NEWSLETTER

FSL INGREDIENTS
Your Long Term Partner

DAIRY INGREDIENTS Q4 2019

Dear Readers,

Greetings from FSL. We are pleased to share the latest edition of our Newsletter with you. Global trends are changing and adapting to the needs of the customers who are not just becoming aware but also demanding and discerning due to the ubiquitous nature of social media and its ability to disseminate information to consumers at the touch of a button.

This awareness and changing demands have brought us into an era of unprecedented global competition leading to an environment of opportunities and threat. Opportunities arise in the form of new plant-based products which cater to the demands of the growing number of lactose intolerant and flexitarian consumers in the region. And the threat lies in the product life cycles which are now being reduced giving way to new and innovative products which quickly over-shadow the "basic" products.

This consumer trend has further enhanced the role of R&D and accelerated innovation, where they can test and introduce new ingredients to target the 'new' and 'growing' niche. Besides, the role of marketing is further enhanced to support the new products in the market with the right 'promotion', 'positioning' and 'pricing' strategies in place, to achieve the needed results. This consumer trend has further enhanced the role of R&D and accelerated the need for innovation to allow the testing and introduction of new ingredients to target these emerging growing categories.

In the previous editions of our Dairy Newsletters, we have shared information about Oat Beta Glucan and Fibers and the functional benefits of these ingredients in Dairy applications. Fortifying yogurt or dairy products with Fiber is a trend of interest for manufacturers who want to create functional foods with health benefits for their consumers and also utilize their functional abilities to achieve it in a cost effective manner.

In this Newsletter, we will also continue with our focus on Health and Nutrition with new concepts from "Stern Vitamin" that can help manufacturers introduce new products in the market to be distinct and distinguish themselves on the shelves while providing consumers with enhanced health benefits.

We also re-introduce the Lactosan NCB powders. These natural cheese powders can be a tool to replace MSG, yeast extract, ribotide and dairy flavors from the ingredient list, thereby, providing an option of clean label. Furthermore, these can be used to reduce salt and mask off flavors.

We hope you find this Newsletter informative and useful. Please feel free to share your feedbacks, comments and do let us know if there is any topic of your interest, which you would like us to include in our future Newsletters.

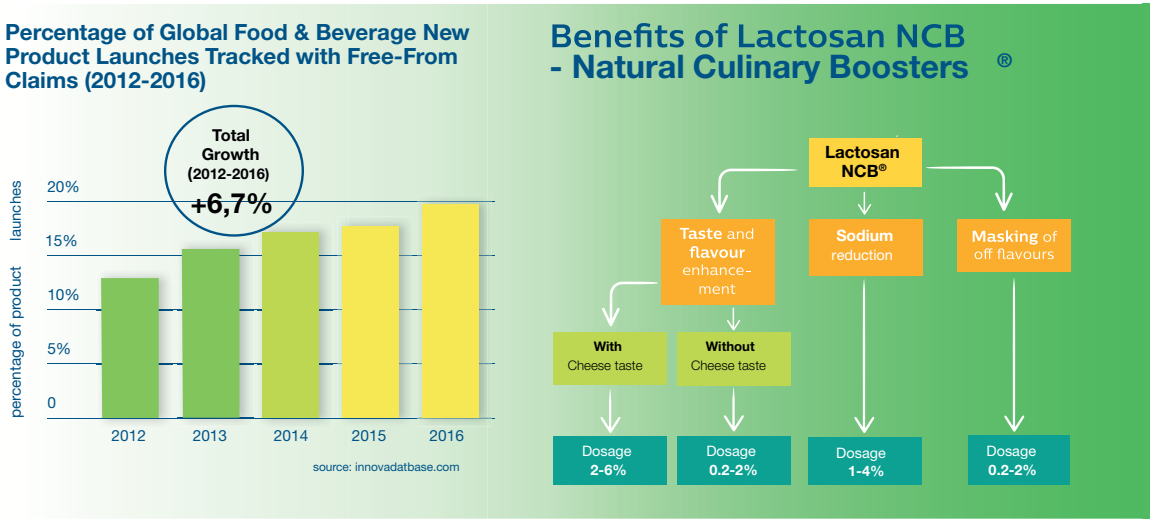
Natural Culinary Boosters

The Trend:

