: 10.4 billion kg
- Production facilities in 12 countries, sales offices in further 30
- Number of employees, January 2013: 18,112

By Anna Marie Thøgersen, Editor

The global middle class

The ascending middle classes in China, Asia, Russia, the Middle East and several African countries count millions of people who have achieved better standards of living. - When families earn more money, they typically want to spend more on giving the very best to their children. Besides improving schooling and education, this includes high quality and nutritious infant foods, stresses Frede Juulsen, Arla's Senior Vice President, Consumer International and responsible for the Chinese market.

Today, Arla is the most significant producer of both own label infant foods - branded Dano®, Milex®, Baby & Me® - as well as a TPM-producer for all major suppliers of infant foods. The recipes of milk goods for infants contains ingredients derived from both whey and milk powders produced at two of Arla's Danish facilities, Denmark Protein respectively Arinco.

Valuable whey from DP

Denmark Protein (DP) is a fully owned plant within Arla Foods Ingredients, and the facility is one of the company's fastest growing. - In 2012, we had a total whey intake of 3 million tons, and we manufactured 150,000 tons of different protein and lactose ingredients in approx. 100 variants. These ingredients are used in a wide range of foods such as; ice cream, yogurts, chocolates, dressings, sauces, protein bars, health products, meat and prepared meals and also as egg substitutes in baked goods, tells Erik Vesløv, DP's Factory Manager during the past seven years.

Erik Vesløv adds: - Special blends of protein and lactose ingredients used in infant formulas is one of DP's fastest growing commodities, in particular DP's Lacprodan Alpha-10®, which is composed so it resamples the real thing, breast milk. DP's whey-blends are used by major global suppliers of infant formulas, including Arla Foods itself.

Premium infant foods from Arinco

One of Arla's milk powder plants, Arinco is situated close to DP in Mid-Jutland. Arinco too, is a large purchaser of DP's special protein/lactose blends, as Arinco manufactures the Arla brands; Milex®, Dano® and Baby & Me®.

Arinco is one of the largest dairies in Denmark with a total milk intake of app. 600 million kg milk a year. - Not so many years ago, milk powder manufacturing was nicknamed "balance production", but it is far from the case today, as all major dairy/food operators turn to us when they need to buy, compose and specify recipes on special milk powder products. Within the last few years the tailor-made milk powders has grown from a few percent to 30% of the total production - with an expected increase to 60% in the next few years. So tells Arincos Factory Manager, Mogens Bøgh Pedersen, and he informs that Chinese BIOSTIME International Holdings Ltd., is one of the last incoming customers who chose Arla Arinco as a supplier of milk powder products for baby foods based on high quality Danish milk.

The Chinese grandchild

The content of the infant formulas and baby foods are different milk

powders, protein and lactose ingredients as well as varying degrees of e.g. minerals, vegetable oils and Omega-3 fatty acids. - The new middle class families outside Europe are focused on giving their children the best nutrition - also promoting the children's physical growth and cognitive abilities. China is by far one of the major importers of child nutrition, and based on the country's one-child policy, there is a special focus on this one child who has a team of two parents and four grandparents to procure high quality child foods, stresses Frede Juulsen.

- But the global trend towards nourishing and prioritizing the next generation grows year by year, and to be on focal level of this trend, we recently launched our organic Baby & Me®, as we expect a continuously rise on demands for quality goods with additional values such as "organic", concludes Frede Juulsen.

Arla's Senior Vice President, Consumer International, Frede Juulsen with a sample of Arla's organic Baby & Me®.

Valuable ingredients

Whey and milk powders are two of the fastest growing business areas within Arla Foods. Out of Arla's total turnover of DKK 63 billion, the powder ingredients businesses accounted for almost DKK 10 billion.

Last year Arla signed agreements with China's leading dairy company China Mengniu Dairy Company Ltd. and with the leading food/beverage company COFCO Corporation. These agreements will most likely strengthen Arla's position on the Chinese milk market. ■

Tailor-made Dairy Courses at KOLD College

KOLD College is an expert within tailor-made courses for the international dairy and food industries

By
Hans Skjerning, Principal, and
Bjarne Vagn Larsen, Vice-Principal,
KOLD College

Global outlook

At KOLD College's Dairy Training Centre the international aspect is integrated and has played a major role for years. Numerous courses and contacts worldwide bring inspiration to the college - and demand high standards of flexibility and quality.

Our staff successively participates in international activities, and each year the dairy department teachers visit European dairy companies to catch up on new trends and tendencies within dairy production.

International Dairy Courses

Every year KOLD College arranges a number of tailor-made courses for Danida and international companies.

Join the January 2014 Course!

In January 2014, KOLD College arranges a 2 week Theoretical & Practical Dairy Training Course. The course will be conducted in English and the main focus will be on the following subjects: Milk treatment in general, Production of dairy products within the following categories; fermented milk, special milk products, cheese, butter, ice-cream and milk powder. Further the course focuses on: Laboratory control of milk and dairy products.

More information about this dairy course is available at www.koldcollege.dk ■

A detailed program for the up-coming January 2014, 2 week Dairy Course is available at www.koldcollege.dk or contact educational coordinator Sten Holmgaard Sørensen on E-mail: shs@koldcollege.dk

KOLD college

KOLD College FACTS

- All educations and courses linked by the concept "From Soil to Table".
- Staff 180 employees, of which 110 lecturers with vocational or academic backgrounds.
- 1,300 full time equivalent students and course participants.
- 7,000 students attend educations or courses each year.
- Buildings covering 34,000 square meters.

KOLD College - Areas of education:

- Agriculture, horticulture, animal keeper, forestry
- Catering (Chef, Waiter, Baker)
- Dairy technology (Dairyman, Dairy Operator)
- Technical gymnasium (3-year pre-university study course)
- Academy (Laboratory technologist, Process technologist (food, dairy or processing)), Service economist (hotel and restaurant, service management, event and tourism)
- Bachelor (in Dairy, Laboratory, Food, Process)
- In-service tailor made training and courses

www.koldcollege.dk

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ALFA LAVAL

About Denmark Protein

Denmark Protein is owned by Arla Foods Ingredients, a subsidiary of Arla Foods. The plant has produced whey protein since 1980 - today it has approx. 200 employees and produces 73 whey-based protein products and 25 permeate/lactose products. The 32,000 m² large plant takes in 3 mill. tons of whey annually and had a production volume of 75,008 ton in 2012.

New Modern Whey Protein Plant for Arla Foods Ingredients

By
Rolf Pedersen, Business Director - Dairy, ALECTIA

ALECTIA has helped Arla Foods Ingredients implement one of Europe's largest whey protein plants at the existing plant Denmark Protein in Nr. Vium, Jutland. The new plant can process 4.5 bill. kg whey annually, nearly doubling Denmark Protein's total production capacity. Hygiene, the environment, and working conditions have been in focus, and the plant has been implemented without unexpected delays or costs.

As consultant, ALECTIA has been responsible for design, planning, construction management and supervision through the whole project. The task has involved project management as well as architectural and engineering work covering buildings, installations and utility plants. ALECTIA has also been responsible for managing budget, time and quality. On February 1st, Denmark Protein's new and modern protein plant was officially inaugurated - on time and at the expected cost.

The expansion involves a new drying tower which can dry whey protein equaling 2-2.5 bill. kg whey, a capacity increase of 80%. Furthermore, new production facilities for filtering systems, production lines for future products and improved employee facilities have been implemented. The utility plants for cooling and water have been expanded, and the entire IT structure has been improved while the administration was moved.

Focus on quality and environment

"This important expansion gives us a modern plant with the highest hygiene standards and the lowest possible energy consumption," Site Director Erik Vesløv explains. "We can now produce products of the highest quality, as the market demands."

Denmark Protein's new plant has been designed according to modern ISO standards. A clear classification of hygiene zones prevents product contamination, and improved facilities for cooling and water treatment reduces the environmental print. For instance, decontamination and recirculation reduce the total water consumption, and efficient UV treatment ensures that reused water can replace regular utility water.

Satisfying a rising international demand

Simultaneously with the new plant, improvements on the existing plant have been implemented. Denmark Protein can now satisfy a swiftly rising demand for specially produced whey protein, which is used to produce infant formula and energy drinks among other things. Currently, 95% of Arla Foods Ingredients' products are exported to the global market.

The implementation of the new plant proceeded without unexpected delays or costs, while the production continued in the other facilities. The current production is expected to be doubled before 2017.

More expansions to come

The whey protein plant is part of a larger expansion strategy in Arla Foods. In 2012, the implementation of a lactose plant worth 900 mill. DKK with an annual capacity of 85,000 ton started. According to plan, it will be finished by October 2014 and running at full capacity by 2016. ALECTIA is also adviser to Arla Foods on this project. ■


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A New Innovation from SPX

Controlled Cavitation

By
Bent Oestergaard, Director Global Marketing, Food & Beverage, SPX Flow Technology, Denmark

Figure 1: APV Cavitator.

APV Cavitator

Process engineers will be familiar with the sound of banging pipes or pumps caused by cavitation. It is created by the sudden formation and collapse of low-pressure bubbles in liquids due to mechanical forces. Controlled cavitation is a new process technology which harnesses and controls the cavitation forces and friction energy and uses them for efficient microscopic mixing and scale-free heating. Compared with some alternate technologies, the breakthrough APV Cavitator offers significant benefits in terms of improved process efficiency, increased running times, high product quality and lower operational cost.

The innovative technology to control the cavitation effect is contained within the patented APV Cavitator shown in Figure 1. A specialized rotor (Figure 2) at the heart of the machine has precisely machined cavities in which hydrodynamic cavitation occurs, generated from the spinning action of the rotor. In this way, liquid passing through the Cavitator is subjected to controlled cavitation away from the metal surfaces, protecting equipment from damage. The microscopic cavitation bubbles produced create shockwaves in the liquid as they collapse which provides efficient dispersion and emulsification and prevents scaling.

Figure 2: Example of rotor with four rows of cavities.

Controlled Cavitation Applications

Liquid heats within the Cavitator uniformly without high temperature metal heat transfer surfaces, preventing product scorching or scaling of equipment. When used with high protein products, this scale free heating enables thermal systems to run for long periods and can improve product quality.

Other applications for the Cavitator include microscopic mixing and emulsification of liquids with liquids, solids with liquids and liquids with gases. The microscopic level at which this occurs can improve hydration, increase emulsion stability, provide higher mass transfer rates and accelerate processing, improving quality and reducing operational time and cost.

The APV Cavitator generates very narrow particle size distribution. In dairy and food emulsions particle sizes of three or four microns can be achieved which gives interesting potential for difficult pre-emulsions prior to high pressure homogenization. The controlled cavitation can potentially lower the required homogenization pressure and remove the need for multiple homogenization steps. In some applications, such as egg processing, the Cavitator can replace the homogenizer completely.

Scale free pasteurization

As the Cavitator has no heat transfer surfaces it is ideal for the pasteurization of a wide range of heat sensitive and high fouling products including dairy nutritionals such as whey protein concentrate (WPC), acidified products, other proteins, sauces, puddings and chocolate products. Controlled cavitation can also be used for the combined scale free pasteurization and homogenization of liquid eggs - resulting in two or three times more run time between clean in place (CIP) cycles. The process has also been shown to increase temperature without protein degradation, improving product quality and shelf life.

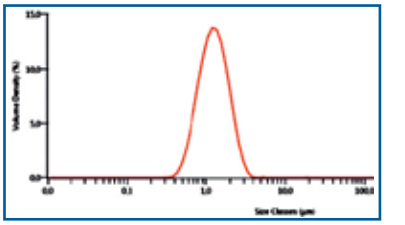

Figure 3: Particle size distribution of functionalized WPC.

The pasteurization of WPC grades such as WPC80 with high solids levels (greater than 30%) is a particularly challenging application with short run times and long CIP cycles. In such areas the Cavitator can be incorporated in a pasteurizer for use in critical temperature zones to avoid fouling. It can also avoid heat denaturation or control high heat denaturation. For WPC60, for example, the Cavitator has been shown to provide more than ten hours of run time with very high denaturation without fouling.

Key applications	Products / process examples
Scale-free heating	Pasteurization and Homogenization of liquid egg.
	Pasteurization of WPC and other proteins and nutritional drinks
	Puddings, BBQ and cheese sauce
Microparticulation I functionalization of liquid or rehydrated powder WPC	Fresh Dairy Products and protein drinks
	Fine Foods /dressings, sauces etc.
	Meat, poultry and sea food
Microscopic mixing and hydration of powder ingredients	Hydration of gums and dairy powders and others.
	Ingredients mixing in high viscous products
Emulsions: Dispersion and homogenization	Mayonnaise, dressings and ice cream. Recombined dairy products, beverage and cosmetics
Gas Dispersion of $C0_2$ and N_2 - Carbonation - Aeration/foaming	Beverage and beer
	Cosmetic mousse
	Mayonnaise and desserts etc.
	Meat, seafood and pet food mousse

Key applications for the APV Cavitator.

Microparticulation and functionalization

Functionalized WPC food ingredients can be used in a wide variety of food and beverage products, including dressings, sauces, mayonnaise, ice cream, fresh cheese, yoghurts and nutritional protein enriched beverages. They can also be used for meat, poultry, seafood, confectionary and bakery products. The APV LeanCreme™ process is well known for providing the microparticulation (MP) of WPC by combining heat denaturation and ideal particle size distribution into one-step. SPX is now launching a next generation MP or functionalization solution based on controlled cavitation. This breakthrough technology provides highly efficient MP and functionalization of proteins and ingredients including WPC35-80 as shown in Figure 3. Raw materials can be based on sweet or lactic whey and as liquid ultrafiltration concentrate or rehydrated powder. For more information, please visit www.spx.com. ■

Figure 1: Special designed automatic weigher that puts weight variable labels on the bottom of cheese.

Weighing and Labeling Equipment for the Food Industry

By Bent Nygaard, Founder and CEO, Bent Nygaard Elektronik A/S

Cooperating with clients

Since 1980, the company Bent Nygaard Elektronik A/S has provided weighing devices for the food industry, and a greater part of this equipment is delivered to Danish cheese companies.

Cooperating with the Danish dairy industry has been essential for the company, as our clients diversified needs have inspired us to shape and develop our present product portfolio.

Our product line

At the company we produce our own product range of; dispensing label printers, label dispensers, check weighers, lines for weighing and weight labeling, weighing terminals, interface units etc. All products are specially manufactured for the food industry as well as performed in stainless steel and designed for high capacities. Each of the products is often supplied as total solutions for all kinds of food producing industries.

Machines for specific demands

We provide special machines designed according to customers' specific demands. Figure 1 shows an example of a custom-built automatic weigher that puts weight variable labels on the bottom of the cheese.

In this case, we have built the weight equipment so it meets the customer's current space, thereby avoiding a greater change of the packing area.

