

food europe

INGREDIENTS PROCESSING & PACKAGING ANALYSIS

THE QUARTERLY MAGAZINE FOR THE FOOD AND BEVERAGE INDUSTRIES IN EUROPE

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Issue 4 2017



FEATURING
FI Europe & NI
& ISM/ProSweets
previews



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foodeurope examines the food and beverage manufacturing industries in Europe and beyond. It is published four times a year and its aim is to ensure that readers have a source from which they can learn about new developments within key areas in the food and beverage manufacturing processes.

It covers the latest technologies and hot issues within the following main sections:

- > ANALYSIS AND QUALITY CONTROL
- > PROCESSING AND PACKAGING
- > INGREDIENTS

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Front cover picture
courtesy of Corbion



foreword

Welcome to the last edition of **foodeurope** magazine 2017.

In this issue we have a preview of one of the largest shows in the food and beverage calendar: Fi Europe & Ni. I know that many of you will be attending and look forward to meeting up with you.

In our ingredients section we have a range of informative articles from Taiyo, on developments in tea-based ingredients; Gelita, on the 'Innovation Game', or developing new products; Sensient, on today's trends in the food industry; and Close to the Heart, on the services they offer in the regulatory sphere.

We then have a preview of ISM/ProSweets, which is taking place in January.

In processing and packaging GEA focuses on its high quality solutions in the manufacturing of lollipops; Glatt explains its fluidised bed technology; Bosch Packaging Technology describes its Elematic case packing series and Makro Labeller explains how and why it will be upgrading a bottling line in February.

In our last section, analysis and control, the International Sweeteners Association describes new research into sugar replacement; we have a review of research into micronutrients from NUTRI-FACTS.org, Unisto describes how its security seal prevents product recalls for food and Mettler Toledo discusses product tampering.

I hope you enjoy reading this edition of **foodeurope**. Our next edition will focus on another big event in our industry calendar: Anuga FoodTec.

Juliet Hoskins
Editor



About Food Europe

Food Europe is a quarterly magazine covering the food and beverage industry in Europe. It facilitates the management processes responsible for identifying, anticipating and satisfying the needs of the European food industry.

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www.anugafoodtec.com

16 Show preview: Fi & Ni 2017 announces record number of exhibitors

Fi Europe & Ni 2017 is the must attend event on the calendar of virtually everybody who works in the food, beverage and ingredients industry. This year, it will be the biggest show to date: With a record number of exhibitors, a four-day conference programme focused on thought leadership and new sections and initiatives, organiser UBM EMEA expects the event to attract more visitors than ever before, as well as ensuring they are senior professionals with considerable purchasing power.
www.figlobal.com

Ingredients**31 Cheers to health, energy and wellness**

Tea is the most popular drink in the world, and products containing tea-based ingredients are on the rise. With Sunphenon® Instant Teas, Taiyo offers the ideal base for delicious drinks with added functionalities that are convenient to prepare and retain all the beneficial properties of tea.
 Taiyo GmbH

33 Facilitating the Innovation Game

Statistics repeatedly show that companies that innovate are more successful than those that don't. Whether it's to meet current consumer needs, reach new markets, exploit niche opportunities, improve overall profitability or just stay ahead of the competition – it's mission critical to focus on adapting, improving, modifying or developing completely new products.
 GELITA AG

36 Capturing the spirit of adventure

From a flavour point of view, the world has never looked so exciting. Today's consumers have a huge sense of adventure and a seemingly endless thirst for new experiences. At the same time, a deep desire for truth and authenticity is driving them in the direction of the past and towards ingredients with trustworthy back stories – often stretching back to ancient times.
 Sensient

39 Close to the Heart: Our industry services

Our services include a team with a high level of expertise in food labelling and regulatory support for both Canadian and US regulations. This includes standardised and non-standardised foods, foods for special dietary use like meal replacements, infant formulas, caffeinated energy drinks and dietary supplements.
 Close to the Heart

40 Show preview: Good perspectives for a successful ISM/ProSweets Cologne 2018

ProSweets Cologne, the international supplier fair for the sweets and snacks industry, is once again in 2018 showing its clear profile as the central order and information platform for the innovative sweets and snacks industry. Numerous companies have already registered for the coming trade fair in January 2018, including top exhibitors from the supplier industry. In total, over 300 companies from the sections manufacturing, packaging and ingredients are once again expected in Cologne from 28–31 January 2018.
<http://www.prosweets-cologne.com>
<http://www.ism-cologne.com>

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Processing & Packaging

42 New trends

During its history GEA has worked hard to respond to changing markets and has sought to lead in innovative product design. As Product Manager, Mrs. Angelique van der Rijken explains, "We want to be the best and have been the market leader for many years now, where we have served customers in more than 80 countries around the world".
GEA Food Solutions

46 Fluidised bed technology can help to improve margins

When certain food ingredients need to be produced with better margins, fluidised bed technology can deliver real benefits. It can be used, for instance, to optimise the film thickness of a coating, define the solubility of an instant product or find the ideal particle size for dust-free dosing. Fluidised bed technology is suitable for many issues.
Glatt Ingenieurtechnik

48 Quick and easy changeovers of case packing formats with Bosch technology

Cereals, biscuits, chocolate, cheese, frozen food or coffee can now be case-packed with even more flexibility. Bosch Packaging Technology, a leading provider of processing and packaging technology, has developed a modular collation platform for its Elematic case packing series.
Bosch Packaging Technology

49 Berrington Spring Water order a Makro Labeller

The Mak-Line RFL is a linear roll fed labeller capable of speeds up to 12,000 b.p.h, and for Berrington it will handle bottle sizes of 750ml, 500ml and 350ml applying wraparound film labels to either still or sparkling water. This latest labeller order from Berrington Spring Water completes 2017 as the best year to date that Makro have had regarding sales in the UK
Makro Labelling UK Limited