The clean-label movement has come a long way since the term was first used to indicate the use of more natural ingredients and the absence of chemical additives. Today, the issue covers all areas of ingredient transparency, with clean, clear and simple labels becoming a new global standard. Consumers demand authentic products with fewer ingredients and additives. At the same time, they need ingredients which can ensure a good and rich taste in their products. In the industry, the use of flavor enhancers such as MSG, yeast extract and ribotides, as well as synthetic flavors and enzyme modified cheese, are widely used to produce a rich and powerful flavor. Therefore, there is a great need to find natural ingredients that contain taste and aroma flavors with flavor enhancing properties.

Benefits of Lactosan NCB - Natural Culinary Boosters®

Lactosan has developed a range of Cheese Powders, Lactosan NCB - Natural Culinary Boosters®, which have a multifunctional taste effect. These products are produced from specific types of matured cheeses with properties that makes them capable of replacing MSG, yeast extract, ribotide and dairy flavors. Furthermore, Lactosan NCB - Natural Culinary Boosters® can reduce salt and mask off flavors.



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Product portfolio: LACTOSAN NCB - Natural Culinary Boosters® 100/150 vegetarian, 175 vegetarian/organic

- Cheese odour
- Quick flavor release
- Extension of flavor profile
- Umami/Kokumi effect
- Helps mask off-flavors
- Suitable for all kinds of applications

LACTOSAN NCB - Natural Culinary Boosters® 200/250 vegetarian

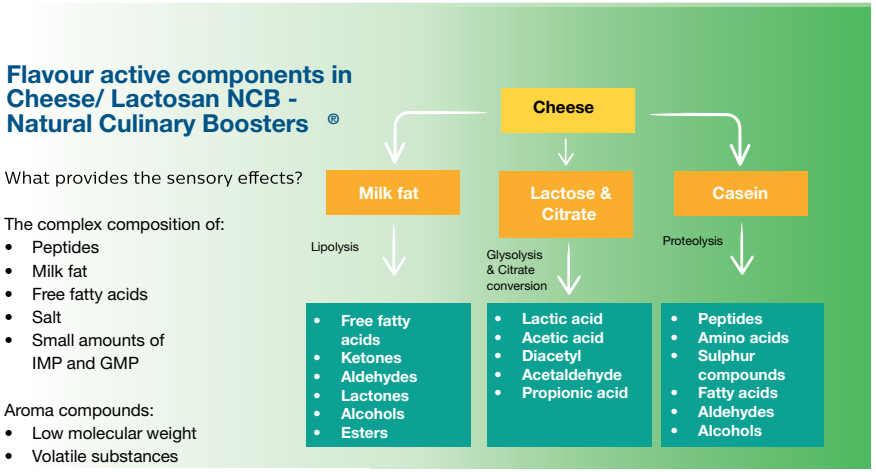
- Less cheese odour, harmonious flavor profile
- Rich mouth feel
- Extension of flavor profile
- Umami/Kokumi effect
- Helps mask off-flavors
- Suitable for all kinds of applications

LACTOSAN NCB - Natural Culinary Booster® 350 vegetarian

- “Fruity”, buttery, fatty, blue odour
- Rich, smooth, melt away mouth feel
- Umami/Kokumi effect
- Increase in the flavoring
- Helps mask off-flavors

LACTOSAN NCB - Natural Culinary Booster® 450 vegetarian

- Substitutes enzyme modified cheese
- Rich, smooth, melt away mouth feel
- Umami/Kokumi effect
- Increase in the flavoring
- Suitable for dairy products and sauces as well as bakery products.