New product line

Recently, we have expanded our product range with a new complete line of industrial weighers and MID type approved check weighers, see figure 2. The check-weighers are controlled via touch screens, and the programs are SQL-based. In the smaller solutions, it is possible to copy the desired statistics to the USB port in pdf format.

Figure 2: MID type approved check weigher.

This new product range, we will showcase for the very first time at the Danish International Food Contest, to be held in MCH Herning 5-6 November 2013. We are looking forward to see you! ■

Department of Food Science
FACULTY OF SCIENCE
UNIVERSITY OF COPENHAGEN

Dairy Technology - in an Online Classroom

Take a course that will provide you with all the basic knowledge on dairy technology - and take it anywhere in the world!
University of Copenhagen offers the e-learning course **"Introduction to Dairy Technology"** and all you need to attend is access to the internet and a webcam.

Content
The course will cover:
- Basic dairy chemistry
- Microbiology of raw milk and dairy products
- Quality assurance of raw material and product
- Processing of dairy products: Fluid milk products, Fermented milks, Cheese, Butter and Powder
- Cleaning and hygiene

The course is based on a series of e-learning modules integrating literature studies, exercises relating to theory and case studies. More information about the course at: http://www.courseinfo.life.ku.dk/Kurser/LLEK10256.aspx

Requirements?
We have designed the course to fit students with a background equivalent to a B. Sc. in Food Science. The course equals 7.5 ECTS credits and it is possible to attend as an exchange student, credit student or as part of a continuing education plan.
Successful completion of the course is based on a final written exam as well as on finishing each e-learning module, i.e. participation in online discussions, questionnaires, fulfillment of individual assignments and group work.

Teachers
The teachers are from the Department of Food Science, Faculty of Science, University of Copenhagen. They are all experienced researchers with a comprehensive knowledge of the science and practice of dairy technology.

About the Department of Food Science
The Department of Food Science, Faculty of Science, University of Copenhagen performs research and conducts teaching at the highest academic level in the area of food science.
More at http://www.en.ifv.life.ku.dk


(Photo: Anders Clausen)

Schedule
The course is offered once a year and next time will be in September 2013. The course will start on Monday 2nd September and end on Friday 8th November 2013.

How to attend?
For information on how you become an e-learning student, tuition fee and the possibilities for continuing education please take a look on the faculty homepage under education: http://www.life.ku.dk/english.aspx

Other questions, please contact the course responsible, Professor Richard Ipsen at ri@life.ku.dk

TREPKO: A Reliable Partner for Stormy Weather

By Agnieszka Libner, MSc MBA, Managing Director, TREPKO, Poland

End-packaging solutions from TREPKO - 700 Series.

Flexibility of the TREPKO Cup Filling & Closing Machines - 100 and 200 Series.

The increased volatility of dairy products' prices is - among others - a result of rapid changes in the demand structure, which cannot be balanced with the supply within a narrow time limit. Therefore, the main goal of dairy processing companies that operate in volatile markets is to be able to respond to the fast changing consumers' preferences. From an entrepreneur's perspective there is no single recipe how to manage the market risk, however product differentiation as well as aiming at cost leadership are the key issues. In the modern business world, these two classic strategies are no longer mutually exclusive, but on the contrary - the right combination of them leads to a strong position in the market.

As a leading supplier of packaging machinery for the dairy industry the TREPKO Group pays special attention to provide our customers with solutions that build their competitive advantage. Both of the above mentioned aspects are taken into consideration, i.e. ability to create new products fast and keeping the production costs low. The idea behind our operations is to be close to our customers, so at the moment - with the headquarters in Denmark - the TREPKO Group is present in the United Kingdom, Poland, Sweden, Norway, Germany, North & South America, Middle East, and East Africa. The TREPKO machines operate in 90 countries all over the world, which gives us a perfect opportunity to understand different business environment and take advantage of a rich, worldwide experience.

Product differentiation

A perfect example that illustrates the TREPKO idea of supporting the dairy product differentiation is the new packaging technology implemented to our offer and represented by the 9000 Series - Forming, Filling & Sealing Machines. Actually, two product categories are included in this Series, i.e. standardized machines for packaging of small portions of different fat categories as well as customized solutions to form, fill and seal containers of larger volumes. The latter machines can be equipped with a variety of filling systems that allow

for filling even 4 different flavours at the same time. Combined with a sequential cutting tool, which offers a possibility to change between different cutting patters by a push of a button, this solution is fully flexible in terms of producing various flavour/cutting combinations. So today we have a 4-pack with 4 single flavours and tomorrow a 6-pack with 2 different 2-layer products? Why not? Only sky is the limit!

The idea of fully flexible machines is not new, and TREPKO has successfully exercised it for many years with other machinery types, such as Cup Filling & Closing Machines of the 100 Series (in-line machines) and 200 Series (rotary machines). All filling options are available, starting from standard dosing systems for liquid and semi-liquid products combined with pre-dosing or/and dry filling options as well as swirl products. This filling variety can be combined with other features, such as multi-purpose cassettes, dosing two product volumes at the same time or different closing options. Implementation of new marketing ideas has never been easier and faster.

Cost leadership

A growing demand for faster packaging machines requires another important issue to be addressed. In case of the dairy products, end-packaging is not just a question of a group of machines, as the technology processes require a perfect integration and reliability of the whole packaging line. This is added-value when choosing one supplier for all items of the line - from a single packaging machine to a palletiser. All of the end-packaging equipment can also be supplied by TREPKO (700 Series) to decrease the costs of packaging process, such as labour and packaging material. Considering the local conditions, an investment in these solutions can be returned even within 18 months. For example, the costs of a carton for automated use can be even 25% cheaper than a carton for manual folding.

A recognized supplier is also a guarantee of lower operations and maintenance expenses due to a higher reliability level of machines. At TREPKO these are not just words, as we take full responsibility for the supplied machines in the form of an extended guarantee. Moreover, all the customers are offered a free-of-charge training aimed for operators and maintenance engineers. The training sessions are held at the TREPKO state-of-the-art Conference, Training and Exhibition Centre, in a tailor-made and practical way. The benefit of such training is simply an increased productivity of supplied TREPKO machines thanks to better skills and knowledge of the operators and maintenance engineers.

Price volatility in the dairy markets cannot be avoided, but the risk resulting from it can be managed. One of the ways is choosing reliable and responsive partners on the way to success. ■

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Orana is Local and Global

International Industrial Fruit Company with solid roots in Denmark

By
Niels Østerberg,
Director, Orana

When Orana was established more than 28 years ago it was based on know-how from the old "Rynkeby Mosteri" (later Rynkeby Foods - Scandinavia's largest juice manufacturer). In 1999 Orana became an independent company. Globalization and rapid growth quickly became a reality and Orana expanded into markets all over the world - with great respect paid to the local roots in Rynkeby, Denmark, where focus still are on developing high quality products with great taste.

Today, with more than 75 years of know-how and experience in developing, producing and selling tailor-made Industrial Fruit Solutions, Orana is a leading manufacturer of great taste to a global market within the dairy, beverage and bakery industries.

Danish know-how worldwide

The Orana Group still has its head office in the historic buildings in Rynkeby, has subsidiaries with own production facilities, sales and R&D service in Egypt, India and Vietnam, sales office in Malaysia and co-operation with agents in several other countries. Main markets are besides Europe, Middle East, Far East, South East Asia and Africa. Orana is passing on know-how and local spirit to its subsidiaries - all close to the source of fruits - a huge advantage in innovation, logistics and time of delivery of products.

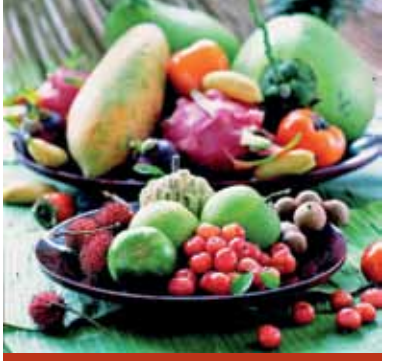
Global perspective - local ideas

Orana is not a consumer-brand itself but a bit of Orana is found in many global and local leading brands of beverages, dairy and bakery products. Orana knows what it takes to transform a global perspective into an extraordinary taste to fit a specific local market. The Orana way of doing business ensures that all products are customized and developed at Orana's own R&D centers in close co-operation with the customer.

Orana offers global perspective and local ideas to a world of different taste.

Innovative product development

One of Orana's core strengths is innovation. The wide range of products includes e.g. compounds, concentrates, pulps and purees for fruit based beverages, fruit preparations and compounds for all Dairy Products with fruit and fruit fillings for Bakery products. Orana also produces Natural Extracts and high quality Food Service Products and is involved in fresh fruit processing. ■



Fruit for
ORANA develops, produces and sells fruit for:

Dairy Products
- Yoghurt
- Fromage Frais
- Drinking Yoghurt
- Juice Milk
- Whey/Permeate Drinks
- Ice Cream/Ice Lollies

Beverages
- Juices
- Nectars
- Juice Drinks
- Ice Tea
- Carbonated Drinks
- Cordials

Bakery Products
- Cakes
- Pastries
- Pies

Sealed Air behind Sustainable Initiatives

Sealed Air adds 360° value to the food and beverage market

By Helle Andersson, Marketing Communications Manager North and Central Europe, Sealed Air Denmark A/S

From farm to fork

Sealed Air has developed a comprehensive spectrum of unique new "farm to fork", combined packaging and hygiene solutions pledging to bring unrivalled operational efficiency to processors, retailers and food service operators, an enhanced customer experience and increased sustainability all-round. The A to Z approach (Figure 1) begins with facilitating hygienic conditions for livestock and extends right through to the provision of safe, healthy and convenient food for the consumer.

Business drivers

The emergent business drivers are food safety, shelf life extension, operational efficiency, sustainability and brand building. Food safety and shelf life extension contributors include hygienic procedures, safe and sustainable packaging solutions, dedicated risk management training and antimicrobial processes. Ambitious customer efficiency and sustainability objectives are being successfully met by such factors as minimised water and energy usage and optimised total packaging and cleaning costs. And to enable products to win a fought-over place on the customer's fork, the integrated Sealed Air food and beverage solutions directly support brand building by effectively exploiting packaging's ability to positively impact the entire product experience. This embraces a wide range of attributes including differentiating visual appeal, freshness, taste, easy opening, convenient portioning, storage, and even cooking in the package, as well as increasingly important environmental responsibility.

Belarusian dairy pioneer

One of the largest producers of cheese and dairy products in Belarus is heading for massive savings following the integration of a fully automated Sealed Air packaging system. The Beriozovsky cheese-making plant in Berioza in the Brest region set up a Cryovac® BLR2 RoboLoader™ with a VR 8600-18DC divided chamber machine and a ST98 shrink tunnel in March 2012. This will make a majority contribution to its ambitious cost savings programme with a target of EUR 1 million. The new line packs the cheese directly from brine, optimising hygiene. This is the first equipment of its kind in operation in the CIS and the plant is delighted with its implementation.

"Automation of the packaging process is just the beginning. It's a first

Food protection from farm to fork.

Focus	DAIRY			
	PROTECTION and VALUE CREATION			
Themes	**Food Safety**	**Operational Efficiency**	**Shelf Life Extension**	**Brand Building**
Solutions	Salmonella, Sagazaki and Listeria Program	AquaCheck™	Proaseptic® Retail and Food Service	CRE8, Printing
	Phage Disinfectant Program	Caustic Recovery	Active Barrier Materials	Easy Opening Systems
	CIP Intelligence Technique	Automated Cheese Packaging Systems	Cheese bags, BDF® and Darfresh®	

Figure 1: The Sealed Air solution focuses on delivering value. The figure includes Diversey and Cryovac solutions.

Beriozovsky dairy pioneers operational efficiency in cheese production in the CIS with a Sealed Air solution.

step that opens up broad horizons," Vladimir Popenia, Director of the company comments. "In the very near future we plan to introduce A to Z automation at our facility."

The Sealed Air System

The new Sealed Air system in operation at Beriozovsky integrates a robot that transfers the cheese wheels from the brine on to an automated conveyor for packaging into shrink bags for maturation. Full automation practically eliminates the need for operators. In less than a minute a cheese wheel of 10 kg is packed in a Cryovac® BK3550 shrink bag, ready for storage. The line can package 70 tons of cheese per day with just two to three people involved in the process, compared to the average of 20 staff previously required to perform this task. Automated loading represents a completely new step in raising the level of hygiene of cheese production. There is no contact with human hands and no cross contamination, enabling an overall higher level of product safety, which ultimately leads to extended shelf life. The propriety Cryovac® soft vacuum technology of the line facilitates packaging of vacuum sensitive cheese without the risk of structural deformation. This is particularly advantageous for Rossiyskiy-type cheeses (comparable to Tilsiter), which are extremely popular in the CIS region. And on the sustainability front, the machine uses bags that are 5% shorter in length than their predecessors, so less material to source and dispose of. ■

Process Scan©

By Gert van den Hoven, Cheese Expert, DSM Food Specialties

DSM Food Specialties is a major dairy ingredient company specializing in culture and enzyme for Dairy applications. DSM Food Specialties now provides a new service, a process optimization tool called Process Scan©.
Designed specifically to improve the performance of the cheese process, this unique tool is proven to help cheese manufactures optimize production processes, increase production, and maintain consistently high cheese quality without investments.

Introduction

DSM Food Specialties is a leading producer of specialty ingredient solutions for the international dairy industry. Its products contribute to the success of many of the world's favorite dairy brands.

As leader in enzyme and starter culture technology, DSM has for example, introduced many pioneering coagulants to market over the past forty years - including the Fromase® and Maxiren® ranges.

In today's highly competitive dairy industry, when it comes to cheese, producers have high expectations from their ingredient purchases. Every component must tick multiple boxes, and yield performance - along with the cheese quality - is one of the key factors.

Delivering quality at an affordable cost is a daily business for the ingredient suppliers. On top of that, DSM Food Specialties delivers a new service to their clients to fine-tune and optimise their process parameters at cheese production plant level. The reduced process variations results in a more consistent cheese composition while significantly improving the cheese yield and retaining the same cheese quality.

Optimized Cheese Production

The Plant manager of the cheese factory Amalthea in the Netherlands, Joost van Dijk says: *"Thanks to this great service of DSM they optimized our cheese production and we increased our cheese yield significantly, and the cheese quality remains at the same high level."*

Higher cheese yield

Through the team at DSM, Process Scan will survey the cheese process, identify and optimise aspects with high standard deviations, and focus on areas where cost can be reduced.

By looking at the whole picture, Process Scan delivers minimised costs of production, whilst at the same time maximising through-put and optimised quality and consistency.

Developed by NIZO Food Research (Dutch Dairy Institute), the program is based on a unique database providing us with the tools to optimise the process of cheese making.

When implemented and process parameters are fine-tuned, cheese yield can be increased significantly.

The key is to achieve high cheese yield, whilst maintaining consistent cheese quality.