Analysis & Control

50 Emerging scientific news about low calorie sweeteners

The latest evidence around low calorie sweeteners' science was among a number of highly interesting topics presented at the 21st International Congress of Nutrition (ICN) that took place this year in Buenos Aires, Argentina, from 15–20 October.
International Sweeteners Association

52 NUTRI-FACTS.org: Micronutrient research today

A new report from Frost & Sullivan suggests that daily supplementation with 10mg lutein and 2mg R,R'-zeaxanthin could save up to €6.2 billion in total medical costs resulting from age related macular degeneration (AMD) in Europe. To calculate healthcare cost savings, the analysis considered the prevalence of late-stage AMD in Europe, and the improvements in visual acuity for subjects using lutein and R,R'-zeaxanthin supplements versus placebo.
www.nutri-facts.org

56 Unisto's market innovation: Detectable security seal prevents product recalls for food

With its newly developed security seal: Unisto Pharmaflex Detect, Unisto has once again demonstrated its status as pioneer in the market. If the security seal or parts of it knock off and accidentally end up in the food, a metal detector or X-ray machine can identify them and sort them out.
Unisto

59 Is your baby food product fully protected?

The most well-known case of attempted extortion through baby food tampering occurred in 1989. Slivers of glass, razor blades, pins and caustic soda were found in baby food produced by two different British manufacturers. A blackmailer tried to extort £1.3 million from one brand owner, which then escalated as copycat criminals tried to benefit.
Mettler Toledo

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N U R T U R I N G
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Sequencing of the stevia plant genome completed

For the first time, scientists have completed the sequencing of the stevia plant genome. Lead scientists from PureCircle Stevia Institute and KeyGene have unveiled this major breakthrough in research showing the annotated, high-quality genome sequences of three stevia cultivars.

This achievement provides a better understanding of key enzyme groups used by the stevia plant to produce the steviol glycosides giving stevia its characteristic sweet taste. To enable acceleration of the traditional breeding of the stevia plant, researchers identified several million potentially new markers in the assembled genomes.

PureCircle's non-GMO agriculture program is strengthened by these cutting-edge findings. The research helps facilitate optimisation of the levels of the best-tasting steviol glycosides, including improvements in the levels of the well-known minor glycosides, Reb D and Reb M.

The data has been integrated into CropPedia, a comprehensive bioinformatics platform developed by KeyGene for visualisation and analytics of all available genomic, transcriptomic and metabolomic stevia datasets. CropPedia enables chemists, biochemists, geneticists and agronomists to better understand the steviol glycoside biosynthesis pathways, and to rapidly create improved stevia varieties using traditional breeding practices.

Stevia is a plant-based, zero-calorie sweetener which has been approved by all major regulatory authorities globally for use in foods and beverages in over 150 countries.

Optimised stevia ingredients developed as a result of this research will enable deeper reductions in sugar and calorie content of foods and beverages, as well as superior tasting products. This greatly benefits consumers around the world by helping them meet dietary guidelines calling for reductions in sugar and calorie intake for improved health. ■



US dairy product shipments forecast to total US\$122 billion

US dairy product shipments are forecast to total US\$122 billion in 2021, according to Dairy Products: United States, a report recently released by Freedonia Focus Reports. Advances will be driven by population growth and increasing disposable personal income levels, which will lead to rising demand for US dairy products in domestic and export markets.

Shipments of yoghurt, the fastest growing product segment, will benefit from new product introductions and an ongoing consumer trend toward healthy snacks.

In the report, total shipments are segmented by type in terms of:

- cheese
- fluid milk & cream
- frozen dairy
- yoghurt
- butter
- other dairy products such as dry, condensed and evaporated milk ■



UN and partners launch campaign to tackle new fungus strain threatening world's bananas

The United Nations Food and Agriculture Organisation (FAO) has announced that it is working with partners to help protect the world's banana crops from a new strain of fungus, known as Fusarium wilt TR4, which can last for years in the soil.

According to FAO, the 'insidious' fungus poses major risks to global banana production and could cause vast commercial losses and even greater damage to the livelihoods of the 400 million people who rely on the world's most traded fruit as a staple food or source of income.

"We need to move quickly to prevent its further spread from where it is right now and to support already affected countries in their efforts to cope with the disease," said Hans Dreyer, Director of FAO's Plant Production and Protection Division. He stressed that the resilience of banana production systems can only be improved through continuous monitoring, robust containment measures, strengthening local capacities and enhancing global collaboration.

Fusarium wilt TR4 was first detected in Southeast Asia in the 1990s and has now been identified at 19 sites in 10 countries,



Allergy & Asthma Network brings food allergy awareness to World Food Championships

Allergy & Asthma Network, the leading national nonprofit organisation dedicated to ending needless death and suffering due to asthma, allergies and related conditions, is hosting a half-day food allergy symposium on Friday, November 10 at the 2017 World Food Championships, the largest food competition among the world's best chefs.

The symposium, 'Addressing Allergies in Food Service', will focus on food allergy awareness, allergen substitutions in recipes and avoiding cross contamination in the kitchen, as well as the psychosocial impact of life-threatening allergies.

The program will be moderated by Tonya Winders, President & CEO of the Network, and will include presentations from celebrity chef Elizabeth Falkner and Drs. Ruchi Gupta and Michael Pistiner. Falkner is an accomplished chef and cookbook author, and has appeared on numerous TV cooking shows such as 'Iron Chef', 'Top Chef', and 'Food Network Challenge'. Dr. Gupta is an associate professor of paediatrics and food allergy researcher at Northwestern Medicine and Ann and Robert H. Lurie Children's Hospital of Chicago. Dr. Pistiner is a paediatric allergist and director of food allergy advocacy, education and prevention of the Food Allergy Center at MassGeneral Hospital for Children.

