

TALKINGPOINT

THE ARLA FOODS INGREDIENTS NEWSLETTER · ISSUE 26 · MARCH 2009



Closer to Nature™



Brazilian teen nutrition
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Pipelines to innovation

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**Closer to Nature:
A Natural Evolution**

Our pioneering journey on the milk-based ingredient market has brought us a long way since the days when whey was merely seen as a by-product of cheese production. Today whey is universally recognised as a high-value source of nutritional and functional proteins.

For us at Arla Foods Ingredients, the name of our new strategy – Closer to Nature: Natural Evolution – could hardly be more fitting. The strategy emphasises our commitment to continuing the journey towards more innovative solutions that draw on nature’s most complete source of goodness.

But in-house R&D is not the only necessity for successful innovation. Cooperation is also indispensable. In this issue of Talking Point, we showcase two recent customer projects that illustrate the point – the three-way cooperation behind the launch of a new premium infant formula in China, and the collaborative development of a nutritious protein bar for teenagers in Brazil. In both cases, the final product is the result of combined expertise.

As consumer interest in healthier, more natural foods continues to grow, so, too, does the need for research into milk’s nutritional properties. Our cooperation with Aarhus University in Denmark and other research institutions is our direct ticket to the latest findings. We use these frontline opportunities to develop the next generation of milk-based ingredients. That’s Natural Evolution at work.

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Good health at one chew

The Susteen bar breaks new ground within Brazilian teen nutrition

Brazilian teenagers can today tuck into a delicious and highly nutritious protein bar designed specifically for them by Advanced Products in collaboration with Arla Foods Ingredients.

Called Susteen, the bar is the first of its kind to target Brazil’s many young consumers – a fact highlighted by Advanced Products, one of Brazil’s leading manufacturers of nutritional food products, in its launch campaign.

“All the best-selling nutrition formulas targeted at teenagers in Brazil are in powder form,” says Antonio Henrique Pinto Torres Duarte, managing director at Advanced Products. “We wanted to develop a snack that would make it easier for teenagers to consume nutritional products.

“We believe there is nothing like it in the market. That is why we have positioned it as something new – an innovative, very convenient and tasty way to be healthy.”

An inspiring bite

Inspiration for the Susteen bar came from Arla Foods Ingredients’ milk bites concept. Andréa Moura, account manager for Arla Foods Ingredients in Brazil, presented the bite-size pieces of calcium-enriched protein bar to Advanced Products at a meeting.

“They loved the moist, chewy texture,” Andréa Moura says. “After the meeting, we started to discuss a recipe for a new bar.”

Arla Foods Ingredients’ technical specialists worked closely with Advanced Products’ development team to develop the product and identify the best ingredients for top teen nutrition. One of the key components, the NUTRILAC® whey protein and calcium product that provides much of the nutritional content and the chewy texture, is produced by Arla Foods Ingredients’ joint venture in Argentina.

“The support of the Arla production team in Argentina and of Andréa Moura in Brazil facilitated the development of the product and eased deliveries of NUTRILAC® to our plant in Rio,” comments Antonio Henrique.

Launched in August, the Susteen bar is sold throughout Brazil in drugstores and health food stores. Advanced Products expects to introduce additional flavour variants in the future – all with the support of Arla Foods Ingredients.



Full-range nutrition

Advanced Products produces a comprehensive range of nutritional protein bars, energy drinks and gels, fibre cookies, capsules and powders. Head office is located in Rio de Janeiro in Brazil. Just over 110km from the city, Advanced Products’ large manufacturing plant is based on skilled staff and the latest production technology. Arla Foods Ingredients has worked with the company since 1985.



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Mild permeate in free flow

Flavour-enhanced VARIOLAC® takes cost optimisation beyond the limits

New improved whey permeate from Arla Foods Ingredients tastes better, dissolves faster and flows more easily. Free of the dosage limitations associated with traditional permeate, this cost-saving source of dry milk solids is a great opportunity for food manufacturers to optimise their recipes.

The new range is called VARIOLAC® 960 – the number a reference to the 96% lactose content, which is significantly higher than that of standard permeate. It is this that contributes to the mild, appealing flavour, one of the main advantages over competitor products.

Higher dosages

“Many permeate products have a strong, mineral-like taste that limits their use in food applications,” says Søren Nørgaard, technical manager.