DSM Food Specialties - known as a major dairy ingredient company within cultures and enzymes - provides a new service, a process optimization tool called Process Scan©.

Combining the expertise of DSM with the Process Scan provides the perfect combination to optimise the cheese making process.

Meet the Process Scan™

A cheese specialist will visit the dairy and analyse the cheese process. During the visit to the plant, relevant information is collected and samples taken at various predefined stages in the manufacture.

After analysing the samples and validating the software tools (NIZO Premia), our experts will calculate the benefits of various changes and propose how to decrease the relevant standard deviations.

Optimizing the application of cultures and coagulants may lead to savings - however more importantly resulting in higher yields and more through-put in your manufacture.

Case: German cheese factory

A cheese company in Germany, converting 280.000.000 liter milk annually into Gouda cheese. DSM applied the Process Scan.

After the Scan and implementation, the standard deviation figure for water content was decreased to 0,5% and the level of denatured whey protein was slightly increased and correctly incorporated in the casein matrix, whilst retaining the same cheese quality.

This resulted in a higher cheese yield of 300.000 Euro yearly without any investment.

The results, after validation, will be discussed in detail and with your agreement; the suggested adjustment of the parameters will be tested and proved. Only after jointly confirming the results (cost reduction, production increase) the results may be implemented in your cheese process.

Examples which are achieved are:

- Decrease of moisture variation between cheeses
- Decrease of losses in the whey
- Increase of whey protein incorporation in the casein matrix.

The total Process Scan™ investigation and reporting will take approximately 12 weeks.

The advantages of this approach are that you avoid trial and error which is very costly; you achieve an improved process performance and the project is carried out confidentially by DSM Food Specialties. When teaming up with DSM Process Scan™ you are assured that you stay best of class and that your cheese plant performance is always operating at the highest level. ■

Fluctuating Markets Require Optimization

It requires great flexibility and co-operation within the facility supplier industry in order to optimize dairy and food processing plants, enabling the companies to produce and sell a wide variety of dairy/food goods on the highly fluctuating markets.

By Mogens Andreasen, Managing Director, LP Kolding

Highly experienced

LP Kolding is a specialist within designing, planning, construction, documentation and installation of hygienic stainless steel tanks and process equipment - always in co-operation with our customers.

We custom-design PED approved pressure tanks for the following purposes: Fermenters, mixing tanks, inoculum tanks, process tanks, tube heat exchangers, sterile tanks, air tanks, vacuum tanks, and pressure cookers. The tanks constantly fulfil EU standards for safety in operation, material design, manufacturing process and continuous tests. Further, we ensure all requirements regarding strength, insulation and cladding depending on tank location. Moreover, we are experts within final assembly and subsequent documentation.

Booming powders

Powders to be used in food production is booming these years, and recently we were contacted by Nikodan, who asked us to build an enclosure for the company's powder conveyor system. In order to maintain hygiene, the Nikodan conveyors must be cleaned frequently and thoroughly. Thus we had to construct an enclosing solution providing the total facility from rusting when it came into contact with water and which could cope with major temperature fluctuations. These requirements have been met by fully sealed stainless steel tanks from LP Kolding.

Afterwards Chris Hansen, partner at Nikodan stated: "In our collaboration with LP Kolding we've not only benefitted from their extremely professional competence in the manufacture of tanks, we've also learned to greatly appreciate their incredible flexibility. In a very busy period they were able to help us produce frame structures for our conveyor systems. They embarked the assignment without having taken on such a task before. This just shows that they really know what they're doing as craftsmen."

Global Company

During the years, LP Kolding has constructed units for: Fermentation, evaporation, powder pumps, drying chambers, butter churns, pressure filters, and complete units - ready to install in dairy, food and pharmaceutical plants.

The LP Kolding staff count 24 highly competent employees, and the company contributes as subcontractor as well as independent business partner within our field of expertise: Designing and building hygienic process equipment and tanks for customers - around the world. ■

Solve your cheese challenge
We make it happen

When it comes to cheese, there's a whole world out there. Whether you are a global player or regional producer, DSM can help you produce the perfect cheese. Across eight key cheese types, our enzymes and cultures are proven to accelerate production, increase output, cut costs and carbon emissions, boost flavor and texture, and maximize consistency.

We'll help you optimize every step of the cheese making process with our expert technical knowledge – the result of several decades' experience.

From rich indulgent cheeses to healthy, low fat varieties and value ranges, you can trust our synergistic portfolio to deliver the solution to any cheese challenge. Plus, we offer technical support across every continent and a global distribution network. Active in all dairy segments including enzymes, cultures and food protection solutions, think of us as your experienced, sustainable partner.

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Picture 1: SRS 10 Vibration Sifter - 8 m² for baby food (dry cleaning).

Picture 2: SRS 10 with Integrated CIP.

A Steady Course in a Volatile Market

By Lars Valentin Peters, Business Development Manager, M.Sc. Dairy Science, Scan-Vibro A/S

As a major supplier of vibration equipment to the food and dairy industries Scan-Vibro A/S is obviously affected by changes of demands in the industry. If we are to stay ahead in the market, we must at all-times become even better at developing new products and solutions to meet the ever-more complex needs of our customers.

For more than 60 years, Scan-Vibro A/S has been a worldwide supplier of customer designed vibration technologies. Focus has always been on tailor made quality solutions, and we are constantly prepared to listen and co-operate with our customer as well as understanding the market needs.

In a time of great volatility, we keep focus on developing sustainable nice products - always with a touch of uniqueness. One of the success factors is to clarify the technologies required to facilitate development of a new process solution. Thus, even during the financial crises and increased marked volatility, Scan-Vibro A/S has managed strengthening our position as a significant solution provider of vibration technology.

An example of our success and sustainable development is the SRS Sifter, optimized for manufacturing of high value dairy powders to be used in baby foods or as ingredients in pharmaceutical products.

SRS 10 Sifter for baby foods

The SRS 10 Sifter comes in two versions, one optimized for dry cleaning and one with integrated CIP. Picture 1 shows two SRS 10 Sifters with each 8 m² screening area, supplied to one of EU's major manufactures of baby foods. On a very low screen mesh, the sifters handle more the 9 tons of powder per hour. The machine designs are optimized for quick dry-cleaning within less than 30 min.

Picture 2 shows a SRS Sifter with integrated CIP, using our Pop-in Pop-out nozzle (see picture 3).

The Scan-Vibro sifter designs are developed according to thorough evaluation:

- Optimal sieving function
- Gentle sieving function (for instance minimum breakdown of agglomerated powders)
- Hygienic design, with a minimum of product build-up (less waste during cleaning)
- Overall lifetime of the machine (low maintenance)
- Self-draining (less energy used during dry-out)
- Easy access and screen change
- Low noise impact

Furthermore, the SRS 10 Vibration Sifter design is based on the required standards and guidelines for machinery to be used in the food industry such as EHEDG, USDA 3A, NZFSA (NZCP6). As a member of the EHEDG organization, Scan-Vibro A/S takes active part in the improvement of machinery to be used in food industry.

Picture 3. Pop-in Pop-out CIP Nozzle

Other core equipment

Yet another of Scan-Vibro's popular equipment is the Vibration conveyors type TRS, designed for use in numerous areas of the food industry, and wherein a closed sanitary and gentle conveying is required.

The TRS also comes as a reverse 2-way vibration conveyor TRS-R, where the powder can be transported either one or the other way. The advantages of the TRS-R conveyor is e.g. a very limited building height and food print combined with competitive pricing.

In a volatile market, Scan-Vibro focuses on our ability to combine our expertise, knowledge and global reach to develop solutions that match our customers' diverse, yet very specific, needs and challenges.

Scan-Vibro A/S

Scan-Vibro's technological superiority rests on knowledge and the employees' year-long high technical experience. The staffs count 67 highly skilled engineers, smiths, CAD draughts-men and other technicians.

The company is engaged in long lasting and innovative relationships with large international plant- and engineering companies. When it comes to collaboration with these companies, Scan-Vibro contributes as a subcontractor within the field of vibration technology expertise. However, Scan-Vibro also works alone, when customers worldwide learn about the company's expertise and want to either replace or expand their plants with new types of vibration equipment.

Scan-Vibro A/S was founded in 1949, operates two production facilities and serves customers worldwide. ■

Balancing the Global Market

Fully re-furbished or brand new equipment for food producers on either established or emerging markets - that's the way the Danish company FH Scandinox always has, and yet still manages the fluctuating global market place. - At the moment we run projects for dairy and food customers in e.g. Norway, Sweden, France, Malaysia, Indonesia, Uruguay, and Haiti, states Torben From, Sales Director at FH Scandinox.

By Anna Marie Thøgersen, Editor

Sales Director Torben From, FH Scandinox (bottom of the stairs) is visiting MILLS´ state-of-the-art extended mayonnaise and caviar plant in Fredrikstad, Norway. On top of the stairs MILLS' Project Engineer Øystein Olsen, and in-between Process Operator Jannicke Thunold.

Excellent TINE equipment

Within the time frame 2013-14, FH Scandinox will be the main contractor involved in selling and dismantling no less than eight of TINE's dairy plants, as this Norwegian Group is fully engaged in streamlining the company's dairy facilities throughout the country. - It is somewhat a coincidence how we got involved in this huge project, but a larger part of this excellent equipment is by now shipped off to dairies and factories in several countries around the world, Sales Director at FH Scandinox, Torben From explains.

Fresh Milk in Thailand

One of the TINE factories, producing fresh milk and cream, was purchased by a Thai customer as a complete and ready-for-operation plant. - The Thai customer inspected the plant on a visit to Norway, and just three days after arrival, the contract was signed, tells Torben From and ads: - FH Scandinox acted as supervisor on the transaction, and within a week the acquisition price was transferred from Thailand to Norway. Six week later again, the huge plant was dismantled and shipped off to Thailand. In 2014, the FH Scandinox staff will be in charge of re-establishing and initially start the production in Thailand.

Mayonnaise in Norway

One of FH Scandinox' most comprehensive projects is going on right now in Fredrikstad, Norway. The customer is the large Norwegian MILLS Group, who is rationalizing its mayonnaise and caviar production which previously took place at three different locations, but is now concentrated in Fredrikstad. - We are responsible for dismantling all the equipment from the two former plants and re-establish the machines in the Fredrikstad-plant. Moreover, FH Scandinox has sold a fully-automatic tank and dosing system for this extended mayonnaise plant, stresses Torben From. Besides engineering and installation, FH Scandinox is also the headmaster of the rather complex control system of the new increased MILLS facility.

Ice cream in Ireland and Africa

For several years, FH Scandinox has operated within ice-cream-production, and two of the most recent customers are Irish Kerry and the Danish-based Fan Milk International which runs several plants for ice-cream and frozen yoghurt in West African countries.

- Just a few months ago, we completed our second large ice-cream project for Kerry. In each of the projects we have handled planning and installations of both renovated and

Facts about FH Scandinox
FH Scandinox holds more than three decades of experience within projecting and implementing technical process solutions, be it refurbished or brand new equipment, for the dairy and food sectors throughout the world. No task is too small or too big. FH Scandinox employs 40 highly skilled and dedicated professionals.

new ice-cream-mixing equipment in Ireland, and for the time being our skilled project-technicians are testing the production.

Cheese in Uruguay

However, FH Scandinox also features customers in the cheese-making sector. And one of the most recent contacts was established via this very dairy magazine between Torben From/FH Scandinox on one side, and on the other, the Dane Jørgen Schmidt, who afterwards took contact to Uruguay's Top-3 dairy company Calcar.

Jørgen Schmidt is former Technical Director of the Danish cheese-powder company Lactosan which also includes the subsidiary Lactosan Uruguay. By now Jørgen Schmidt runs his own agency, representing several Danish suppliers to the Uruguayan dairy sector, and through this magazine, he last year learned about FH Scandinox' dismantling one of TINE's cheese plants. Thus, Jørgen Schmidt contacted Torben From, and later on he visited TINE. - We signed an agreement last year, with Jørgen Schmidt as the intermediary, and FH Scandinox as the supervisor on the sale to the Dairy Group Calcar. We expect the plant to be ready for production in mid-2014, and by then the capacity of the plant will be three tons of yellow hard cheese per hour, stresses Torben From.

Asia focus on margarine and hygiene

The Asian countries are also a steadily growing market for the Danish company. During the last few years this region has increased focus on higher hygiene in the food production. This is also a fact in Malaysia and Indonesia where FH Scandinox primarily serves customers in the oil- and fat-sector. Thus, the latest project included implementation of a fully automatic CIP-system throughout the entire margarine production for a Malaysian customer. In general, CIP is a completely new world for many oil- and fat-producers in Asia, but the hygiene-system will be a necessity in near future due to the Asian consumers steadily growing demands for high quality foods. ■

Flexibility and Profitability Drives the Evolution

By Yvonne Andreasson, Research & Technology Portfolio Management Director, Tetra Pak

The main driving forces for the evolution of dairy equipment are customers who demand lowest possible cost per produced unit. This means increased efficiency and automation, increased hygiene requirements and accuracy, and decreased consumption of utilities and minimised product losses.

In the dairy industry of today there are four very clear trends driving developments for dairy processing equipment.

Consolidation & specialization

The hard pressure on dairies today, from brand owners and retailers, will not change in the future and will continue to drive lower operating costs and increased productivity - by even more consolidation into larger production units. This trend also puts demands on the processing equipment, in regard to reliability, efficiency and throughput. Food safety will continue to be of paramount importance for all food processors as consumers' confidence in brands and products never can be taken for granted.

Niche products will continue to attract consumers' interest and there will be room for smaller units focusing on such products.

In the drive for higher operational performance the issue of design of whole production lines and entire plants is central, i.e. how to design a line and optimise the production planning to get maximum efficiency.

Tetra Pak's ability to meet the needs of the dairy producers is based on concepts we call Tetra Lactenso, customized dairy production solutions designed for efficiency, product quality and sustainability. These solutions build on our extensive knowledge in dairy technology in combination with cutting-edge engineering expertise. From this starting point, we can offer objective advice and deliver customized solutions that meet each specific customer's production needs and product requirements, whether for individual components or complete lines, which will enable customer to achieve outstanding lifecycle economy. Tetra Lactenso thus stands for the cutting edge in cost-effective dairy solutions and is backed by validated performance guarantees.

Tetra Pak's concepts called Tetra Lactenso, are customized dairy production solutions designed for efficiency, product quality and sustainability.

Flexibility

The demands for greater flexibility will continue to increase. As more new products and more new variations of products are requested from the consumers, more and quicker changeovers are required. The time to introduce new products, new tastes or new functionality has shortened. The producer wants to be able to quickly, easily and at a reasonable cost adapt the production to new conditions and changed prerequisites. Thus, the processing equipment needs to be very flexible and deliver a wider range of diverse products without losing efficiency or increasing the cost for production.