According to the US Centers for Disease Control and Prevention (CDC), up to 15 million Americans have food allergies, including 4.2 million children under the age of 18. Every three minutes, a food allergy reaction sends someone to the emergency room.

"It can be a difficult process for people with food allergies to develop trust in restaurant staff when ordering food," Winders says. "What can restaurants do to ensure patrons with food allergies stay safe and enjoy their time dining out? By working with the World Food Championships, Allergy & Asthma Network further broadens its reach to educate food industry professionals and the general public about the importance of food allergy awareness in the restaurant industry." ■



What's next for US importers under FSMA?

The small business compliance deadline for the U.S. Food and Drug Administration (FDA) Preventive Controls Rule for Human Food passed on 18 September, 2017. Under the Foreign Supplier Verification Program (FSVP) Rule, many US importers have six months from this deadline (until 19 March, 2018) to implement FSVPs for foreign suppliers of human food that qualify as small businesses (defined as having fewer than 500 full-time equivalent employees).

FSVPs consist of documenting several detailed components for each foreign supplier and each category of their imported food products (ie chocolate confectionary, bottled oils, etc.) In order to ensure compliance before the deadline, Registrar Corp urges importers to begin creating their FSVPs now.

What do I need to develop FSVPs?

FDA requires the following, among other things, of importers covered by the March deadline.

Documentation of supplier compliance

Importers are required to ensure that they import from suppliers whom they have evaluated and approved through various methods that outline the potential health risks their products pose. A covered importer must ensure that a supplier is compliant with the Preventive Controls Rules, including the implementation of a food safety plan, and allergen labelling rules. The importer must also monitor the foreign supplier's FDA compliance history.

Should an approved supplier be found non-compliant, FDA requires importers to take corrective actions. These may involve facilitating the development of the supplier's Food Safety Plan or ceasing business with them until they become compliant.

Hazard analysis of food products

The FSVP rule requires importers to document a detailed hazard analysis of each category of food products they import from a given supplier. The analysis should identify any known or reasonably foreseeable hazards that could pose illness or injury, as well as the potential risks involved in the supplier's handling of the food during manufacturing procedures, storage and transport.

The data obtained by this hazard analysis should be used to determine appropriate supplier verification activities relative to the level of risk these products pose, such as sampling or onsite audits of a food facility. ■

Source: Registrar Corp.



Canned seafood market worth US\$27.8 billion by 2025

The global canned seafood market is expected to reach US\$27.8 billion by 2025, growing at a CAGR of 3.2%, according to a new report by Grand View Research, Inc. The industry is anticipated to grow on account of rising demand for processed food due to ease of consumption.

The health benefits offered by canned seafood such as essential nutrients added during canning process including vitamin B12, D and A for metabolism improvement, is expected to drive growth over the next eight years. In addition, high demand for the ready-to-eat seafood is expected to translate into an increased product consumption.

The product offers health benefits including improvement eyesight, reduced risk of depression and increased immunity. In addition, the calcium content provided by this product helps to increase bone strength. Use of sustainable fish farming techniques is expected to result in an increased yield, leading to an abundance of raw material for the market.

Technological advancements in tuna fishing with use of Fish Aggregating devices and advanced packaging technology for fish products is to drive industry growth over the eight years. In addition, improved packaging procedures with the use of RFID tags to improve the product traceability and agglomeration is expected to increase the product adoption by consumers.

Further key findings from the report suggest:

Sardines are expected to emerge as the fastest growing segment growing at a CAGR of 5.0% by revenue from 2017 to 2025 owing to the rising availability in ecommerce coupled with increased health benefits offered by the product.

The market for canned tuna is expected to account for 47.5% of global volume due to high consumer adoption coupled with the superior taste of the product. ■



A daily serving of 5 prunes helps slow bone loss and lowers the risk of osteoporosis

Approximately 1.4 million Canadians are living with osteoporosis, a condition characterised by low bone mass and deterioration of bone tissue. Now, scientific research has found that simply eating a serving of five prunes a day may help slow and prevent bone loss.

Research published in the journal *Osteoporosis International* studied postmenopausal women with low bone density, who ate 5 to 6 prunes (50g) per day for a six-month period. The research suggests that this level of consumption was as effective in preventing bone loss as a previous study where postmenopausal women consumed 10 to 12 prunes (100g) per day for one year.

"This research is extremely compelling, since women can lose 1 to 1.5% of their bone density annually following menopause," says Dr. Shirin Hooshmand, PhD and lead researcher of the study at the School of Exercise and Nutritional Sciences at San Diego State University.

In April 2017, a comprehensive review of 24 studies on prunes and bone health was published in *Nutrients*. The author found that prunes enhance bone formation and exert beneficial effects on bone mineral density.

California prunes are rich in nutrients that are vital for bone health including vitamin K and potassium. Naturally sweet and delicious, a serving of about five prunes is only 100 calories and is a source of dietary fibre.

The evidence continues to grow and support the fact that incorporating prunes as a regular part of a nutritious diet seems to offer long-term bone health benefits, particularly in postmenopausal women. A larger clinical trial is currently underway, to further explore prunes' effect on bone density and estimated bone strength in postmenopausal women. ■



Source: California Dried Plum Board

Better off Brits flock to food discounters

It seems you can never be too posh to push a discount trolley, as Mintel's Food and Non-food Discounters UK 2017 Report finds better off Brits flocking to UK food discounters. Indeed, today, as many as 77% of British consumers with a household income of £50,000 or more visit food discounters, compared to 73% of those with a household income of £15,500 or less.