Imitation Cream Cheese & Cheddar Spread - for Jars (Recipes)

Formulation reference for Processed Cream and Cheddar cheese spreads with Lactosan Cheese Powder/NCB. It is possible to obtain an aromatic taste profile like a product based on fresh cheese with these combinations. Using Cheese Powders offer a high-quality dairy product and is an easy way to control the cheese dosage.

Recipe (%)

	"Blue Cap" w/880003 & NCB 350	"Gold Cap" w/133219 & NCB 450
LACTOSAN Cream Cheese Building Block type 880003	**2.65**	**-**
LACTOSAN Natural Culinary Booster® type NCB 350	**0.50**	**-**
LACTOSAN Cheddar Powder type 133219	**-**	**2.40**
LACTOSAN Natural Culinary Booster® type NCB 450	**-**	**0.55**
Water incl. condensate	54.30	54.50
Vegetable fat blend (Akoroma NH33, AAK)	25.60	25.60
Milk protein concentrate (Promilk 85, Ingredia)	5.60	4.90
Buttermilk powder	5.30	5.80
Emulsifying salt (Joha S4, BK Giulini)	2.00	2.00
Skimmed milk powder	1.80	2.00
Stabilizer (Bekaplus Q3B, BK Giulini)	0.70	0.70
Salt	0.40	0.40
Lactic acid powder	0.40	0.40
Preservatives (Potassium sorbate)	0.40	0.40
Citric acid	0.35	0.35
	100.00	**100.00**

Stern Vitamin Micronutrient Premixes: Fortification for a Healthy Life

There is a growing demand globally for convenient food products, with a balanced nutritional composition, which taste good and which offer health benefits. We address this demand with individually developed micronutrient premixes for fortifying baby food, cereals, beverages, milk and dairy products, food supplements and many other foods. Micronutrients for fortifying foods and beverages combine health aspects with convenience. The importance for a balanced diet is increasing endlessly.

STERNVITAMIN
Fortification for a Healthy Life

About the company:

Established in 2006, Stern Vitamin offers full service in micronutrient premixes. We develop and blend premixes of vitamins, minerals and trace elements to customer order. Other functional ingredients like amino acids and plant extracts can be incorporated too.

Expertise:

Develop individual micronutrient premixes using vitamins, minerals including trace elements, functional plant extracts, amino acids and vitamin-like substances. Stern has a comprehensive knowledge of effective and carrier ingredients, food technology, nutritional science and food law. They maintain close partnerships with universities, research institutions and leading vitamin manufacturers.

Concepts from Stern Vitamins

Sternvitamins introduces premixes to help maintain balanced and healthy nutritional diet for those on weight loss or a calorie-restricted diet. This premix has been developed as food supplements for use under a weight loss or weight control regime and helps to maintain a balanced diet.

Nutrition Balancer

Examples of popular diets and their possible effects on vitamin and mineral intake*

Diet	Characteristics	Possible deficiencies
Atkins	· High protein intake through increased meat consumption · Very low intake of cereal products · Restricted consumption of fruit as a source of carbohydrates	Thiamine, folic acid, vitamin C and vitamin E, iron, magnesium
Ornish	· Very low-fat diet · Largely vegetarian diet	Vitamin A, vitamin B12, vitamin E, magnesium, zinc
LEARN	· Holistic concept covering general lifestyle, exercise and nutrition · A balanced diet is recommended (food pyramid)	Vitamin A, vitamin C, vitamin E, magnesium
Zone	· Division of energy intake into 40 % carbohydrate, 30 % fat and 30 % protein	Vitamin E, magnesium

* Source: Gardner et al.: Shifts in risk of micronutrient inadequacy (below EAR) or lower intake (below AI) after 8 weeks of the study diets, Am J Clin Nutr 2010; 92; 304-12.

Today's consumers attach more importance than ever to a healthy lifestyle, which is reflected clearly in their eating habits: trend diets and special nutrition plans to reduce the intake of fats, carbohydrates or protein – often supported by appropriate dietetic products.