Automation

A strong trend worldwide that will continue is the demand for integration of all the data and information systems in a dairy. Together with requirements for traceability and security in the automation solutions, this means that business systems, production planning, warehousing, logistics, process control, packaging, traceability, maintenance, remote support and service will be completely integrated.

Tetra PlantMaster is the innovative top-of-the line automation and control solution for plant applications. It is a modular plant automation solution based on open industry standards that breaks through all the barriers to good communication within a food processing plant. Since it is an open system it is prepared for the future. It offers connections to administrative systems, advanced reporting as well as complete traceability from raw material to packaged goods.

Sustainability

Dairies today want to combine maximum production efficiency with minimum environmental impact.

Tetra Pak focuses on environmentally efficient production solutions, in order to support customer needs. "Design for Environment" (DfE) is the practice of integrating environmental aspects into product design and development. DfE is a guarantee for future developments and secures that we continuously look to new and more sustainable solutions.

DfE is applied in the design of components and modules - as well as complete production lines and plants, to minimize product losses and the use of water, energy and detergent. DfE also ensures that our equipment and production units do not contain or use any hazardous matter, diminishing the environmental impact of decommissioning.

- - -

Tetra Pak is continuously evaluating novel technologies that may have an impact on the way dairy products are processed. In order for novel technologies to be accepted by the industry and consumers they must offer substantial values in terms of product quality or safety, operational cost or environmental impact. ■

"Danish Dairy & Food Industry ... worldwide" is distributed in the following countries:

Africa: *Algeria, Belize, Benin, Botswana, Burkina Faso, Cameroon, Congo, Ethiopia, Gabon, Gambia, Ghana, Guinea, Kenya, Lesotho, Liberia, Libya, Madagascar, Malawi, Mali, Morocco, Mauritius, Mozambique, Niger, Nigeria, Senegal, Sierra Leone, Somalia, Sudan, Swaziland, South Africa, Togo, Tunisia, Tanzania, Uganda, Zambia and Zanzibar.*

Asia: *Bangladesh, Bhutan, Burma, China, Cyprus, Hong Kong, India, Indonesia, Japan, Laos, Malaysia, Mongolia, Nepal, North Korea, Philippines, Singapore, South Korea, Sri Lanka, Taiwan, Thailand and Vietnam.*

Australasia: *Australia, Fiji and New Zealand.*

Europe: *Austria, Belarus, Belgium, Bosnia, Bulgaria, Croatia, Cyprus, Denmark, Eire, Estonia, Faeroe Islands, Finland, France, Germany, Greece, Greenland, Holland, Hungary, Iceland, Italy, Latvia, Lithuania, Luxembourg, Malta, Macedonia, Norway, Poland, Portugal, Rumania, Russia, Serbia, Slovakia, Slovenia, Spain, States of CIS, Sweden, Switzerland, The Czech Republic, Ukraine and United Kingdom.*

North America: *Bermuda, Canada, Mexico, Panama and USA.*

South America: *Argentina, Barbados, Bermuda, Bolivia, Brazil, Chile, Columbia, Costa Rica, Cuba, Ecuador, El Salvador, Guatemala, Guyana, Haiti, Honduras, Jamaica, Montserrat, Nicaragua, Paraguay, Peru, Puerto Rico, Tobago, Trinidad, Uruguay and Venezuela.*

The Middle East: *Afghanistan, Bahrain, Egypt, Iran, Iraq, Israel, Jordan, Kazakhstan, Kuwait, Lebanon, Oman, Pakistan, Qatar, Saudi Arabia, Syria, Turkey and Yemen.*

(Photo: Colourbox)

Managing Volatile Markets

Volatility is closely related to risk. The more volatile the market, the more risky it will be to trade - but you must take risks if you want to grow your business. Further, the growth of high and middle income groups in Eastern Europe, Middle East, China and Russia, challenge the manufacturers to compete in the markets for raw materials, and inevitably this drives prices upwards.

By
Crispin Gell,
Sales Director,
Dairy Fruit

Changing consumer needs

Success in today's challenging markets depends on understanding and predicting changing consumer needs and how to respond with relevant products and solutions at the right prices. The key questions for food and beverage businesses include:

- How will short/longer term changing consumer need's affect us - what actions to implement?
- Are historical market segmentations still relevant - or do we need to find different ways of looking at the markets?
- How can we keep our existing customers and consumers loyal - and win new ones?
- How can we stay ahead in anticipating their needs, accelerate innovation, and time to market?
- How do we manage this innovation focus - to respond to consumer needs for value and keen prices?
- How do we adapt our business to establish the capabilities needed to compete effectively in today's market?
- How can we improve operational efficiency and reduce costs, e.g. in marketing, sales, customer service, distribution or manufacturing?
- How should we adapt our sourcing strategies for affordability, sustainability and security of supply?
- How can we most effectively manage and reduce food safety risks given the new issues in the changed economy and increasingly global supply chain?

Successful ingredients

The new middle classes - or at least larger parts of the population in the volatile emerging markets having more disposable incomes - is leading to new food preferences and wanting to trade up, seeking new and interesting tastes, which results in a greater demand for dairy products, meats, fruit and vegetables. These new customers will be receptive to new tastes, but it remains important to understand their markets and traditions.

According to the UN, the world needs to increase food production by approx. 70 per cent in the next 40 years. This will contribute to raw material price volatility: Sharp rises and sudden falls in raw materials prices - particularly in energy and commodities used as ingredients in manufactured food have escalated. Although speculation is contributing to price volatility, the underlying trend is of cost increases. This price volatility will have a major impact on all aspects of our industry. The impact is both direct (more costly ingredients, packaging and transportation) and indirect (less consumer money to spend).

Successful businesses will prioritize consumer insight and the ability to act quickly, especially regarding issues such as sustainability, and prepare for flexibility and agility to react to global forces on their business model.

Volatile and changes affects

To respond to the rising costs of raw materials, we must make certain

changes affecting ingredients, packaging, and energy. Each category of raw material will offer different opportunities and challenges for the industry. With high ingredient prices, companies must prioritize to protect their contracts and seek vertical integration to guarantee supply. At the same time, they will seek alternative ingredients or develop innovations that are less dependent on specific commodities.

Companies must reduce the amount of packaging, or focus on reusable packaging (e.g. refillable packaging), and at the same time, incentive schemes will encourage more responsible packaging.

Energy is a major part of the products' cost structure, impacting the full cycle from harvesting and production to distribution, retailing and recycling. The opportunities for energy reduction (through more efficient assets or asset sharing) as well as alternative forms of energy will be plentiful. Already, Dairy Fruit has many projects going on in this area and more are expected as we continuously reduce our costs.

Thus, volatile markets include several meanings - whether it is an emerging and developing area such as Eastern Europe or the Middle East - and the parties involved fully understanding the needs and desires of their new contacts - or the volatility relating to the general supply and demand of raw materials which can be affected by many adverse changes. All these factors imply that we must be aware and ready to act. ■

Ready to act

Dairy Fruit manufacture preparations now being sold far beyond the EU, so we understand the demands of a volatile market. Our heritage and importantly our development team know and understand tastes, wherever our customers and suppliers come from. We are Northern Europe's leading supplier of flavored preparations to the dairy and food industry, delivering more than 700 different aseptic fruit and liquid spice products, both conventional and organic.

(Photo: Colourbox)

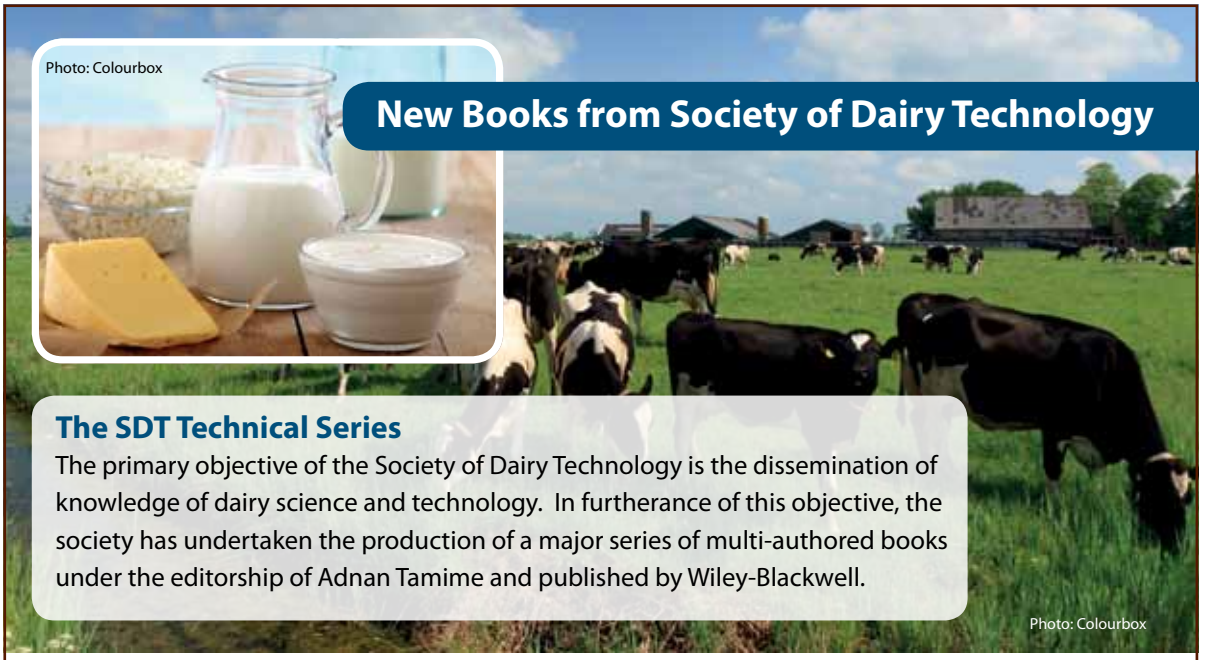


Photo: Colourbox

New Books from Society of Dairy Technology

The SDT Technical Series

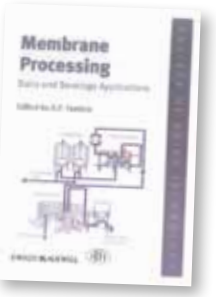
The primary objective of the Society of Dairy Technology is the dissemination of knowledge of dairy science and technology. In furtherance of this objective, the society has undertaken the production of a major series of multi-authored books under the editorship of Adnan Tamime and published by Wiley-Blackwell.

Photo: Colourbox

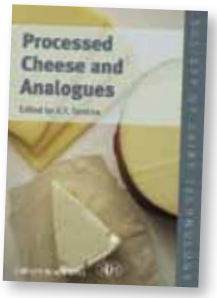
The very first titles

The first titles, *Probiotic Dairy Products* and *Fermented Milks,* were published in 2006. These were followed by *Brined Cheeses and Structure of Dairy Products.* The publication of the third edition of *Cleaning-in-Place* was an eagerly-awaited update on a key practice for both the dairy and the food industry as a whole, while the second edition of *Technology of Cheesemaking* has provided an excellent appreciation of current technology.

The most recent multi-authored book under the editorship of Adnan Tamime is: *Membrane Processing: Dairy and Beverage Applications* - also published by Wiley-Blackwell.



One of the most recent Wiley-Blackwell dairy technical books concerns: *Processed Cheese and Analogues,* edited by Adnan Tamime.



Popular titles

Shelf-stable products have been covered in *Dairy Powders and Concentrated Products,* while cream, butter and other dairy spreads are reviewed in *Dairy Fats and Concentrated Products.*

Heat treatment and packaging of liquid milk is a major part of milk utilisation, especially in the UK. These activities are reviewed in *Milk Processing and Quality Management.*

New excellent updates

The two most recent titles to have been published are *Processed Cheese and Analogues* and *Membrane Processing: Dairy and Beverage Applications;* the latter title providing an excellent update on what is a very young technology that offers potential for both energy savings compared to older technology and the creation of new products.

Where to buy the books?

All of these titles are available via the society's web site: www.sdt.org - direct from the publisher on: eu.wiley.com/WileyCDA (search dairy) or from booksellers, including Amazon UK.

Andrew Wilbey
Chairman, Publications Committee
Society of Dairy Technology

AAK

Healthier profile
Non trans
Low in saturates
Excellent taste and structure
Tailored melting properties
Improved nutritious value
Longer shelf life
Cost efficiency

Vegetable oils and fats from AAK
– your global solutions provider

www.aak.com

Specially constructed for AAK's pilot laboratories, the high pressure mixer produces light and aerated dairy and confectionery products.

AAK - Creating Value Together with Customers

By
Torben Friis Lange, Vice President AarhusKarlshamn AB & President Business Area Asia Europe Africa

Value-added vegetable oils are often a key ingredient in the manufacturing of dairy products with an appeal of health, and also because of functional aspects not possible to achieve with milk fat. For many of the world's leading food manufacturers, that means getting in touch with the vegetable oil specialists at AAK.

Through the past 140 years, AAK has developed and supplied vegetable oils for a broad spectrum of food and dairy applications, including cheese, dairy spreads and butter style products, cream, yoghurt and labneh type of fermented products, ice cream, milk powder, infant nutrition, confectionery, and bakery products. An early response to the health trend of the early 1990s enabled AAK to play a pioneering role in developing the first vegetable fats on the market to be free of trans-fatty acids.

Today, most products are trans-free and low in saturated fats, while others supply the nutritious content required for infant formulas. Alternatives to milk fat and cocoa butter are also an important part of the portfolio, offering a strong value proposition in both established and emerging markets.

Customer co-development

The wide product range is the result of targeted development work carried out in the company's laboratories. All new products are developed in close partnership with customers, drawing on oils and fats expertise and knowledge of market trends.

In addition to customers from the food industry, AAK works with companies to develop healthy skin care products for the cosmetics industry, environmentally-friendly lubricants for the technical industries and tailored vegetable proteins and fats for animal feed. These strong co-development partnerships provide the basis for lasting solutions that meet the needs, expectations and standards of today's requirements to perform faster and better.

Relations are strengthened further through a comprehensive technical service offering. In the company's well-equipped application and analytical laboratories, customers are always welcome to optimise and test new solutions together with AAK experts before introducing them to their own processing lines - facilitating a much faster and more successful start-up and a faster time-to-market for new products.

Customers benefit further from exclusive access to the AAK Academy. Offering advanced training in lipid technology, the academy provides application-specific courses and courses tailored to individual customer needs. With an improved understanding of how lipids interact with other ingredients and behave under varying conditions, customers are better equipped collaborating




For more than 140 years, AAK has developed and supplied vegetable oils for a broad spectrum of food and dairy applications such as cheese, dairy spreads and butter style products, cream, yoghurt and labneh, ice cream, milk powder, infant nutrition, confectionery and bakery products.

with AAK experts in identifying the best vegetable oil solution for their products and processes.

Global competitive edge

Innovative solutions, continued customer co-development, consistent quality and high service levels have consolidated AAK's position as the first choice for vegetable oil solutions across a wide global customer base. Fast responsiveness to the changing requirements of the food industry has become a company hallmark, responsible not only for enhancing customer relationships but also strengthening the company's competitive edge.