And it appears that premium products are pulling in the punters. A savvy 66% of discount shoppers say that food discounters' premium ranges are just as good as elsewhere, with only 7% disagreeing with this statement.

Moreover, even when entertaining, well-off

Brits are not afraid to stock up with the discounters. Almost half (47%) of food discount shoppers with a household income over £50,000 have bought party items from these stores in the past three months, up from an average of 36% of shoppers.

Mintel research confirms that Brits are well and truly hooked on food and non-food discounters as a discount loving nine in 10 (89%) consumers shop at discount retailers, with 84% visiting non-food discounters and 74% visiting food discounters. Brits' love of discounters peaks among young consumers: 93% of 16–24s have visited either a food or non-food discounter in the last three months. In contrast to usage of food discounters, non-food usage peaks amongst those with a household income of between £25,000 and £49,999 (84%), compared to those with a household income of £50,000 or over (79%).

Nick Carroll, Senior Research Analyst at Mintel, said: "High income households are just as likely to shop at food discounters as lower income ones. The post-recession success of leading discount food retailers has been built on a softening of their hard discount roots and bringing in ranges which appeal to a wider variety of consumers. A part of this success has been the introduction of more premium ranges, something that is clearly going over well with shoppers."

This year total discount sales are set to reach £26.7 billion, with food discounters accounting for the bulk of sales (£17.2 billion) and non-food making up the remaining £9.5 billion. What is more, Mintel forecasts that total sales are set to experience further growth of 57% through 2022 to reach £41,827 billion, accounting for 11.4% of all retail sales.

Within the sector, food discounters grew by an estimated 13% in 2016 to reach £15.2 billion; further growth of 13.5% is estimated for 2017 when the market will reach £17.2 billion. ■



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A maternal high-fat diet may program child for disease risk, but better nutrition later on can change that

Research has shown that a mother's diet during pregnancy, particularly one that is high-fat, may program her baby for future risk of certain diseases such as diabetes. A new study from nutrition researchers at the University of Illinois (U of I) shows that switching the offspring to a new diet – a low-fat diet, in this case – can reverse that programming.

Yuan-Xiang Pan, a professor in the Department of Food Science and Human Nutrition at U of I, along with Laura Moody, a doctoral student in the Division of Nutritional Sciences at U of I study how early-life nutrition affects later generations and offspring health. In a new study published in the journal, *Epigenomics*, the researchers focused on whether a post-weaning diet, or a diet later in life, could control the epigenome and affect metabolism in the body.

Epigenetics does not involve changes to the DNA sequence, but are changes that modify gene expression. A person's epigenome is inherited, but it is also reversible based on what you eat, whether you exercise, and even where you live, for example.

"Traditional genetics says that you inherit a sequence from your parents. Epigenetics says you can inherit these other changes to the DNA, as well," Moody explains. "This is where the whole maternal programming of metabolism – the epigenome – comes into play. We wanted to show these changes are easily altered, even after this critical period. You can still change that epigenome later in life."

"The message is not that the high-fat diet is itself bad, but rather you always have the opportunity to change it later. It's not like you are doomed by what your mom or dad did in early in life," she adds. ■

Source: TKS – Tekno Scienze Publisher



EU funded research consortium 'LipiDiDiet' finds a way to impact Alzheimer's disease

Full results from the European LipiDiDiet clinical trial were published in *The Lancet Neurology*. The trial showed that in people with prodromal Alzheimer's (the pre-dementia stage of this disease), consumption of a once-daily medical nutrition drink, whilst not improving a specific neuropsychological test battery (NTB), did result in a significant stabilisation of everyday cognitive and functional performance, as well as reduced brain shrinkage. The drink contains 'Fortasyn Connect', a specific combination of essential fatty acids, vitamins and other nutrients.

The pioneering clinical trial is part of a large European Union funded project and involved 311 patients across 11 sites in four countries (Finland, Germany, the Netherlands and Sweden). The trial involved patients with prodromal Alzheimer's (often referred to as Mild Cognitive Impairment or MCI). Patients were randomised to receive either the nutritional intervention or an iso-caloric control drink for 24 months.

The study's primary endpoint, impact on NTB, was not met. The decline in the NTB of the control group was less than anticipated rendering this analysis statistically underpowered. However, key secondary endpoints showed significant advantages for nutrient-treated patients with 45% less worsening in the Clinical Dementia Rating-Sum of Boxes (CDR-SB). This measure is especially important because it tracks the patient's disease progression based on performance in managing everyday life, such as handling household emergencies, handling financial transactions or forgetting a major event. Furthermore, there was less brain atrophy in the active group, with 26% difference for the hippocampus and 16% for the ventricular volume. Progressive brain degeneration is typical for Alzheimer's, with hippocampal damage being responsible for many of the associated memory deficits. Over the 24-month period the incidence of any adverse events was similar between the active and control groups.

Professor Tobias Hartmann, the project's coordinator, said: "While this nutritional intervention is not a cure for Alzheimer's, it effectively shows that the earlier in the disease process we intervene, the greater the advantage for the patient. Importantly, reduced atrophy in the patient's brain shows that the benefit extends beyond symptomatic effects, something never before achieved." ■



Global ready meals market expected to reach US\$146,247mn by 2023

According to a new report, the ready meals market was valued at US\$72,257 million in 2016, and is expected to reach US\$146,247 million by 2023, registering a CAGR of 10.6% during the forecast period. Europe dominated the global ready meals market, accounting for one-third of the total market share in 2016.

Ready meals can be described as precooked meals that require minimal time for preparation. Changes in lifestyle of people results in surge in demand for packaged and ready-to-eat food products. Increase in population and cost-effectiveness of these meals are other factors that supplement market growth. According to National Institutes of Health (NIH), above 90% of the US population consume ready meals daily, which further boosts the growth of the market. However, health concerns and negative perceptions of customers pertaining to health effects of ready meals hinder market growth.