Vitamins and minerals typically contained in nutrition balance premixes are vitamin A, thiamine, folate, vitamin B12, vitamin C, iron, magnesium and zinc.

These can be complemented, on request, with other active substances like caffeine, plant extracts (e. g. green tea extract) or amino acids, B12, vitamin C, iron, magnesium and zinc. These can be complemented on request with other active substances like caffeine, plant extracts (e. g. green tea extract) or amino acids.

Brain Power

Premix for concentration-promoting drinks with vitamins, minerals and essential amino acids.

Brain Power premix is an innovative product idea for the enrichment of beverages:
The finely balanced combination of vitamins, minerals and green tea extract aids concentration and memory; it can also help to reduce tiredness and fatigue. This makes the product attractive to a range of different types of consumer.

Functional ingredients:

- Green tea extract
- Vitamin C
- Zinc
- Iodine
- Pantothenic acid
- Taurine
- Glucoronolactone
- Inositol

Functional Properties:

Zinc: Supports infants' immune system and protects them from infection.

Iodine: This trace element is especially crucial for infants in order to ensure healthy development. Iodine deficiency can disrupt growth and damage the nervous system.

Inositol: Has antioxidant properties that fight the damaging effects of free radicals in the brain, circulatory system and other tissues of the human body.

Pantothenic acid (Vitamin B5): Helps to boost memory and regulate the autonomic nervous system through the production of neurotransmitters like acetylcholine.

Green Tea Extract: Can Improve Brain function.

Taurine: Stimulates new brain cell formation, providing a potential source for replacement of aging, damaged brain cells.

STERNVITAMIN
Fortification for a Healthy Life

Dairy Commodities Pricing Update

SMP: The upward price movement trend of SMP which began in Q4, 2018 and continued through the first 2 quarters of the year kept following the same route in Q3, 2019. Starting from under 1,600 Euro/ MT FOB in Oct 2018, SMP from Europe closed at around 2,610 Euro/ MT FOB for December. This is an app. 20% increase since September, when the prices were trending at app. 2,180 Euro/ MT FOB levels from Europe. Compared to same time last year (Dec.2018), this is an approximately 50% price increase. Last year currently, the prices were 1,730 Euro/ MT FOB levels.

SMP prices from Oceania as well have followed the upward trend moving to 2,780 Euro/ MT FOB in December, as compared to 2,395 Euro/ MT FOB in September. This is app. 16% increase in a quarter. Last December 2018, the average price for SMP from Oceania was trending close to 1,750 Euro/MT.

SMP prices from USA have also followed the trend as EU and Oceania. The prices moved from 2,100 Euro/ MT FOB in September 2019 to 2,465 in December 2019; an 17% increase in 3 months.

Overall, compared to last year average prices, SMP from EU, Oceania and USA has shifted 38.4 – 42%. Some of the reasons for the sharp increase in price is mentioned later in the newsletter.

WMP: WMP prices from EU showed a comparatively (to SMP price increase) more stability in prices. The EU WMP prices moved up by app. 5% in Q4, 2019 moving from app. 2950 Euro/ MT FOB in September 2019 to 3,095 Euro/ MT FOB in December this year.

WMP prices from Oceania have been increasing since June and have moved to approximately 3040 Euro/ MT FOB in December compared to 2717 Euro/ MT in June. In Q4 so far, the prices have moved up by 6%, moving to 3,040 Euro/ MT FOB in December from 2,860 Euro/ MT in September.

Some more points worth sharing in context of Dairy commodities can be mentioned as below:

1) **Limited Availability:** The high and extended summers in Europe coupled with strong opp osition from Environmentalists who are fighting to reduce Milch animals in Europe (due to the fact that they are the leading emitter of greenhouse gasses which are leading to global warming) is putting milk production from Europe under a serious scanner.