In 2011, AAK took another important stride towards maintaining and further developing its strong international position with the launch of AAK Acceleration. This programme is now driving the company towards its strategic objectives and overall vision: to be the first choice for value-added vegetable oil solutions.

High-quality deliveries

AAK delivers its solutions on time and around the world through multiple production plants and offices in key locations. Our sourcing operations, also in place at key locations, aim high in our sustainable efforts and create a visible difference where we operate. High quality, safety and sustainability are priorities in all we do!
Visit www.aak.com for more information. ■

Reliable Aseptic Sampling Bag

VitaLys I/S prefer taking sterile samples from the company's fermentation tanks with Keofitt's aseptic sampling bags. Although this is a more costly solution, VitaLys believes it is repaid many times, as the company avoids rejecting a batch based on unreliable results.

Laila Bleeg Smidt, Laboratory Technician, VitaLys I/S, removes a ferment sample from a Keofitt aseptic sampling bag.

By John Steenfeldt-Jensen, Journalist

Biotechnology manufacturing processes within e.g. food, beverages and pharmaceutical industries, often involve fermentation processes that must be checked regularly in order to prevent contamination by undesirable microorganisms. Thus, the sampling process must be performed under sterile conditions to ensure that the test sample is identical to the content of the fermentation tank, and that it has not been infected by unwanted microorganisms during the actual sampling procedure.

Patented manufacturing process

VitaLys I/S in Esbjerg manufacture VitaLys, a lysine product manufactured by means of fermentation using selected Coryne bacteria. Lysine is an essential amino acid used in e.g. pig and poultry feed. It ensures optimal feedstuff utilization, better growth rate and improved meat quality. The high-technology production of VitaLys is based on the company's own patented process and the latest expertise within biotechnology, fermentation and process technology. The production method is environmentally-friendly since it uses by-products from agriculture - and without waste-products.

VitaLys supplies both a liquid concentrate and a spray-dried powder product. The main customer is the Danish feedstuff-company DLG, joint owner of VitaLys I/S. The company also supplies other customers on the Northern European market, and the annual production is approx. 18,000 tons.

Specially developed sampling valve

The actual fermentation process last five days, and takes place in smaller tanks and subsequently in 440 m^3 stainless steel tanks. During these days, five samples are collected from the ferment. Sampling is conducted using a specially developed sampling valve from Keofitt A/S. The Keofitt Valve is designed with a vapor barrier that ensures all the valve's interior parts are sterilized both before and after sampling. The valves used by VitaLys are also fitted with a special sampling point for removing samples.

Laila Bleeg Smidt has developed a method designed to improve the sample detection limit for bacteria by factor 1,000. Here she adds a nutritional broth to the ferment using a needle inserted through the sampling membrane in the bag.

Keofitt's aseptic sampling bags are used for two of the five samples in a batch. During sampling, the bag-inlet is sterilized by steam before ferment is pulled into the bag. In order not to destroy sample bacteria, the ferment is drained off at the start - when the inlet is steam-hot - into an outlet chamber until the temperature is reduced.

Sampling bag repays several times

"Previously we used a sterile glass sampling container below the valve for all five samples. This carried the risk of unwanted bacteria from the surrounding air contaminating the sample and subsequently polluting the samples. By using Keofitt's aseptic sampling bags, we can ensure our sampling process is 100% reliable, so even though it's a more costly solution it is repaid many times. Previously, we would occasionally end up with indeterminate samples which led us to interrupt the fermentation process unnecessarily or to carry on regardless of problems. That resulted in production loss, and consequently in loss of earnings. We once had to

Anne-Mette Jakobsen, Process Engineer, VitaLys I/S and Susanne Søvsø, Sales Manager at Gustaf Fagerberg A/S, atop the fermentation tanks.

scrap an entire tank of 440 m³," explains Anne-Mette Jakobsen, Process Engineer at VitaLys I/S.

Improves detection limit

Apart from improving the quality of VitaLys' sampling process, the use of Keofitt's aseptic sampling bags further urged the company's Laboratory Technician, Laila Bleeg Smidt to develop a method that improves the detection limit for bacteria in the samples by factor 1,000.

"Single unwanted bacteria in the bag and, correspondingly, more unwanted bacteria in the tank can ruin an entire production," says Laila Bleeg Smidt. She continues: "There's no guarantee that you'll 'catch' that one unwanted bacterium in the 0.1 ml sample which is usually taken from the bag. Because of that, we have developed a method to detect these bacteria in the sampling bag itself."

Highly reliable results

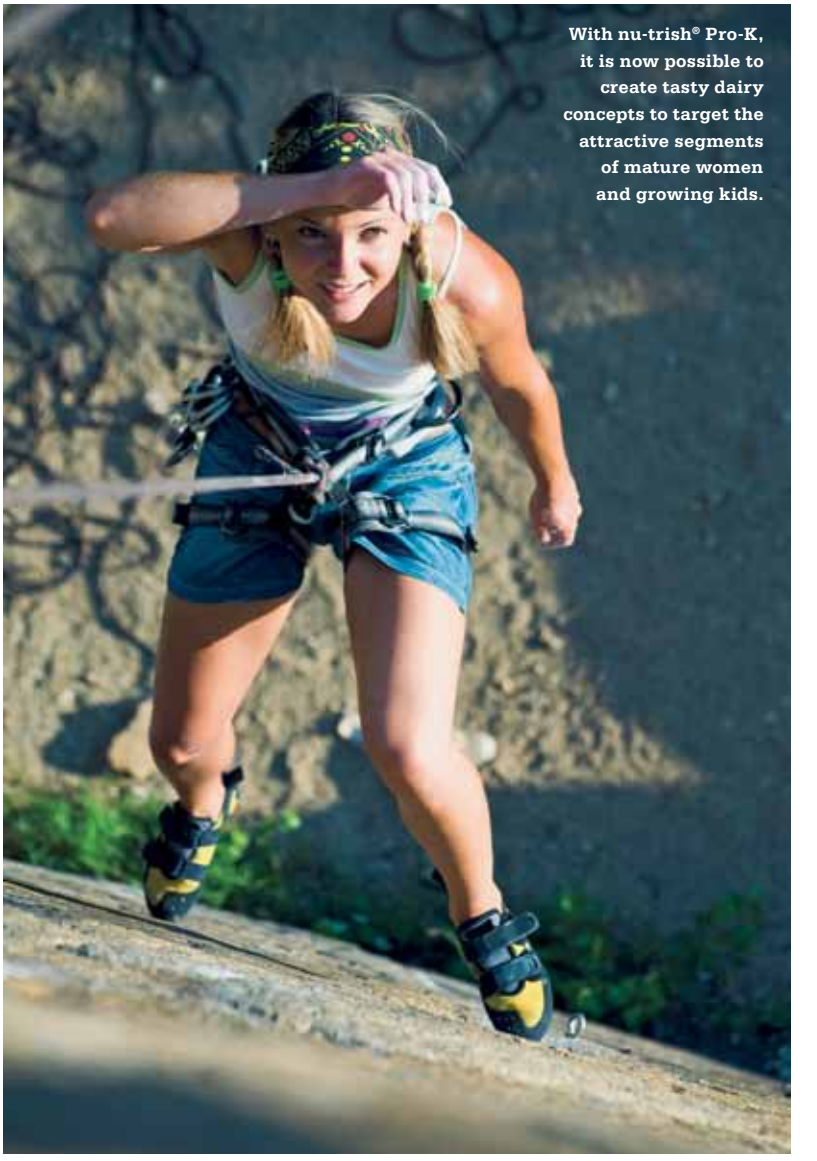
"Once the necessary samples have been extracted from the bag, a nutritional broth is added to the ferment using a needle inserted through the sampling membrane in the bag. One day later - after the bag has been stored in an incubator - that one bacterium will have multiplied to around 4,000 which mean that a 0.1 ml sample contains a minimum of two bacteria. Thus, we are highly confident of obtaining a correct result in the subsequent analysis of the sample," concludes Laila Bleeg Smidt.

Keofitt's sampling valves and aseptic sampling bags are distributed worldwide by local Keofitt distributors http://www.keofitt.dk/about/contact.html. The bags are available in six sizes ranging from 50 ml to 2,000 ml. ■

Key to Success in Dairy:

Differentiation with Health Benefits

By
Sarita Bairoliya, Global Marketing Manager, Probiotic Cultures, Chr. Hansen



With nu-trish® Pro-K, it is now possible to create tasty dairy concepts to target the attractive segments of mature women and growing kids.

Natural bone health opportunity

Consumers all over the world and not least in Scandinavia are looking to manage their health through their diet and lifestyle, and it is essential for dairy companies to continue to offer tasty products with differentiated health benefits. Research shows that not only do products with clear health benefits attract a loyal consumer following; it is also possible to gain a premium price for such products.

Dairy products enjoy a reputation amongst consumers as naturally healthy, and in particular, bone health is often associated with dairy due to the natural presence of calcium in milk, and in many cases, with added vitamin D. This duo of calcium and vitamin D is well known for building and maintaining strong bones.

Vitamin K2, the missing link in bone health

However that's not the whole story. Calcium is certainly needed, and the vitamin D ensures that we absorb the critical mineral from the milk. But, we also need to bind the calcium to the bones, and vitamin K2 is responsible for the very important task of incorporating calcium into the bone. In fact, vitamin K2 is often referred to as the 'missing link' in bone health'.

Vitamin K2 is found naturally in foodstuffs such as butter, egg yolks and the traditional Japanese food natto, etc., and as such, is not readily available or fits into the lifestyles of most consumers.

Now dairy producers can create tasty products with a natural solution for bone health - with nu-trish® Pro-K cultures for fermented dairy products. The nu-trish® Pro-K cultures contain a new proprietary probiotic strain of *L. lactis* which supports bone health through a natural high production of Vitamin K2.

Approved EU health claim

Vitamin K has been researched in over 70 clinical trials, showing benefits such as reducing bone loss in women and improving bone markers in children. And what's more, Vitamin K has an authorized health claim in the EU: 'Vitamin K contributes to the maintenance of normal bones'*.

With nu-trish® Pro-K, it is now possible to create tasty dairy concepts to target the attractive segments of mature women and growing kids.

Vitamin K: Approved health claim in EU

- Researched in over 70 clinical trials, showing benefits such as reducing bone loss in women and improving bone markers in children.
- Has an authorized health claim in the EU: "Vitamin K contributes to the maintenance of normal bones" (published in Commission Regulation (EU) 432/2012 of 16/05/2012).
- nu-trish® Pro-K is combined with fermentation cultures in "one pouch" solutions to create dairy products with great texture, flavor and high content of Vitamin K2.
- Pro-K will provide a minimum of 10 micrograms of Vitamin K2 per 100 ml of fermented dairy product - so as little as 150 ml serving provides a good source of Vitamin K.

All-in-one solution

Two new 'ready-to-go' product concepts are available: A delicious dairy drink and a scrumptious light quark to target the segments of active mature women and growing kids. Concept packages consist of consumer insights, concept description, recipes, and production information - everything you need to reduce the time to market for your new launch.

nu-trish® Pro-K is combined with fermentation cultures in 'one pouch' solutions to create dairy products with great texture, flavor and high content of Vitamin K2. When used at the recommended dosage, the cultures will provide a minimum of 10 micrograms of Vitamin K2 per 100 ml of fermented dairy product - i.e. as little as 150 ml serving provides a good source of Vitamin K.

We believe this new concept has potential to offer functional dairy brands a real point of differentiation while staying entirely true to the natural value proposition which consumers expect from dairy products! Moreover, we take great pride in bringing added value to the very important topic of bone health! ■

- - -

**Published in Commission Regulation (EU) 432/2012 of 16/05/2012*

Packaging Handling Solutions

Infant Formulas Booming

Jorgensen Engineering is a distinctive expert within packaging handling solutions, and the Group is partnering with international companies which produce foods for humans and pets, pharmaceuticals and infant formulas. Especially the latest of these four segments is currently booming, and the large players within baby foods now demand even tougher standards on e.g. traceability when they order sophisticated packaging handling systems at the Danish Jorgensen Engineering.

By Anna Marie Thøgersen, Editor

The most precious

- We see a steady growth of the middle classes in all emerging markets around the globe. As the families of course want the very best for their children, we experience a booming market for infant formulas and foods for toddlers. These consumers make increasing demands on the producers for high quality and safe foods for the precious next generation. - Thus, for the time being and during recent years we have been very busy projecting and building highly sophisticated packaging handling systems for the infant formula sector, stresses Jesper Johansen, Marketing Manager at Jorgensen Engineering.

Increased traceability

Each year Jorgensen Engineering launches at least one innovation to the benefit of the industry. Just to mention a few, the company was a pioneer introducing workable robotic systems 10 years ago, and during recent years, leak detectors, simulation programs and Track & Trace systems have been added. - We have developed these features either in cooperation with our customers or by merely listening to their wishes, as they strive to manufacture safe foods of highest possible quality, underlines Per Vedel Rasmussen, Sales Manager at Jorgensen Engineering.

Amongst Jorgensen's customers we find most of the global players within infant formulas, and they demand increased traceability on safe food products for children. Thus, projecting complete milk powder packaging lines include comprehensive numbers of features at Jorgensen Engineering. To mention just some connected to traceability, Per Vedel Rasmussen lists: Jet air and UV cleaning, vision/camera surveillance, vacuuming and gassing, X-ray and leak test-

Infant formulas are booming, and a couple of years ago Jorgensen constructed the first of a line of advanced robotic systems for placing portioning scoops in canned infant formulas.

The Jorgensen Group

- The Group was founded 80 years ago and includes Jorgensen Engineering and brüel in Denmark, Tripax Engineering in Australia, and four brüel subsidiaries in other European countries as well as several agents/agencies around the world.
- Jorgensen Engineering is headquartered at a state-of-the-art new 7,800 m² domicile in Odense.
- Production facility at the new headquarter is 6,000 m².
- The Group employs more than 200 highly skilled staffs, including more than 60 engineers.

ing, labeling and coding - all connected to SCADA-systems.

Single and complete systems

Jorgensen Engineering is the expert within packaging handling systems for all kinds of packaging materials such as pouches, alu-trays, snap pots, cans, cartons and cups for foods, pet foods, pharmaceuticals and infant formulas. - Our solutions range from projecting single machines to complete turnkey systems, and our customers are both major global Groups as well as minor local companies, says Per Vedel Rasmussen.

Whatever sizes of the customers, Jorgensen Engineering is an expert within: one, several or the full package of designing, projecting and building equipment for:

- Loading/unloading and conveying
- Robotic systems
- Milk powder and SCM handling
- Cleaning and sterilizing systems
- De-palletizing and palletizing
- Automation

Sales Manager Per Vedel Rasmussen (left) and Marketing Manager Jesper Johansen at the open balcony from where national as well as international customers can overlook the 6,000 m² production facilities at Jorgensen's new domicile in Odense, Denmark.