In addition, events such as the horse meat scandal in the UK (2013) has played a role in drawing consumers away from these meals. Furthermore, manufacturers are unable to ensure consistency and quality with existing transportation and storage systems, which hampers growth prospects of the ready meals market. Thus, manufacturers are now focusing more on the packaging factor, which plays a significant role in retaining product quality, texture, shelf life, colour and taste of the ready meals.

Key findings

In terms of value, the chilled pizza segment is expected to grow at a CAGR of 14.1% during the forecast period.

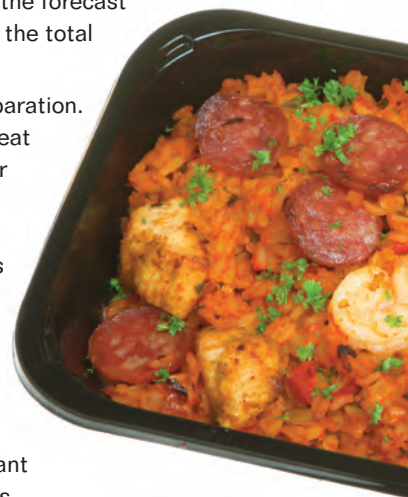
Europe is projected to maintain its lead position throughout 2023, growing at a CAGR of 10.5% in terms of value. Asia-Pacific is anticipated to witness the highest growth during the forecast period.

The store-based retailing segment is estimated to occupy more than a half share of the total market in 2016.

China is expected to occupy more than a half share of the total Asia-Pacific ready meals market by 2023.

In the global ready meals market, India is expected to grow at a high CAGR of 12.6%, in terms of value, from 2017 to 2023. ■

Source: Allied Market Research – Ready meals Market by Type, and Distribution Channel: Global Opportunity Analysis and Industry Forecast, 2017-2023



Statement from Susan Mayne, Ph.D., on proposal to revoke health claim that soy protein reduces risk of heart disease

FDA-authorised health claims reflect well-established relationships based on the most robust level of scientific evidence. Today, we are proposing a rule to revoke a health claim for soy protein and heart disease. For the first time, we have considered it necessary to propose a rule to revoke a health claim because numerous studies published since the claim was authorised in 1999 have presented inconsistent findings on the relationship between soy protein and heart disease. This proposed action, which has undergone a thorough FDA review, underscores our commitment to providing consumers with information they can trust to make informed dietary choices.

While some evidence continues to suggest a relationship between soy protein and a reduced risk of heart disease – including evidence reviewed by the FDA when the claim was authorised – the totality of currently available scientific evidence calls into question the certainty of this relationship. For example, some studies, published after the FDA authorised the health claim, show inconsistent findings concerning the ability of soy protein to lower heart-damaging low-density lipoprotein (LDL) cholesterol. Our review of that evidence has led us to conclude that the relationship between soy protein and heart disease does not meet the rigorous standard for an FDA-authorised health claim.

Should the FDA finalise this rule, the agency intends to allow the use of a qualified health claim as long as there is sufficient evidence to support a link between eating soy protein and a reduced risk of heart disease. A qualified health claim, which requires a lower scientific standard of evidence than an authorised health claim, would allow industry to use qualifying language that explains the limited evidence linking consumption of soy protein with heart disease risk reduction. ■

Source: US Food and Drug Administration



Anuga FoodTec 2018

In edition 1 2018, **foodeurope** will publish a comprehensive preview of this important trade show. Below is a flavour of what to expect next March.



Robots in the food industry: collaborating arms, sensitive grippers and new safety technologies pave the way for the cobots.

A new generation of robots is on the verge of making a breakthrough in the food and beverage industry: the cobots. Equipped with collaborating arms, sensitive sensors and cutting-edge safety technology, the autonomous lightweight robots will work hand in hand with employees in future. Anuga FoodTec from 20–23 March 2018 in Cologne will inform visitors about what opportunities this interaction between humans and machines will bring production and logistics, both in the form of new products presented by the exhibitors as well as in the event programme. From super fast carton packing machines with an integrated Delta picker, through to the articulated arm robot with a load capacity of one tonne – the solutions presented on-site also

offer everything needed to increase productivity and further push automation in the direction of Industry 4.0. Among other things, special 'guided tours' and the forum on Resource Efficiency will also pick up on the themes automation and robotics.

Robots are a key component of the fourth industrial revolution and as a central element of automation are indispensable today. Up until 2020, the global stock of industry robots will increase from around 1.8 million pieces in the year 2016 to over three million, with an upwards trend – according to the latest forecast of the International Federation of Robotics (IFR). "The rapidly growing offer of models extends the fields of application for industry robots and gives companies of all sizes the chance to automate their businesses flexibly," said IFR President Joe Gemma – good growth prospects for an industry that is striving to lend the classic industry robots increasing cognitive skills using intelligent technologies.

Humans meet machines

Many of the companies exhibiting at Anuga FoodTec are working on Human/Robot Collaboration (HRC). Here, agile lightweight robots with up to seven axes that can move loads of up to 15 kilograms are implemented. They are less dangerous due to their low net weight and often slower motion sequences. The aim is for them to relieve their human colleagues by carrying out monotonous and ergonomically unfavourable tasks,

ensuring no mistakes are made. Typical fields of application are pick and place applications, the handling between different production steps or follow-the-line applications, where the robot has to precisely carry out a predefined path of motion, for example when cutting and portioning meat or decorating cakes. The challenge for food producers particularly lies in the optimal integration of the mechanical assistants into the production processes. This is made possible by automation platforms which unite high-precision mechanics, sensors as well as complex control and measuring technology in the tightest of spaces.