“VARIOLAC® 960 has a sweet dairy flavour profile, so it can be used at much higher dosages and easily replace other more expensive filler ingredients, such as pure lactose, whey powder, maltodextrin and dextrose.”

Processing efficiency

Another plus is the low hygroscopicity. VARIOLAC® 960 resists absorbing moisture from the air, retaining its free-flowing powder qualities in storage for considerably longer than standard permeate. On food processing lines, manufacturers benefit further from efficient product change-overs as remnants of the improved permeate do not accumulate inside the machinery. Higher production capacity can be directly linked to the reduced need for cleaning.

“The hygroscopicity is on a level with that of lactose and dextrose, which are regarded as the “golden” standard, and significantly better than that of whey and standard permeate powder,” Søren Nørgaard says.

Flexible application

Arla Foods Ingredients’ powder expertise has been used to ensure the new permeate is rapidly soluble in water – a property that makes it particularly well suited to instant products, such as soups, coffee and protein drinks.

But the application opportunities do not end there. In bakery products, snack seasonings, processed cheese and meats, yogurt and dairy beverages, VARIOLAC® 960 offers more than just the chance to reduce formulation costs. Quality and processing benefits are also clear gains and, with them, a strong brand image on the market and streamlined operations in production.

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Klaus Kristiansen

Natural focus on price-right products

New business unit sees the light of day

Arla Foods Ingredients has sharpened its focus on the market for permeate and lactose products, which have gained increasing importance in a food industry battling with fluctuating raw material prices.

The result is a new permeate and lactose business unit dedicated to developing more value-added products, like the improved whey permeate VARIOLAC® 960.

The business unit is headed by senior manager, Klaus Kristiansen.

“Our philosophy at Arla Foods Ingredients has always been to develop new generation products that offer even more functionality than their predecessors. So it is a natural development that we are now turning to permeate, particularly as cost optimisation has become an increasingly critical issue for many of our customers,” he says.

Secure raw material supplies

The business unit has a stable supply of whey permeate to work with. To meet growing customer demand, Arla Foods Ingredients has sourced additional raw material supplies through external partnerships. This has, in turn, made more permeate available for processing into functional ingredients for cost-optimised food formulations.

“We are constantly on the lookout for new and better ways to help our customers rise to their challenges. To that end, innovative permeate and lactose products have high potential,” Klaus Kristiansen adds.

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Cooperation finds the right formula

Biostime had no experience on the Chinese infant formula market. But that did not stop it from launching a new premium infant formula brand – with the support of Arla Foods Ingredients, Laiterie de Montaigu and its own extensive sales and distribution network for probiotic supplements

China's fast expanding market for nutritional foods gained a brand new range of premium powder products for infants and pregnant mothers this summer. The company behind them is Biostime, well known in China as the first company to import probiotic supplements into the country.

Behind Biostime are Arla Foods Ingredients, supplier of advanced whey proteins and know-how, and Laiterie de Montaigu, a French manufacturer of private label infant formulas.

For all three companies, the three-way collaboration leading up to the successful launch of Biostime's seven infant and mother products has been a unique experience.

"The project started two years ago," recalls Dr. Wenhui Zhang, chief scientist officer at Biostime. "Sven Høgh Petersen from Arla Foods Ingredients visited our office at a time when we were planning to enter the infant formula business. He later introduced us to Montaigu, the company that now produces our products." The meetings with Arla Foods Ingredients and Laiterie de Montaigu were the first of many.

Experienced support

Biostime already had a strong French connection, as its probiotic supplements for children are manufactured by another company in France. This made Laiterie de Montaigu a natural choice. At Montaigu, Eric Blanchard, industrial director, was asked to use his long experience to identify the right raw materials, conduct pilot trials and determine the optimum processing parameters for the Biostime range.

But, first, Sven Høgh Petersen and his team had to design the initial formulations for the seven products.

Sven Høgh Petersen is pediatric team leader within Arla Foods Ingredients' nutrition business area.

"Biostime had set themselves the goal of producing the best infant formula products in China. But they lacked knowledge of this field – knowledge we had. So we prepared the formulations using a combination of our special whey proteins, including hydrolysates and α-lactalbumin-enriched protein fractions, and fresh milk from France," he says.