Further it is worth emphasizing that on the company's new premises Jorgensen has the facility to test-run all kinds of minor as well as full scale production plants. ■

The future choice ...

PERACETIC ACID

By
Jens Ole Jensen, Business Development Manager and Torben Jensen, Key Account Manager, Novadan

(Photo: Colourbox)

Complete product range in peracetic acid ... covering all your needs:

- Oxidan Extra PAA 5% is a broad-spectrum, acidic, environmentally friendly and fast-acting disinfectant. Well suited for fog disinfection equipment.
- Oxidan Special PAA 15% is a broad-spectrum disinfectant for use after a preceding cleaning in the food industry. Even at low concentrations and low temperatures this peracetic acid is active against bacteria, spores, viruses and mould fungus.
- Oxivit Aktiv Plus, reducing surface tension, is also a broad-spectrum disinfectant that is used in the food industry and farming for disinfection of rooms, inventory, tools and production equipment. Oxivit Aktiv Plus has good effect on bacteria, spores and vira.
- Disinfect MB PAA is used for disinfection of CIP-units. The product is conductively measurable and is used as cold disinfection after the CIP cleaning procedure. Disinfect MB is effective against bacteria, bacteria spores, yeast fungus and mould fungus.
- Des Foam PAA is a broad-spectrum surface foam disinfectant used within the food industry for disinfection of rooms, tools, furniture and equipment. Des Foam PAA kills fast and effectively bacteria and vira. The content of surfactants provides a good moistening of the surfaces to be disinfected.

Peracetic Acid

Several production companies within the food industry have become aware of the advantages of using disinfectants based on peracetic acid. Peracetic acid is a disinfectant which is effective against bacteria, virus, yeast and mould.

The advantages for the food producers using peracetic acid are obvious:

- An environmental green profile as the ingredients are disintegrated to water, oxygen and acetic salts - all substances which do not have a negative effect on the environment.
- Peracetic acid is used cold for CIP systems as well as surface disinfection which results in savings - time and money-wise.

Complete product range

Through time, Novadan has with great success changed the solutions from conventional disinfection to peracetic acid disinfection with the associated savings and environmental advantages which the customers appreciate. At the same time, there is a great effect on the bacteriological results and the production department can consequently use its resources optimally by focusing on production.

Novadan offers a complete product range in peracetic acid products from CIP products with or without conductivity, to a specially developed product with light foam for surface disinfection which in addition is very effective against yeast, fungi and listeria.

Conventional disinfection

Sodium hypochlorite has been and still is a very used disinfectant due to the price as well as a wide bacteriological effect. However, sodium hy-

Advantages by using peracetic acid are, to mention a few: Environmental friendly, cost-saving, broad-spectrum and effective.

pochlorite does have some disadvantages as regards the degradability in the recipient and aggressiveness towards different types of equipment.

Other types of disinfection methods are alcohol based, quaternary ammonium compounds (QAC) and heating/sterilization - all with more or less good properties and effects.

QAC are unwanted in many dairies because they can have a negative effect on the acidification process when used incorrectly, and also have a bad environmental profile.

Steam and hot water sterilization are effective if the right temperature is reached but implies large energy costs, and often the costs for repairs and maintenance are increased substantially because the material is effected by frequent heating and subsequent cooling. ■

Are you Ready for your Next Incident?

By Søren Bollerup Hansen, CEO and Owner, MyAdvizor A/S

What would happen if some of your batches suddenly were found to be contaminated?

This news had an immediate impact on a major global player recently. The Chinese government recalled numerous products, which most probably had no relationship with the contaminated milk powder. However, based on previous melamine contamination problems that killed six babies and thousands fell ill, the Chinese politicians had no other choice than to recall products produced by the specific producer. Shares immediately plunged 9% - and why? Just because of one dirty pipe!

Furthermore, this episode also affects other global suppliers, because their customers start calling and asking what they are doing to avoid the same contamination problem - and what happens if they do not give a convincing answer. Exactly the same as the contaminating party. The customers will cancel orders and place them elsewhere as they feel the public pressure to not only provide safe products but also to be able to document that the products are safe at all times. From a brand point of view, it is too late to identify the contaminated product once it is on the shelf. The damage has happened once you need to recall products!

We probably all acknowledge the threats that can occur through natural disasters such as earthquakes, hurricanes and flooding. Due to experience, we probably also acknowledge that the public utilities such as power-, gas- and water lines can fail for a shorter or longer period. We have also implemented measures to fight fires and contingency plans on what to do if one breaks out - not because we have all considered the possibility but because legislation requires us to do so.

By implementing a Business Continuity Plan (BCP) your business will increase its recovery capabilities dramatically and it will help save your business when incidents happen! (Photo: Colourbox).

My question to you is for how long can you survive a production halt? One day, one week, one month or maybe even half a year?

After answering this question, please answer the following question, how fast can you establish your own utilities (water, electricity, gas, sew-

age etc.) in case of a major natural disaster?

My guess is that most milk processing businesses cannot survive a production halt for more than maximum one month. If you think I am wrong, then I know that I am right!

Not me!

We all tend to be optimists and believe that these things will never happen to us. It will only happen to the "neighbors". However, even smaller catastrophes require planning to be able to act quickly and efficiently and thereby get up and running with minimum disruption to our businesses and our clients. Small incidents can turn into major disasters.

You might think that I am exaggerating, but I can give you several examples of well run businesses that almost had to close because they were at a halt for less than 1 week!

I am sure that you on a regular basis conduct fire drills and I am sure that you see the value in these drills. However, have you considered asking a third party to run a Business Continuity drill imposing an incident on your business? I am quite sure that you will find it very interesting and an extremely learning process.

Why Business Continuity Plan?

By implementing a Business Continuity Plan (BCP) your business will increase its recovery capabilities dramatically and it will help save your business when it happens – and I mean when. By having a BCP you will make better decisions based on earlier "experience" and the management team will most probably not be in a panic situation. This will further ensure an environment for making good decisions and for managing the businesses' stakeholders.

Preparedness is the key. It gives confidence. Having Business Continuity Management (BCM) in place demonstrates duty of care to your customers, suppliers and all those people who rely on your success.

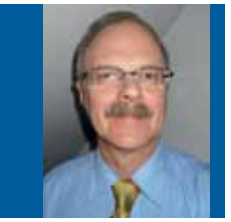
It is a visible way of meeting your customers' expectations and emphasizing due diligence to key stakeholders. It helps safeguard your company's reputation. BCM will ensure that you continue to operate and to meet legal, regulatory and contractual obligations.

By creating and maintaining a BCP your business will possess the resources and information needed to deal with almost any emergency.

Can you be ready for any incident? - No, but you can for sure be prepared for it! ■

FlexScreen™ and FlexConveyor™

- the "New Standard" in screening and conveying of milk powder and ingredients



By
Ole Bressendorf,
Vice President of
Sales, Alvibra A/S

Alvibra A/S is an active and innovative partner for the dairy industry worldwide. Our new patented and revolutionary vibration-force technology and modular design may change the industry not only for vibratory sifters but also for vibratory conveyors.

Milk powder - worldwide

These years, new milk powder plants are popping up all over the world. The dairy industry's new "cash cow" - milk powder - was used as a "balance product" just a few years ago. However, food scandals in China and increasing demands from Africa and the Middle East changed the milk powder industry worldwide.

The good question for an equipment supplier of course is: "How does he benefit from such a situation"? Alvibra's answer to the question is: *Innovation - to the benefit of the customer*.

Innovative and active

Alvibra A/S is an active partner in the worldwide expansion of milk powder plants and the company has successfully supplied many sifters and conveyors to plants all over the world.

Our strategy for the years to come include not only new inventions and patented technologies, but also cost effective designs and green technologies such as:

- Low noise vibration-force technology
- Higher size-efficiency ratio
- Energy savings and reduced carbon footprint.

Implementing this strategy not only benefits the external environment but also the dairy plants investing in such green technologies.

Alvibra A/S

Alvibra A/S, the Danish manufacturer of vibratory sifters, conveyors, feeders and other kind of equipment for the food industry is known for its innovative approach to development and design and the company holds several patents and patent applications.

Our line of vibratory machines and equipment supplies to the dairy industry worldwide and we are dedicated to further improving existing technologies and designs to the benefit and profitability of the dairy industry. Learn more about our product portfolio on www.alvibra.com.

However, patented technologies, a great design and energy efficiency do not make it alone. Consumer expectations and authority requirements are constantly raising the bar when it comes to food safety and hygiene. Alvibra A/S keep raising the bar as well and we don't cut corners but keep pushing ourselves, our suppliers and the industry to a higher level.

Our line of vibratory sifters, conveyors and feeders are not only installed in milk powder plants worldwide, but also in plants manufacturing food ingredients such as herbs and spices as

Alvibra's new FlexConveyor™ - Conveyor Type ATC-VD.

Alvibra's new FlexScreen™ line of vibratory sifters is compact, quiet and highly energy-saving - without compromising quality and efficiency.

well as protein etc., which has turned out to be of increasing importance to the dairy industry.

Designed to serve the dairy industry worldwide

After manufacturing conventional designed sifters for many years Alvibra A/S has launched its new line of sifters for the dairy industry. The FlexScreen™ line of vibratory sifters is the most compact, the most quiet and the most energy saving sifter on the market and all this with no compromise as to quality and efficiency.

The modular design and compact dimensions make it easy to install and to replace old and conventional designed sifters of all brands by an Alvibra FlexScreen™ sifter.

New standard within the industry

Easy cleaning is another advantage of the FlexScreen™ sifters as the revolutionary and ground breaking new QuickLock™ ball deck is designed to significantly cut down-time when running cleaning procedures. Since flexibility is a key word various CIP-solutions are available.

The mesh itself is what makes the screening of the milk powder and other products and all space outside the mesh is basically a "waste" of space. Alvibra's design-engineers reduced the overall size and the weight of the sifter by rethinking what is required to do the screening.

More news in 2013 - the FlexConveyor™

Alvibra A/S takes conveying of products to the next level. Our new line of modular designed FlexConveyor™ includes vibratory tube conveyors as well as open and closed rectangular conveyors up to a length of 30+ meters when using our VibraDrive™ vibration-force technology, which is about 3 times as long as for conveyors using conventional technologies. However, the length is not the only huge advantage of the FlexConveyor™. The slim and easy-to-fit-it dimensions and our low noise and energy saving technology also contribute to making the FlexConveyor™ the most flexible line of vibratory conveyors on the market.

Patented low-noise and energy saving technology

The FlexScreen™ as well as the FlexConveyor™ take advantage of Alvibra's patented VibraDrive™ vibration-force technology, which not only considerably reduces the noise compared to vibratory machinery based on conventional vibration motors, but it also saves 30% to 50 % on the energy costs. ■

"If You can Measure it - You can Control it"

Energy Costs!

By
Klaus Dam,
Managing Director,
Au2mate A/S

The intensified global competition and increased load of costs for energy and environmental load increases the demand for plant wide transparency of manufacturing related costs. The transparency is not limited to raw material costs, chemicals and packaging material etc. but includes the associated costs for utility consumption i.e. energy.

The demand to the automation systems are requirements to measure and allocate raw materials, energy and environmental loads in connection with the manufacturing of each product.

The Technical Solution

Success criteria for the technical is to design a plant wide automation framework based upon open systems that the dairy itself can maintain and enlarge, a future-proof investment, plus encapsulating the knowledge and experience in the dairy. Furthermore, it should be constructed in accordance with Standards / ISA S88 / ISA S95, and built for data collection and traceability through integration to the IT reporting system & ERP. Please refer to the below figure 1, plant wide automation framework.

Case: Arla Foods Cream Cheese

Case: Arla Foods Holstebro Cream Cheese, Denmark - plant upgrade project. Designed in accordance with ISA S88 / ISA S95, and built for data collection and traceability through integration to the IT reporting system & SAP. The project was initiated early 2009 and extends over 3 years. It is carried out as a step by step upgrade / development, in order that the commissioning is implemented with minimum interruptions in the production. The project is implemented in close cooperation with Holstebros technical personnel and operators.

Arla Foods Holstebro Cream Cheese has as an additional benefit of the upgrade since 2008 reduced its costs for electricity, steam and ice water by over 20%, plus water and chemicals by over 30%.

Dairy Automation and Industrial IT

Au2mate develops and supplies automation solutions for the dairy and process industry worldwide. These solutions are prepared through teamwork and close partnerships with our customers. The solutions cover the entire range from complete automation projects for entire factories, as well as for individual process sections to consultancy services and advice.

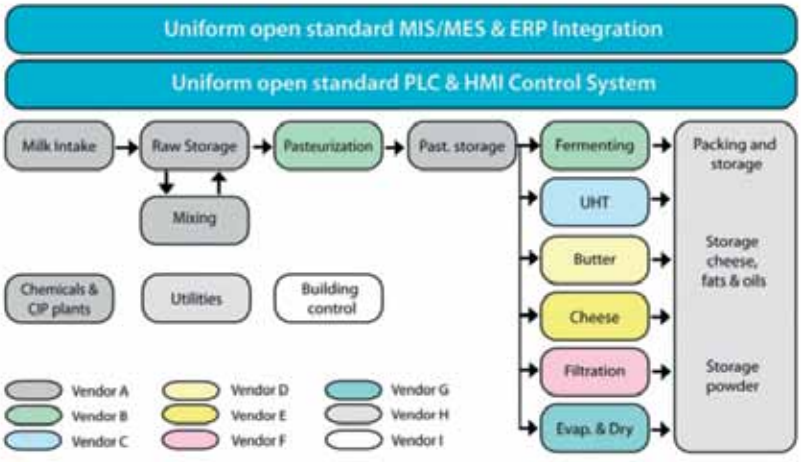


Figure 1: **Plant wide automation framework.**

Automation backbone, utility section

- **Based upon standard PLC's**
- **Based upon standard operator stations, distributed in the process area and in central control room's for appropriate information level across the plant**
- **Redundant servers**
- **On-site Engineering & Programming station**
- **ISA S88 structured software application**
- **Data collection for the ISA S95 structured database**
- **Full data transparency and integration with ERP system**

Our know-how covers every dairy process from raw material reception to packing.

We have many years of experience in the field of process automation. We have developed a structured work method, and with efficient knowledge-sharing tools, we can guarantee rapid delivery of top-quality solutions at competitive prices. ■

Au2mate Academy

Au2mate is in the process of setting up Au2mate Academy - a knowledge Centre for dairy automation. Au2mate Academy will offer training in automation disciplines for management, plant operators as well as technical staff. Au2mate Academy is located in a new building in Silkeborg DK and provides modern training facilities and a "hands on" live small scale process plant designed and built to industrial standard. Au2mate Academy is expected to open Q4 2013.