More safety thanks to sensory skin

The central distinguishing feature between the classic encased robot applications and the HRC is that possible collisions are part of the real scenario. The more intensively humans and machines work together, the stricter the safety regulations. In order to meet high demands, cobots are equipped with complex safety packages. Torque sensors in all axes ensure that the robots are sensitive. In this way they can recognise people and obstacles in the environment and react to them in real-time. The cobots are additionally equipped with capacitive, optical and tactile sensors. If a person approaches a robot, it will automatically reduce its speed – right down to the safe stop. The TX2 touch by Stäubli is representative for this type. Here a touch-sensitive surface ensures

that the six-axes robot stops when merely touched.

Ultra sensitive bionic grippers

Cobots are designed to take on tasks that up until now only the highest-performance grippers were able to master: the human hand. The engineers at Festo have let themselves be inspired by nature and have developed a gripper based on a tentacle. The Octopus Gripper is comprised of soft silicon that can be pneumatically controlled. As in the role model, two rows of active and passively regulated suction cups are attached to the inside of the tentacle. If the gripper is impinged with compressed air, it bends inwards and interlocks gently around the respective item. The application of such flexible grippers is conceivable in places where a large number of drinking bottles or food is handled – for example in plants where different batch sizes have to be produced within the shortest space of time.

Live demonstrations of robotics

Until the cobots assert themselves

big-scale, the food producers will profit above all from the established solutions that are on display at Anuga FoodTec. Robot companies, system integrators and suppliers of gripper and sensor technologies – they will all be flying their flags at the Cologne fairground. But solutions for efficient Industry 4.0 processes and smart factory scenarios are also under focus at the leading trade fair for the food and beverage industry. The special event Robotik-Pack-Line is the best example of collaboration between first-class technology partners from different disciplines. Under the motto 'Digital Robotics' the automatic line with a capacity of 80 strokes a minute will take over the complete packing process on-site – from primary, to secondary packing, through to the palletisation – including an inline leakage test and contaminant inspection. The theme robots in the food production sector will be addressed on the first day of the trade fair in the Resource Efficiency Forum (1:00 to 3:00pm).

Koelnmesse – global competence in food and FoodTec

Koelnmesse is an international leader in organising food fairs and events regarding food and beverage processing. Trade fairs such as the Anuga, ISM and Anuga FoodTec are established world leaders.

Koelnmesse not only organises food trade fairs in Cologne, Germany, but also in further growth markets around the globe, for example, in Brazil, China, Colombia, India, Italy, Japan, Thailand, the United States and the United Arab Emirates, which have different focuses and contents. These global activities enable us to offer our customers a network of events, which in turn grant access to different markets and thus create a basis for sustainable and stable international business. ■

Anuga FoodTec 2018
www.anugafoodtec.com/events



International
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COLOGNE, 20.–23.03.2018

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Fi Europe & Ni 2017 announces record number of exhibitors

28–30 November, Frankfurt

The world's leading food and beverage ingredients show will be bigger than ever when it opens its doors on 28 November. With its new Expo FoodTec Content Hub, amongst other highlights, the event will attract more visitors than ever before.



Fi Europe & Ni 2017 is the must attend event on the calendar of virtually everybody who works in the food, beverage and ingredients industry. This year, it will be the biggest show to date. With a record number of exhibitors, a four-day conference programme focused on thought leadership and new sections and initiatives, organiser UBM EMEA expects the event to attract more visitors than ever before, as well as ensuring they are senior professionals with considerable purchasing power.

Four halls spanning 65,000 square meters of exhibition space will give more than 1,500 suppliers a stage from which to showcase every conceivable food and beverage ingredient sourced from all over the world, including a vast range of functional and organic raw ingredients. Traditionally, suppliers use the global industry's leading

event to introduce their innovations to the market. Exhibitors and visitors will also benefit from the new Expo FoodTec Content Hub in the Expo FoodTec pavilion, uniquely focused on ingredient processing and packaging solutions for the food & beverage industry. The Expo FoodTec Content Hub is the hotspot where speaker sessions, presentations and videos from leading experts and associations will offer priceless insights on new developments in F&B processing and ingredients packaging.

Innovation on display

Across the event, visitors will be able to explore state-of-the-art innovations and gather insights into current food and beverage trends and developments. The Industry Insights Theatre will focus on current major consumer trends influencing the global food and

Fi Europe conferences offer an excellent opportunity to find out what leading food & beverage industry experts are thinking, working on and interested in

beverage market. Supplier Solutions Sessions will see top-level suppliers showcase their latest ingredients innovations, while the Start-up Innovation Challenge will create a platform for cutting-edge innovations from the industry's most exciting start-up companies. The New Product Zone, organised in cooperation with Innova Market Insights will return once again to Fi Europe and finally the Fi Innovation Awards are introducing a number of new categories to celebrate innovation

in the industry.

"Visitors to this event expect excellence and innovation," says Brand Director Richard Joyce. "And to make sure they do not miss the most exciting news this year, we have organised special Innovation Tours with industry experts from Nutrimarketing, as well as self-guided tours."

Four days of thought leadership

Fi Europe conferences offer an excellent opportunity to find out what leading food & beverage industry experts are thinking, working on and interested in. For 2017, UBM EMEA has announced a programme covering four full days of knowledge sharing and networking opportunities. One day before the show, on Monday 27 November, the Fi Future of Nutrition Summit will bring together independent food pioneers to explore cutting-edge innovations in nutrition. From Tuesday 28 November – Thursday 30 November, the Fi Conference will offer in-depth insight into the issues shaping the food and beverage landscape through a mix of keynote presentations, panel discussions and master classes. Topics covered will include: Clean label & Natural ingredients; Food safety & Regulatory compliance; Everything Protein; Health & Wellness; Life Stages; Category Innovation (Dairy, Bakery and Beverages); Reduction & Reformulation; and Sustainability.