"In addition to optimising the formulations using the latest nutritional knowledge, we wanted to satisfy EEC, Codex and Chinese regulations. This was quite a puzzle due to differences between the regulations."

A critical difference

With many international brands already firmly established on the Chinese infant formula market, Biostime knew that product differentiation was critical.

"We came up with the idea of targeting high income families with a premium range," says Wenhui Zhang. "So we chose several special ingredients for our products, including osteopontin, which is a unique new ingredient that Arla Foods Ingredients has developed."

The long development process that followed included some 25 pilot production trials and comprehensive analyses of the results. For each product, the stability, flavour and appearance had to be finely tuned to Biostime's premium specifications.

"Biostime wanted us to analyse everything so they had full documentation to give to consumers and doctors in China," explains

Eric Blanchard at Laiterie de Montaigu. "Whenever we made a change or took a new step, Wenhui Zhang, Sven Høgh Petersen and I held a meeting. It was the first time I had worked on a project where three companies combined forces in this way. "Sven Høgh Petersen, too, sees the project as being particularly memorable.

"It was a very positive learning experience for me to participate in this multicultural project. Despite our different ways of thinking, we were able to create the best solutions together," he says.

Strong relations

For Eric Blanchard, a long-standing relationship with Arla Foods Ingredients was a big plus throughout the project. Arla Foods Ingredients has been a major supplier of whey proteins and hydrolysates to Laiterie de Montaigu for ten years. The ingredients are used in some of Europe's top infant formula brands.

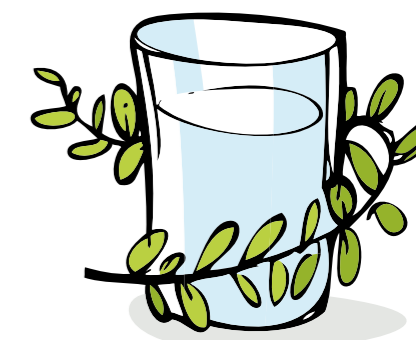
Comprising a premium three-stage nutrition system for newborns to three-year-olds and a product for expectant mothers, the Biostime range appeared in the first specialist baby



stores in China during July. Today Biostime has sales contracts with more than 550 stores. The extensive distribution network established for Biostime's probiotic supplements has enabled rapid market penetration.

"We have had a very good cooperation and I feel very pleased to have worked with Sven Høgh Petersen, Eric Blanchard and their teams. Sales are going very much the way we expected," says Wenhui Zhang. Plans are already underway to launch the range in leading supermarkets and drug stores.

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Known for nutrition

BIOSTIME 合生元®

Biostime quickly made a name for itself following its founding in 1999. The company's first product - a probiotic supplement for children up to the age of three – quickly caught the attention of nutrition-conscious Chinese consumers. Since then, Biostime has grown large and now has 600 employees and 58 sales offices all over China. Earlier this year, the company opened a modern plant in Guangzhou, fully equipped to pack its French-produced probiotic supplement in sachets for retail sale. In 2007, turnover reached 260 million RMB (26.8 million EUR). The launch of the new Biostime infant formula range is expected to bring 2008 turnover up to 400 million RMB (41.3 million EUR).



The innovator stays innovative

New research strategy aims to keep Arla Foods Ingredients ahead

Highly functional caseins, whey proteins, phospholipids and other bioactive whey components are in the research pipeline at Arla Foods Ingredients, where major investments are bolstering a new research strategy.

“Customer expectations are always growing with regard to the functionality of our ingredients and documentation of nutritional effects,” says Kristian Albertsen, head of innovation. “The strategy puts even more focus on this, along with the big demand for cost optimisation.”

Reinforced focus

Research investments throughout the Arla Foods group are being upped by more than 30% to stay ahead of customer demands. For Arla Foods Ingredients, which represents a big part of total research activities, this will bring additional competences to the innovation team and reinforce important focus areas: process development and control, functionality and well-being. Many research activities already target health and well-being through nutrition. Over many years, Arla Foods Ingredients has established a strong cooperative relationship with leading universities in Denmark and abroad to investigate bioactive whey components.

Bioactive spin-offs

A four-year research consortium, backed by the Danish government, is just one programme where Arla Foods Ingredients has worked with academic and industrial partners. Spin-off projects from the consortium, such as studies of the bioactive effect of phospholipids, are among those targeted by the new research strategy. “We have always concentrated a lot on whey proteins in our research. In the future, we will also spend more time on investigating the nutritional and functional properties of casein,” Kristian Albertsen adds.