4 quick facts about Au2mate A/S

1: Founded in 2001 by Carsten G. Jensen and Klaus Dam, both with multiple years of experience in dairy automation.
2: Has 56 employees at offices in Silkeborg, Dubai and in the UK, and holds more than 500 man years of experience in dairy automation.
3: Project-oriented, has delivered more than 900 projects, PLC, SCADA, MIS / MES and ERP integration to dairies throughout the world including Nordic countries, Europe, Middle East and Africa, America and Asia.
4: Delivers solutions based on open standard platforms and internationally recognized methods for software development and project management.

Leading Edge Spray Drying Technology

Worldwide the dairy industry is expanding production capacity on a large scale to cater for the continuous increasing demand for dairy products. GEA Process Engineering has a long history serving the dairy industry. With the process technologies and components required to deliver complete dairy powder plants in-house - ranging from the milk reception through standardization, evaporation and spray drying to powder handling and packing - GEA Process Engineering is well positioned to take up the challenges as set forth by the industry.

By Carsten Juhl Jessen, Deputy Division Manager, GEA Process Engineering A/S, Food & Dairy Division

Efficiency and world-scale plants

The growing milk volumes, consolidation in the dairy industry and the quest for operational advantages continue to drive the demand for larger and more efficient plants. There are significant economies of scale and the ability to process high quality products at low operational expenses clearly stimulates the development. In most cases savings in operational expenses can be as much as 10% comparing one very large plant with two of half the size. With savings on buildings, better utilization of up- and downstream equipment, plant maintenance, etc. included, savings are even more. Capitalized over a 10-year period, this can lead to multi-million Euro savings. Today a typical new dairy powder plant has a capacity to produce 7 -15 t/h. milk or formulated nutritionals powder, but they come even larger. In New Zealand, Fonterra's new Darfield D2 plant has the capacity to produce 30 t/h high-quality milk powder making it the world's largest of its kind.

A range of measures form basis for the savings. Efficiency is obtained by thoroughly optimizing all elements in the complete production line - from milk reception to powder packing - according to the spray dryer output to utilize it at its best and minimize downtime. Since different process units have different cleaning requirements, the right combination increases uptime. A GEA Niro spray dryer can be in continuous operation for several weeks - up to 4 weeks have been documented - whereas the evaporation and dryer feed systems require cleaning daily to prevent biological contamination. By adding additional evaporation and feed systems to the plant, allows the spray dryer to continue in full production 24/7 while cleaning takes place. It provides an additional 3-4 hours uptime every day, improving the overall plant output by 15-20%.

Another key area in focus for increasing the overall plant efficiency and bringing down operational expenses is to minimize total product loss throughout the plant. Here GEA Process Engineering is at the forefront with innovative solutions for maximizing product recovery, minimizing emissions and ensuring efficient cleaning.

Energy savings

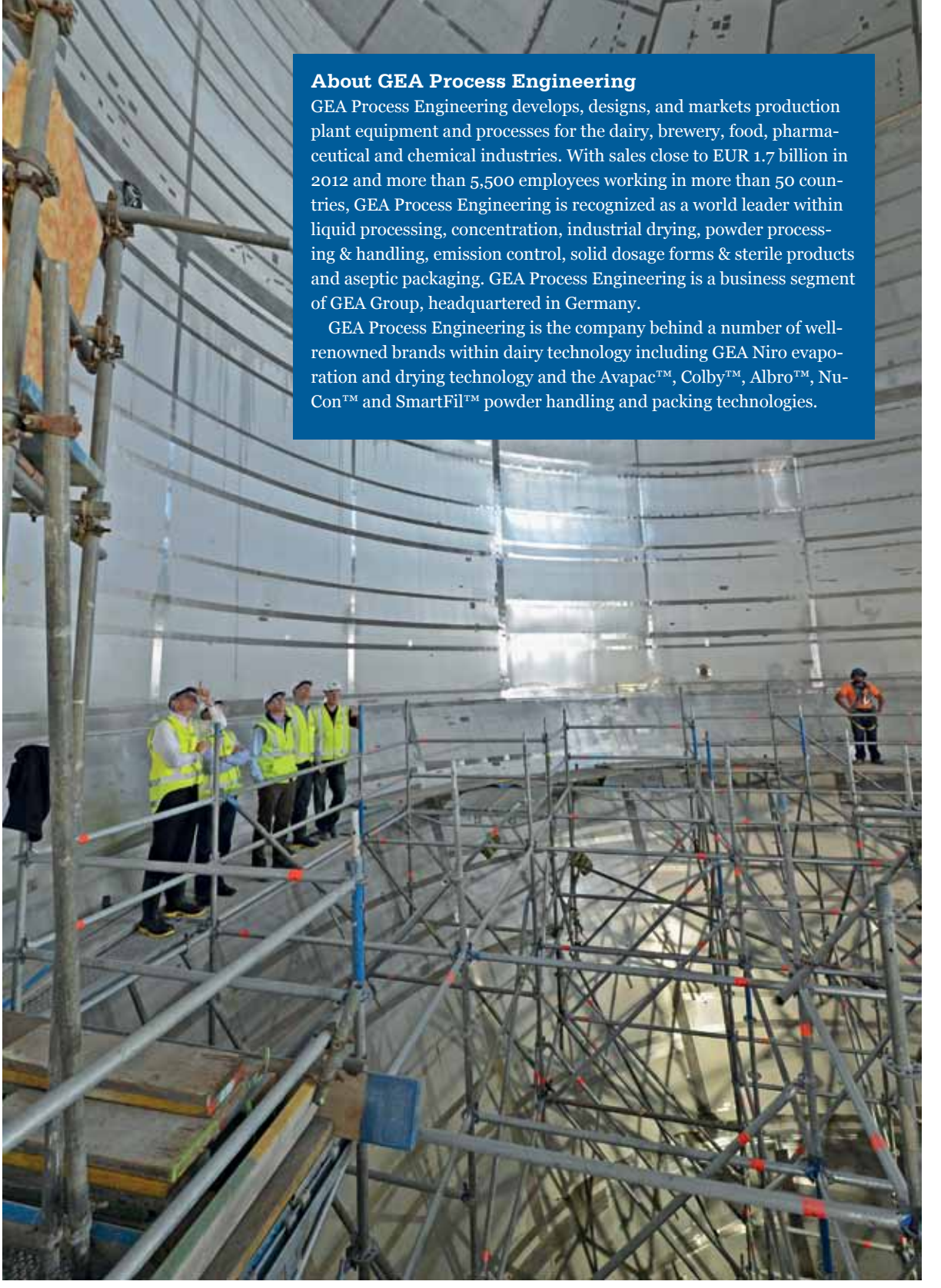
Energy costs are a substantial part of the operating expenses for most milk processors and therefore low energy consumption is an important prerequisite for being competitive in the market. A GEA Niro evaporation and spray drying plant fully equipped with heat recovery systems can save as much as 20% energy for the same production. Efficient energy recovery systems as well as an energy-optimized design can drive down the energy consumption significantly.

Product quality and food safety

Product quality and food safety remain focal points for the dairy industry. Industry standards and requirements continue to develop, and additional food safety measures will increase in demand. This makes the link backwards to process suppliers even more important as it imposes high demands on their co-development skills, ability to innovate (processes and components) and to meet standards like 3A and EHEDG, and provide plants and components of improved and documented hygienic designs.

Staying ahead in Dairy Technology

The fact that GEA Process Engineering is a leading company that continuously works with most of the dairy industry worldwide, positions the company uniquely to develop and influence best practises, bring knowl-



About GEA Process Engineering

GEA Process Engineering develops, designs, and markets production plant equipment and processes for the dairy, brewery, food, pharmaceutical and chemical industries. With sales close to EUR 1.7 billion in 2012 and more than 5,500 employees working in more than 50 countries, GEA Process Engineering is recognized as a world leader within liquid processing, concentration, industrial drying, powder processing & handling, emission control, solid dosage forms & sterile products and aseptic packaging. GEA Process Engineering is a business segment of GEA Group, headquartered in Germany.

GEA Process Engineering is the company behind a number of well-renowned brands within dairy technology including GEA Niro evaporation and drying technology and the Avapac™, Colby™, Albro™, Nu-Con™ and SmartFil™ powder handling and packing technologies.

edge and experience from a large portfolio of projects in different industries, learn from it and apply it. At the same time, having all the unit operations for a complete powder plant in-house, allows GEA Process Engineering to take a holistic approach of the complete plant developing the optimum solution in close cooperation with each customer. ■

Inside the drying chamber at Fonterra's Darfield D2 facility in New Zealand during the construction. The GEA Niro spray drying plant has a capacity to produce 30 tons of milk powder per hour equivalent to processing more than 4.4 million litre of milk per day.

High-quality used Dairy Equipment

Surviving in Volatile Markets!

By
Lars Christensen, CEO, Mechanical Engineer, AC Dairy Machines

These years, minor as well as larger European dairies are installing more efficient dairy equipment in order to succeed in the highly competitive volatile markets. But it is not always necessary to invest in brand new machines. Our company offers high quality, used dairy equipment, mainly from Scandinavian dairies. After purchasing, the trained staffs at AC Dairy Machines examine and clean the dairy equipment before reselling.

High-quality used Dairy Equipment

AC Dairy Machines is an expert within purchasing high-quality used dairy equipment from primarily Scandinavian dairies. Once cleaned, we re-sell the facilities to small as well as large-scale dairies and other food producers throughout Europe and the rest of the world.

One of our recent assignments was dismantling one of Norwegian based TINE's butter factories. After examination and cleaning we have in co-operation with another Danish company, Kekmia shipped off one of the two continuous butter making machine to the food giant Watts in Chile. Other parts of the TINE equipment are via intermediary installed at butter factories in Iceland and the US. And, very recently we sold a complete cheese plant to another customer in Chile.

Our core competences

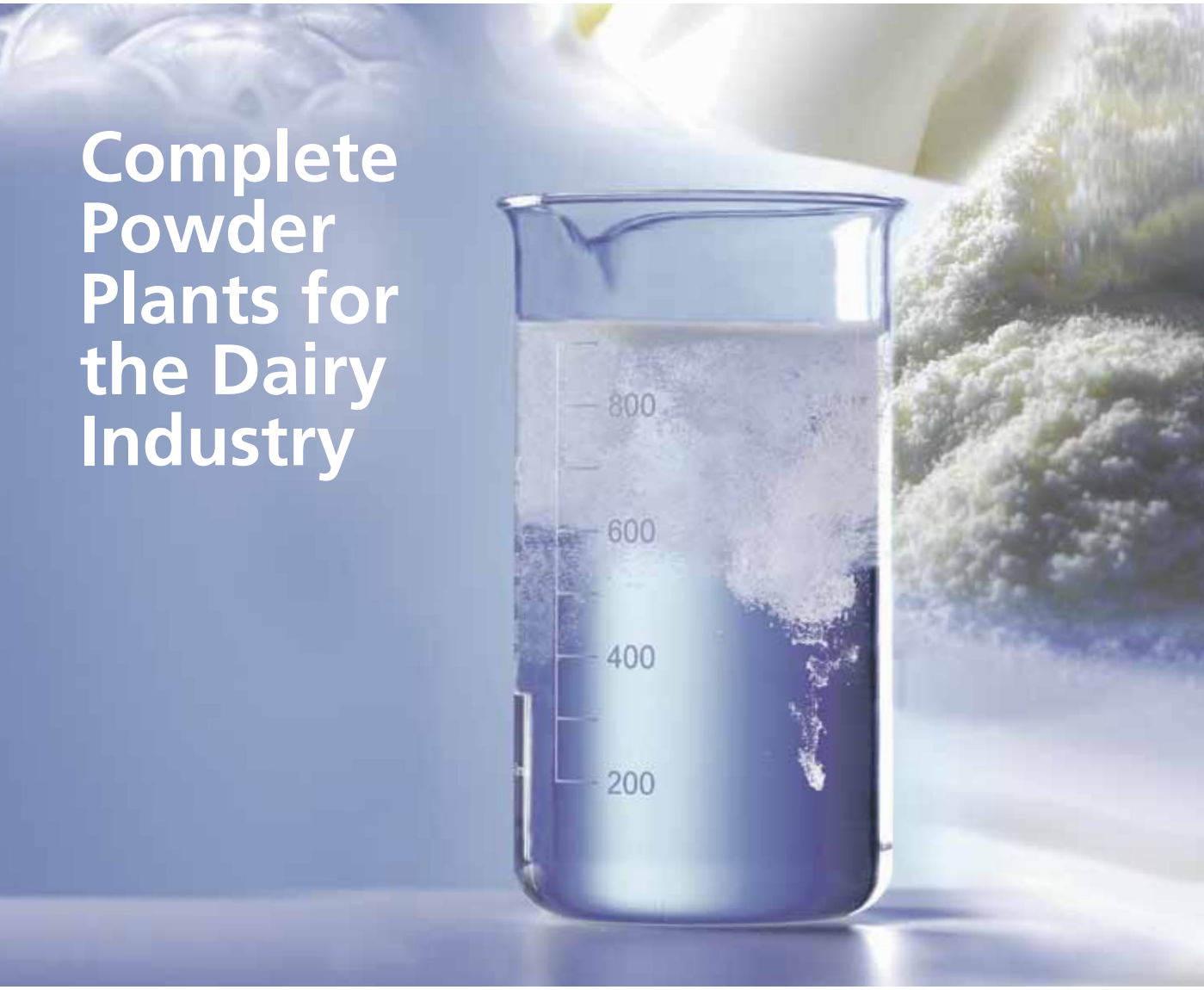
AC Dairy Machines' main competences within the European dairy sector are primarily:

- *Buying and selling:* Used process equipment in the dairy and food industry worldwide and our expertise is importing and exporting of these machines and tanks. We are always interested in buying equipment - from stand-alone machines to complete plants.
- *Commission sales:* With contacts throughout the dairy world, we offer commission sales of individual machines and complete processing plants.
- *Disassembly:* Until now, we have dismantled more than 100 dairies and other processing plants in Europe. We offer the required work - performed by our highly skilled experts and our own crane trucks, tools and machinery.
- *Our goal:* Quality work and satisfied customers - who choose us time and again.

A strong business

AC Dairy Machines is a strong family business. For more than 30 years, we have gained expertise within trading used equipment for the dairy and food industries. The equipment includes entire production facilities as well as various stainless steel tanks, milk trucks, cooling tanks, etc. Further, we offer rentals of various tank solutions and in numerous sizes, for shorter or longer periods of time. ■

Complete Powder Plants for the Dairy Industry



GEA Process Engineering unites deep-rooted insight in food and dairy processing with technological edge to supply complete state-of-the-art process lines. A GEA Niro powder plant fulfills the strictest demands for food safety, product quality, plant efficiency and sustainable production.

That is how we have become the leading supplier of process technology to the dairy industry worldwide.