Considering that Europe will not be able to add to the herd size (and may actually be compelled to reduce them if the environmental pressure continues to mount), and the high temperature summers which are not supporting long milk production cycles with the existing herd size, the availability of milk powders is serious concern out of Europe. This is bound to put the supply – demand ratio out of proportion, especially for SMP, a large portion of which is catered by EU globally.

With Intervention stocks totally dry and no increase in milk supplies, the pressure for supply is already mounting, with most of the EU manufacturers already booked for their Q1, 2020 productions.

2) **Changing Product mix:** Although the overall milk production from Europe is expected to remain same as last couple of years, 1,525,000 MT, the ratio of product coming out of various EU-28 countries is changing. Out of the total Skim Milk powder exports in 2019, 25% is supplied by Germany and 27% from France. The increase in SMP production for France is not due to increase in raw milk supplies (which has decreased by approx. 1% for the period of Jan-Sep for 2019 and 2018) but due to the change in product mix. While France's SMP production went up by 6.3%, their WMP production dropped by 6.6% for the same period.

The last three - year production for milk powders is mentioned below:

Country	2017	2018	2019	%Var Jan-Sep
Germany	430,000 MT	414,000 MT (321,000 MT Jan-Sep 18)	295,000 MT (Jan- Sep 19)	-8%
France	409,000 MT	385,000 MT (299,000 MT Jan-Sep 18)	318,000 MT (Jan-Sep 19)	+6.3%

Furthermore, the falling prices for Butter (Average price for German Butter in 2017 was 5,270 Euro/ MT FOB, 5,136 Euro/ MT FOB for 2018 and the same stands at 3,910 Euro/ MT FOB). While in Sep 2017, Butter traded at over 6,900 Euro FOB and at over 5,500 Euro FOB for Sep 2018, this year September Butter price from Germany stood at 3,630 Euro/ MT FOB.

The reduced realization from Butter is going to put more pressure on SMP prices to balance the over-all realization.

In addition, improving Cheese and WMP prices, provide another option from EU Dairies to relook at their product mix.

The impact of these changes will impact the overall Dairy commodity prices, affecting the importers differently on basis of their product mix.

3) Increased demand from China: The China – US trade war has also contributed to the increase in the price. On comparing the import of SMP by China from Europe for the period of Jan- Sep, we can see an increase of 52% for that period. Against an import of 92,000 MT in 2018 (Jan – December), this year the imports for SMP stands at 103,000MT (from Jan-September 2019).

Reduced production, shorter season and increased demands from China have supported the price increase and this could keep the price trends upwards for the coming quarter as well.

4) Shift from SMP to WMP – The reduced gap between the WMP and SMP prices, is forcing some of the customers to shift their production recipes from SMP + Fat combinations to WMP, wherever possible. This shift will lead to an increased demand for WMP thereby forcing the WMP prices upwards.

5) Increase in demands for FFMP: The demand for FFMP from Europe has grown by 12.5% moving from 759,000 MT to 854,000 MT for the period of Jan-Sep. This has also created an increased demand for Milk solids, thereby keeping the SMP prices on the rise, while also pushing the FFMP prices upwards.

Market developments that can make a difference:

1) The constantly dropping Butter prices are pushing the EU suppliers to alter their product mix to achieve the best realization. Although Butter production has increased in Germany, but the equivalent ratio has dropped in France. Also reduced realization of Butter forcing SMP prices to go up to strike the balance.

2) The increased demands of SMP from Europe by China and the availability of SMP shrinking, it may be an opportunity to book long. It may also mean the prices staying and going firm in Q1, 2020, which would again mean long term contracts can be good option to have control on the costings and ensure availability.

3) With production increasing in Ireland, it would be ideal to consider Irish products. Ireland SMP production went up by 18% from 111,000 MT to 119,000 MT for the period of Jan-Sep 2019.

4) USA products may be more available and price wise competitive to find a new home for their products, as China drift away to EU origin products. However, it is worth mentioning that the total import of China from USA in 2018 for SMP was 21,000 MT and 10,000 MT for WMP.

Please contact FSL if you are interested
in any of the products showcased above:

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