Process competences

Researching potential new ingredients also involves developing processes - work that is typically combined with the task of optimising a customer formulation. Here, the team’s key competences in separation technology, protein modification and process control play a leading role. “We conduct a lot of in-house research in process development and control and work closely with industry on membranes for use in separation,” says Kristian Albertsen. “These efforts are now being intensified further.” Arla Foods Ingredients has a long-held reputation as a pioneer in the world of whey-based ingredients. With the new research strategy, this status should remain intact.

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*Illustrated above is associate professor in molecular biology **Esben Skipper Sørensen** who is responsible for the projects with Osteopontin*

Commercial products by an academic route

Business-oriented university research gives Arla Foods Ingredients primary knowledge for developing innovative milk proteins



Erik Meiniche Schmidt
Dean of the science faculty at Aarhus University, Denmark



Cooperation agreements are a win-win scenario for business and academia. While businesses gain access to the latest front-line research, academic institutions benefit from a business perspective that ensures the relevance of their research to society at large.

At Arla Foods Ingredients, the launch of new commercial milk proteins with documented health benefits is linked to a long-standing cooperation with Aarhus University in Denmark, ranked among the top universities in the world.

Knowledge developed by the university has provided the fundament for several of Arla Foods Ingredients’ innovative milk protein products.

Direct knowledge transfer

Erik Meiniche Schmidt, dean of the university’s faculty of science, sees the opportunity to transfer knowledge directly to businesses as a major advantage. “It is a big plus to see the discoveries we make in our research being put to use in the real world. The business perspective can inspire our research and its direction,” he says.

“Projects with a business angle are also often eligible for government support.”

In return, Arla Foods Ingredients gains access to an internationally respected centre of primary scientific knowledge “As part of an international network within milk research, we can provide Arla Foods Ingredients with the collated global knowledge of the area,” Erik Meiniche Schmidt adds.

Global milk interest

The man responsible for the university’s cooperation with Arla Foods Ingredients is associate professor in molecular biology, Torben Ellebæk Petersen. He reports that studies of the many bioactive components in milk are an area of growing global interest. “People have realised that there are interesting things in milk. Milk is the only food product that nature actually intended as food – it is optimised to ensure the survival of our offspring. “By having access to frontline research, Arla Foods Ingredients can start looking at potential new products from an early stage,” he says.

New opportunities to cooperate

In addition to benefiting from these vast knowledge resources, Arla Foods Ingredients is currently working with Aarhus University on a research project to investigate optimal nutrition for elite sportsfolk. Players from one of Denmark’s premier league football teams are participating in a test program developed by the university’s Institute for Sport. As part of this, the players are testing a protein drink developed by Arla Foods Ingredients to speed up muscle recovery after hard exercise and reduce the risk of muscle strain injury. The project is a step towards an even broader cooperation between Arla Foods Ingredients and the academic world.

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Debut on the US whey processing market

Arla Foods Ingredients and Green Meadows Foods sign a letter of intent

Ambitions are high in Arla Foods Ingredients following an initial agreement to start US-based production of value-added, milk-based ingredients in collaboration with Green Meadows Foods.

The two companies have signed a letter of intent to combine their strengths in a partnership aimed at making a strong impact on the North American protein market.

A start up company established in November last year, Green Meadows Foods will provide high quality milk and whey raw materials from its new cheese plant in Hull, Iowa. Arla Foods Ingredients will contribute technology for the production of functional and nutritional ingredients and will have exclusive responsibility for production and sales.

Significant opportunities

Henrik Andersen, senior vice-president, says Arla Foods Ingredients has been looking for a suitable partner in the US for some time.

“Applying our global whey concepts to the American market and establishing a local partnership will provide significant new opportunities for us,” he states.

“The American market is approximately 50% of the global whey protein market, and we are now entering with a strong partner.”

Peter Hassing, president at Arla Foods Ingredients’ US office in New Jersey, agrees that the partnership is a significant step towards realising the company’s growth ambitions.

“This is a major step forward for Arla Foods, and we look forward to presenting many new opportunities to our customers once we have a local production capability,” he adds.