GEA Process Engineering A/S

Gladsaxevej 305, DK-2860 Soeborg, Denmark
Tel: +45 39 54 54 54, Fax: +45 39 54 58 00
gea-niro.food@gea.com, www.gea.com

Reduced Water Consumption up to 70%

Reduce your water consumption for tank cleaning by up to 70%

By
Claus Brandt,
Global Portfolio Manager, Tank Equipment,
Alfa Laval Tank Equipment A/S

The saying "Less is more" rings true for efficient tank cleaning. Using less water and less energy can result in more available production time. This is good news for dairy producers around the globe dealing with tighter regulations for energy-efficient production. Alfa Laval has devoted substantial R&D resources to energy efficiency, offering a wide range of tank cleaning solutions to help dairy producers meet tougher requirements while optimizing the cost per litre of finished product.

3 steps tank cleaning technology

Here are three steps to help you get more out of your tank cleaning technology.

Step 1: Modernize your tank cleaning technology

Most tanks in the dairy industry today are cleaned using a simple static spray ball (Image 1), which uses the flow of media and time as primary cleaning parameters. But switching to a rotary jet head (Image 2) - especially in tanks that process viscous products such as cream or yoghurt - can save time and money. Cleaning time can be reduced on average by more than 30% and water consumption by up to 70%. All told, cleaning costs can be cut by 60% (Table 1).

Modernizing your tank cleaning equipment minimizes Cleaning-In-Place (CIP) time, costs and staffing requirements. Government subsidies that encourage the use of more resource-efficient technologies may be available to help finance plant modernization. Modernization also maximizes productivity and optimizes manufacturing costs, which can contribute to the bottom line or be reinvested in further modernization, making it a self-sustaining program that optimizes operations.

Step 2: Optimize production costs and safeguard quality and reliability

Unlike a static spray ball, a rotary jet head moves in three-dimensional patterns and uses impingement as the primary cleaning parameter. To ensure reliable and effective cleaning performance, an Alfa Laval Rotacheck+ sensor (Image 3) can be used to monitor this three-dimensional rotation by measuring the impact force from the jet and the time in between impacts.

By monitoring the movement of the jet head, the Alfa Laval Rotacheck+ sensor ensures that the jets hit the tank wall with the right amount of applied force or impact and within the acceptable interval of time (Figure 1). Using patented Alfa Laval teach-in technology, the sensor automatically determines the acceptable limits for these criteria during the initial cleaning run using the installed tank cleaning machine. In contrast, when the rotary jet head is not operating properly, the Alfa Laval Rotacheck+ recognizes that the impact, or interval of time, or both, do not fall within the acceptable limits. It then immediately alerts the operator to remedy the situation (Figure 2).

About Alfa Laval

Alfa Laval is a leading global provider of specialized products and engineered solutions that help customers' heat, cool, separate and transport products such as oil, water, chemicals, beverages, foodstuffs, starch and pharmaceuticals.

Alfa Laval's worldwide organization of 16,400 employees works closely with customers in 100 countries. Alfa Laval is listed on the Nasdaq OMX and posted sales of approximately 3.5 BEUR in 2012.

	Water consumption	Average time for CIP cycle	Average cost per CIP cycle
Static spray ball*	11 m³/CIP	33 minutes	7 €
Rotary jet head*	3.5 m³/CIP	23 minutes	3 €
Total savings	**7.5 m³/CIP**	**10 minutes**	**4 €**

Table 1: Comparison of running costs. ***Based on the use of Ala Laval LKRK Static Spay Ball and the Alfa Laval TJ20G Rotary Jet Head (4x4,6) and return on investment calculated based on the use of a 50 m³ cream tank.***

Image 1: Static spray balls use the low impact and high flow of cleaning media combined with the force of gravity to clean the tank. (Image: Alfa Laval LKRK Static Spray Balls).

Image 2: Rotary jet heads use the high impact and low flow of cleaning media to clean the tank. (Image: Alfa Laval TJ20G Rotary Jet Head).

Image 3: Alfa Laval Rotacheck+ validates the Cleaning-in-Place (CIP) process of virtually any rotary jet head machine.

Monitoring tank cleaning performance with an intelligent Alfa Laval Rotacheck+ sensor (Image 3) enables reproducible results for Cleaning-in-Place (CIP). Connecting the digital outputs from the Alfa Laval Rotacheck+ sensor to the process control system makes it possible to automate the CIP process completely. No manual interference, such as conducting a visual inspection after completion of each cleaning cycle, is required.

Step 3: Be prepared for increasingly volatile and competitive markets

Dairy producers who continually work on making their businesses more efficient stand to gain competitive advantage. Introducing rotary jet head technology and an intelligent sensor to monitor cleaning performance helps minimize CIP costs and maximize production time. With a cost-effective, fully automated cleaning process readily available, dairy producers can be assured that CIP operations are clean and lean. In an increasingly competitive business environment, tank cleaning modernization proves to be less costly way to deliver more quality product to market.

For more information, contact your local Alfa Laval representative or visit www.alfalaval.com. ■

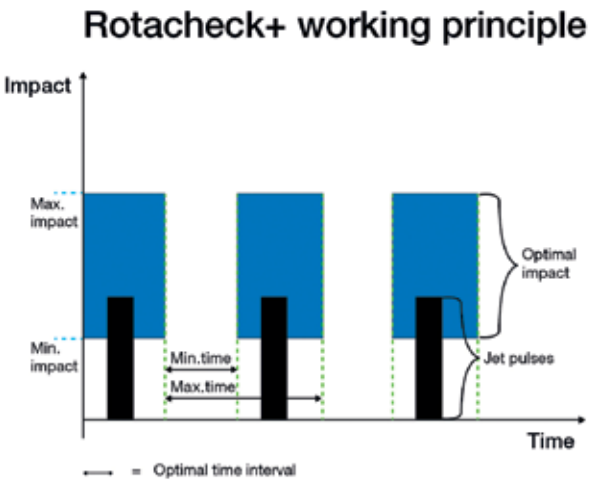


Figure 1: Rotacheck+ working priciple. Alfa Laval Rotacheck+ measurements indicate that the jet impact pulse falls within the optimal range and hit the tank wall within the optimal time intervals.

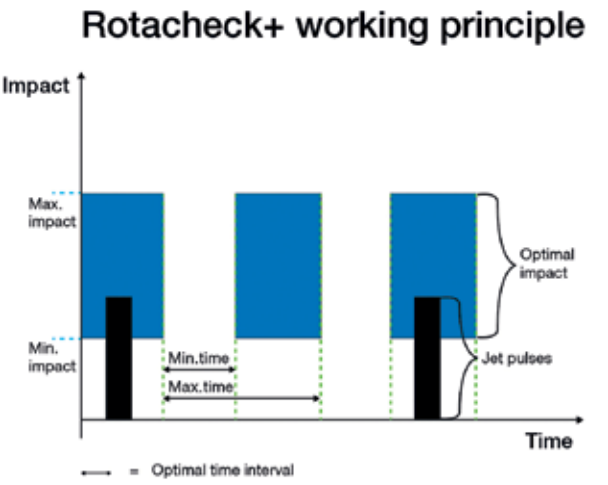
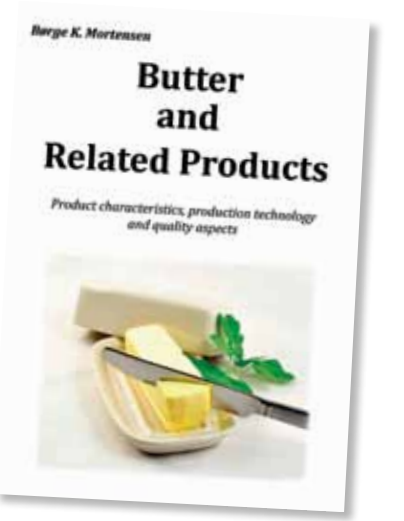


Figure 2: Rotacheck+ working principle. Here the Alfa Laval Rotacheck+ shows that the frequency of the jet impact pulse falls outside the acceptable maximum time interval, alerting the operator that attention is required.

Book Release

"Butter and Related Products"



Børge K. Mortensen: "Butter and Related Products - Product characteristics, production technology and quality aspects". Published in 2012 by Dairy Books, Mælkeritidende, Odense, Denmark (info@dairybooks.dk) (ISBN 978-87-995290-0-1).

By Roger K. Abrahamsen, Professor in Dairy Science and Technology, Norwegian University of Life Sciences

Finally a butter book

It is highly appreciated that one of the world's leading dairy scientists and technologists, Børge K. Mortensen, Denmark, has taken the challenge to write a textbook on butter and related products. With his practical experience in butter production as well as outstanding scientific knowledge about the subject, he is probably the most competent professional to present the interesting story and information about butter.

The book may be considered a necessity for students attending dairy technology courses at various levels of food science and technology education worldwide. Also, practical butter makers and dairy managers will benefit greatly from reading the book.

Eight main chapters

Most aspects of butter technology are covered in eight main chapters over 144 pages. A very useful introduction with interesting historical facts and statements is an appetizer for the reader. Also, the second main chapter with its many references to international regulations is very useful.

The various product characteristics are described in Chapter three - easily to read in spite of the fact that some aspects, e.g. product microstructure, are scientifically complicated. Cream separation as a crucial step in the production of butter, and heat treatment and temperature treatment of the cream in order to obtain a required consistency of the butter are treated in Chapter four. For practical butter makers it is of particular importance to refresh their knowledge about the use of various temperature programs for treatment of cream with different iodine values to optimize the spreadability of the butter at refrigerated temperatures. Information of how to adjust the temperature treatment of the cream when churning of sweet cream, with the alternative culturing methods often used today, should be of particular interest for practical butter making.

Chapter five may be regarded as the main chapter of this book, covering almost all aspects of butter technology, both traditional and continuous butter manufacture. This chapter presents a very good overview of factors influencing butter-making efficiency. A summary of factors that can influence the moisture content in butter is also very helpful for both students and butter makers.

Chapter six, on packaging, gives a good description of the subject. So-called butter-related products are dealt with in chapter seven. Various technologies used for the manufacture of dairy fat spreads, blends and blended spreads are briefly described both for high-fat and low-fat products. Short presentations of specialities as whipped butter, flavoured butter and confectionary butter makes the story almost complete. A surprisingly detailed description of the manufacturing and application of anhydrous milk fat turns out to be very useful reading.

Chapter eight about "Quality aspects" gives an important summary of factors influencing the different quality characteristics of the various products. Sections presenting useful points concerning lipolysis and oxidation in the products should be read with interest.

Highly appreciated

The book is well written and illustrated with relevant photographs and figures. The author also presents a praiseworthy number of relevant references and a very useful subject index.

Mortensen has written a very reliable and useful book about butter and related products, which will be highly appreciated by both dairy professionals and dairy students.

(The book review is slightly edited and abridged). ■

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Press release - LOGSTOR

THE ENERGY-EFFICIENT WAY TO "KEEP COOL"!

Pre-Insulated Pipes

Energy savings

The benefits of pre-insulated pipes have been applied widely within the refrigeration business and in the food industry - both in Denmark and in other parts of the world.

A pre-insulated pipe system is supplied from the factory with the exact amount of insulation required for each installation, as well as the related fittings and joints - making it simple to install. Once the pipe is installed correctly, it is 100% waterproof, impact resistant, easy to clean and requires hardly any maintenance.

That's why energy losses - and therefore your energy bills - can be reduced by as much as 40% rated against comparable piping systems fitted with traditional insulation. And this, of course, has a positive effect on operating costs as well as CO_2 emissions.

Environmental safety is essential

Companies that put the environment high on the agenda, and therefore do not permit their plants to cause pollution, are increasingly on the lookout for environmentally sound solutions.

LOGSTOR can do much more than help "keep the cold" inside a refrigeration system in the most energy-efficient way. In projects in Australia and Norway, for example, the LOGSTOR SafePipe® system provides safe, reliable transport of fuels - even over long distances - for a wide range of production equipment, construction machinery, aircraft, etc. with no risk of adversely impacting nature and the surroundings in general.

The HDPE outer casing used in the SafePipe® system serves as protection against any ingress of water, but also as a very important protection against unwanted substances leaking out into the surrounding environment.

The space between the service pipe and the outer casing is filled with insulating material into which an alarm sensor cable is cast during manufacture. If there is a leak from the pipe, it will be detected and localised immediately, and the fault will be reported while any leakage is kept encapsulated within the casing until the fault can be dealt with.

This means it is possible to establish out-of-sight piping systems for transporting high-risk fluids through areas in which there is unique flora and fauna that must be protected at all costs. Such projects require automatic, continuous monitoring and immediate alerts should any leaks occur.

With SafePipe®, any leakage from the pipe is immediately detected and the fault is reported. Anything leaking out remains within the casing until the fault can be corrected.

SafePipe® is designed as a conventional pre-insulated pipe, with a protective outer casing, foam insulation and a service pipe. An alarm cable is cast into the insulation.

More information

Visit www.logstor.com or call us on +45 9966 1000 for more information about the many different LOGSTOR solutions featuring pre-insulated piping technology. ■

SOUNDER THAN EVER

Our latest development – the new Tetra Centri AirTight Eco separator – takes sound performance to a new level. Offering reduced energy consumption in your overall separation system by up to 35%, a unique new feature enables you to save even more money, while also saving the environment.

Tetra Centri AirTight separators are already known for providing excellent product quality, superior separation efficiency and unmatched production flexibility.

The new Tetra Centri AirTight Eco separator also provides embedded separator controls that assure optimal performance. And a new direct drive that boosts efficiency even further, while lowering your costs.

There's more. It's designed for simplicity of installation, start-up, operation, cleaning and maintenance. Oh yes, it cuts noise levels too.

You're welcome to visit us at www.tetrapak.com – or get in touch directly: info.processing@tetrapak.com

PROTECTS WHAT'S GOOD™

Can you keep cool when things heat up?

– we can!

The best possible insulation is crucial for avoiding energy losses in all kinds of refrigeration systems and production set-ups. And optimising the insulation means focusing on how well it keeps in the heat or cold, as well as how robust it is.

We are constantly improving LOGSTOR pre-insulated pipe systems to help you roll back energy losses to the bare minimum. Both the environment and your finances will benefit.

- LOGSTOR pipe systems are pre-insulated from the factory with PUR foam, resulting in energy losses 40+% less than with comparable systems using traditional insulation.
- LOGSTOR pre-insulated piping systems are tough and maintenance-free. The HDPE outer casing protects the insulation from moisture, and the casing and insulation together are so mechanically strong that the pipes are extremely resistant to all kinds of impacts.
- A comprehensive jointing system makes it easy to install these pre-insulated pipes quickly and cost-effectively, and with joints that are 100% leak-free.

Contact us soon for a profit-focused talk about energy efficiency.

distributing energy efficiency

LOGSTOR A/S
Danmarksvej 11 · DK-9670 Løgstør
Tel. +45 9966 1000 · Fax +45 9966 1548
logstor@logstor.com · **www.logstor.com**

LOGSTOR