Women's Networking Breakfast

On Wednesday 29 November the Women's Networking Breakfast will bring together inspirational women from all areas of the food industry and beyond to share their insight, knowledge and experience on topics covering innovation, entrepreneurship, and women's excellence in the food & beverage industry.

Messe Frankfurt – a perfect venue for an outstanding event

Having last been held in 2015, the biennial event returns to Messe Frankfurt, Germany for 2017. With

its international airport and central location, Frankfurt is a central hub for visitors from all over the world. "Germany is the largest food and beverage retail market in Europe," continues Richard Joyce, "and Frankfurt is the perfect venue for this truly impressive event: we are expecting around 25,000 visitors from more than 125 countries worldwide."

Flagship exhibitors will include global powerhouses such as ADM, BENEIO, Brenntag, Cargill, DSM, FrieslandCampina, Gelita, Kerry, Naturex, Roquette and Symrise, as well as leading European food and beverage manufacturers such as Barry Callebaut and Lactalis. Visitors can also look forward to exploring niche suppliers with an immense number of exciting ingredients. Fi Europe & Ni is FREE to attend when pre-registering online before the show. Early bird prices for the conference start at €450 for a One Day Pass and €900 for a Full Access Pass for the full four-day programme.

About Fi Europe & Ni

For more than 30 years, Fi Europe & Ni (Natural Ingredients) has been the world's leading food and beverage ingredients sourcing platform. Its unique influence is underlined by the fact that more than 25% of all annual food and beverage manufacturer ingredient procurement budgets are influenced by a visit to the show. The biennial event alternates with Hi Europe (Health Ingredients Europe).

About UBM EMEA

UBM EMEA connects people and creates opportunities for companies across five continents to develop new business, meet customers, launch new products, promote their brands and expand their markets. Through premier brands such as Routes, CPHI, IFSEC, Seatrade and many others, UBM EMEA exhibitions, conferences, awards programs, publications, websites and training and certification programs are an integral part of the marketing plans of companies



across seven industry sectors.

About Food ingredients Global – the trusted route to market since 1986

Food ingredients Global was launched in Utrecht, The Netherlands, in 1986. Its portfolio of live events, extensive data, digital solutions and high level conferences are now established throughout the world and provide regional and global platforms for all stakeholders in the food ingredients industry. Over 500,000 people have attended our shows over the years, with billions of euros worth of business created as a result. With more than 30 years of excellence, our events, digital solutions and supporting products deliver a proven route to market, with a truly global audience. For more information about the Food ingredients portfolio, please visit: www.figlobal.com. ■

Fi Europe & Ni 2017
www.figlobal.com

Sensient: Innovative taste modulation and masking solutions

It's all about better taste: Sensient Flavors showcases masking solutions for proteins, sweet solutions to support sugar reduction, its 'All natural Collection' of extracts and flavours – and with Petrichor and Cucamelon flavours, two industry exclusives.

Sweet Solutions

Sensient Flavors supports sugar reduction concepts in various beverage, bakery and dairy applications. The range helps to maintain the full sensorial perception in the end product, even if sugar is significantly reduced.

Without the need to change the labelling, Sensient

Sweet Solutions can help to create pleasant sugar reduced still or carbonated drinks, from tea-based to fruit-based and many more, as well as a wide range of sweet products such as cookies, wafers and biscuits and yoghurt.

Protein masking – for delicious functional products

As a major trend in the food industry, protein has many benefits and helps to enhance the nutritional profile of numerous products. But whether it's sports drinks, diet shakes or snack bars, the main challenge in product development is to mask the unpleasant taste that many proteins deliver. The experts at Sensient have developed innovative protein masking solutions that work with proteins from all sources as well as with protein blends. Using these solutions, manufacturers can improve the taste profile of their products by eliminating off-notes and even improving the unpleasant mouthfeel that some proteins display. The proprietary masking technologies allow for natural, non-GMO, allergen-free and kosher labelling – always in line with the customer's products and needs. ■



08.0C21

www.sensientflavors.com

GoodMills Innovation: 2ab Wheat for gut-friendly bakery products

GoodMills Innovation will introduce its new product 2ab Wheat, an ancient grain that is very well tolerated. This grain innovation is easy to process and allows both artisan and industrial bakers to produce wholesome bakery products with a convincing texture and taste. Thus, 2ab Wheat is a real alternative to modern bread wheat as well as to well-known ancient grains such as einkorn or emmer, which score neither with their sensory properties nor technologically when processed on their own. At its FiE booth, GoodMills Innovation will explain all about the properties and nutritional background of 2ab Wheat. In addition, trade fair visitors will be able to taste a broad variety of baked goods made from 2ab Wheat.

Thanks to its excellent baking properties, 2ab Wheat flour is ideal for artisan bakers as well as for industrial production. Baked goods are well tolerated, even by food-sensitive eaters, and convince with a full-bodied taste and a soft, lush golden crumb. Michael Gusko, Managing Director at GoodMills Innovation, says: "For me, 2ab Wheat is the wheat of the future. Bakers now have a tasty solution for customers who are sensitive to wheat or who prefer original grain varieties. We are in the process of introducing 2ab Wheat into the market, and initial feedback from bakers has been consistently positive. Having discovered an easy to digest, delectable bread for themselves, customers are staying loyal to 'their' bakers."