Technology transfer

Arla Foods Ingredients aims to transfer its state of the art technologies to the plant, where the products will be both Grade A and kosher approved. The possibility to influence the plant’s design, says Henrik Andersen, is one advantage of teaming up with a newly started company.

“It means we can get it right first time. At Arla Foods Ingredients, we have proprietary technology that can give the plant many dimensions, and we appreciate the opportunity to implement it from the start.”

Expansion plan

Green Meadows Foods’ cheese plant has a start-up capacity to process 2.5 million pounds (1.13 million kg) of milk a day and plans to double this capacity in the near future. According to the letter of intent, Arla Foods Ingredients will acquire 100% of the whey processing assets.

It is expected that definitive agreements will be signed in the second quarter 2009.

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*Susanne Kønigsfeldt,
Partner Manufacturing
manager*



New link in the supply chain

Fast, flexible product deliveries are to be assured into the future by Partner Manufacturing, the new link in the Arla Foods Ingredients supply chain. A response to the global raw material shortage of 2007, the unit will ensure supply dips do not compromise the ability to meet customer orders.

Cooperation agreements with external raw material suppliers, such as the Norwegian dairy company Tine and Euroserum in France, are key to balancing supply with customer demand. In some areas, customers will also experience a shorter response time.

Susanne Kønigsfeldt, Partner Manufacturing manager, points to quality assurance as a top priority.

“We need to be sure that all products meet our high Arla standards. This means that supplier agreements include requirements for quality assurance, laboratory analysis and dispatch documentation. We also conduct regular audits and deliver know-how to suppliers that are expanding their production,” she says.

Customers are welcome to conduct their own audits of supplier plants, just as they do at Arla Foods Ingredients’ own production sites.

“The raw material situation is currently stable. But we expect demand to grow,” says Susanne Kønigsfeldt. “The role of Partner Manufacturing is to prepare us to meet our customers’ demand in every situation.”

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New profile behind the logo

Nature has always been important to Arla Foods. Now the group has launched a new profile and strategy to bring it into even sharper focus — under the heading “Closer to Nature.”

The strategy reinforces Arla Foods Ingredients’ commitment to developing innovative solutions produced with modern technology and an unshakable respect for nature. Within Arla Foods Ingredients, this approach has also been given a new name: “Natural Evolution.”

The natural origin of Arla Foods Ingredients’ milk-based products has always been clear. “Closer to Nature” recognises the challenges facing food manufacturers today as consumers step up demand for more natural food products. In addition, it highlights the ongoing focus on sustainability and quality in production.

Implementation of the new profile is much more than the new logo. It includes a series of initiatives to give production processes and products an even more natural edge. The website www.arlafoods-ingredients.com has also been relaunched with a fresher “Closer to Nature” design.

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A baker's chance to tuck into sport

Sports folk could soon be popping to the bakers for a high-protein bite – based on a new Arla Foods Ingredients concept

At last – bakers are about to gain an opportunity to enter the world of sports nutrition. After some years of dabbling with fat and sugar reduction, the bakery industry can look forward to baking a high-protein snack for top athletes and fitness fans alike.

The opportunity comes in the shape of a brand new concept from Arla Foods Ingredients.

“A number of our bakery customers have asked us to develop protein cookies to help them improve their health image,” says Søren Nørgaard, technical manager.

“What we have come up with is a baked snack or meal replacement concept that can contain up to 55% protein while being low in sugar and fat.”

Arla Foods Ingredient’s milk proteins provide the high protein content. With regard to the fat content, the individual bakery is free to choose any fat with a healthy profile.

Uniquely savoury

The savoury profile is just one of the concept’s unique features – contrasting with the sports nutrition sector’s almost exclusive tendency to produce sweet-flavoured products.

Another is the fact that the snack can be produced on existing bakery equipment, requiring only a mixer and an oven.

Crisply moreish

Wafer-thin, crispy and with a moreish pizza-like flavour, the new concept raised considerable interest when presented at BakingTech 2008 in Chicago.

The bakery team at Arla Foods Ingredients is currently testing new flavour variants in a proactive effort to give customers additional inspiration in their product development.

“We have high expectations for this concept, which represents a completely new chance for the bakery industry to enter the sports nutrition sector,” says Søren Nørgaard.

A few protein snack samples are likely to be in the bag during visits to bakery customers from now on.

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