With increasing numbers of consumers turning away from modern bread wheat either for health reasons or because they prefer traditional products of well-known origin, GoodMills Innovation collaborated with scientists, grain breeders and nutritionists and selected the ancient 2ab wheat variety from hundreds of alternatives. Wheat-sensitive consumers and modern wheat critics had previously avoided wheat-containing baked goods or chose gluten-free options – often with significant drawbacks in terms of taste and texture. ■



Stand 11.0
F30

www.goodmillsinnovation.com

Taura: Sugar-reducing powers of fruit and vegetable pieces

Natural fruit and vegetable pieces are the ideal way to reduce added sugar without compromising on taste, Taura Natural Ingredients will demonstrate at Food Ingredients Europe.

The global ingredients company uses unique URC® (Ultra-Rapid Concentration) technology to create real fruit and vegetable pieces, flakes and pastes. It will demonstrate that its solutions offer the perfect way to reduce added sugar in applications such as baked goods and cereals.

Visitors to Taura's stand will be offered a 30% reduced added sugar cookie containing the company's real fruit pieces. They will be able to compare it with a full-sugar cookie and a reduced added sugar cookie without fruit pieces.

Peter Dehasque, Group Chief Executive Officer, Taura Natural Ingredients, said: "Reduced sugar products are increasingly common but they often leave consumers disappointed. Our unique fruit pieces are the ideal way to cut added sugar while still offering a fantastic flavour and texture experience. When people visit us at FIE they will see and taste first-hand that we offer perfect, natural, clean label solutions to the challenge of reducing added sugar."

The company will also be highlighting innovative flavour concepts that combine sweet and savoury flavours, including a mango chutney piece consisting of mango and spices. It will also showcase savoury versions of traditionally sweet products.

Peter Dehasque added: "Channelling consumers' craving for sweetness into savoury alternatives is an excellent sugar reduction strategy. By getting innovative with flavours, we can create a bridge from sweet to savoury." ■

www.tauraurc.com



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Ingredion: Top food and beverage trends

Ingredion is set to take its tasty trends on tour at this year's FiE. A range of delicious recipes will be available on stand, formulated with a number of its new ingredients, including clean taste pulse proteins, rice flours and clean label starches.

Many trends underpin the food and drink industry. These include growing demand for clean label and healthier products, recognisable and simple ingredients, nutritious snacks with reduced sugar and fat content and free-from products that also deliver on taste.

With these aspects front of mind, Ingredion will cook up a selection of high protein, high fibre, low-cost street food-style recipes, including falafel, chicken kebabs and lamb kofta.

Charlotte Commarmond, Senior Director, Marketing and Innovation, Ingredion EMEA, says, "The food and beverage sector faces more challenging and diverse demands today than ever before. Dietary requirements and lifestyle choices mean that food has to do so much more, creating an increasing demand for reformulation. However, it is vital that taste, texture and the overall eating experience is not compromised during this process.

"At Fi Europe, our Tour of Tasty Trends will show food and drinks manufacturers that they can overcome processing challenges and meet consumer and industry demands, while retaining the deliciousness of their products. Our on-stand concepts will tackle challenges including specific health and nutritional requirements, affordability and clean eating."

Featured in the chicken kebab and the lamb kofta, Ingredion's new clean label, potato-based functional native starch, NOVATION® Uno 190, can help manufacturers to improve yield by 10–20% and reduce costs. Suitable for processed meats, chicken nuggets and meat-based ready meals, the new functional potato starch improves processability and increases water binding for a firmer and juicier texture. ■



www.emea.ingredion.com

Omya: Many ingredients, multiple solutions

Omya will highlight its versatile range of natural calcium carbonates. These can be used as fortification agents, white pigments, bulk providers, extrusion aids and anti-caking agents. Additional ingredients from the company's huge distribution portfolio enable holistic one-stop solutions for industries like pet foods, savoury products and nutraceuticals.

From food fortification to extrusion

Omya's products, bundled together under the Calcipur® brand, have a very high elemental calcium content – approximately 40% – making them among the most concentrated sources of calcium on the market.

As such, they are efficient fortification agents that can be used to enrich baby products, vegan drinks, bakery produce, snack bars and breakfast cereals. Depending on the dosage used, calcium-related claims can be included on pack. Furthermore, Calcipur® acts as a white pigment and can replace titanium dioxide in applications such as chewing gum coatings. Chewing gum masses and icings for cakes and cookies also benefit from its bulking property. When it comes to icings, this allows manufacturers to reduce the icing sugar content and hence the calorie count of their brands. In the production of extruded snacks, Calcipur® facilitates the formation and homogenous distribution of fine gas bubbles, influencing the extrudate's expansion and texture. Plus, thanks to its refractive index, the ingredient has successfully been shown to significantly improve overall opacity and contribute to an appealing appearance in a multitude of products.

Effective anti-caking

Calcipur® is also an ideal anti-caking agent that keeps powders flowing freely, making processing and precise dosing much easier. Providing a range of coarse particles, Calcipur® improves both the flow and the bulk density of powders without dusting and offers faster flow rates than silicates. ■



www.omya.com

Corbion: Innovative ingredient portfolio for preservation, safety and taste

Corbion, a world leader in bio-based food ingredients, will use FiE 2017 as a platform to showcase its innovative – and expanding – range of solutions for savoury foods, meat, confectionery and fresh produce. The company will unveil new ingredients for natural, clean label preservation and longer shelf-life as well as giving insight into exciting new tastes for confectionery. In line with its 'Keep Creating' ethos, Corbion pioneers the development of ingredients that enable food processors to offer safe, convenient and delicious products to a diverse and demanding market.

Natural preservation is a major theme at this year's show. For producers of ready-to-eat salads, which continue to show strong growth and diversification throughout Europe, Corbion will highlight a new clean label natural preservation solution that eliminates the need for artificial preservatives such as sorbates and benzoates. In savoury foods like deli salads, the company's Verdad® range is a tried, tested and trusted antimicrobial that keeps foods at their best for longer while also naturally enhancing the product's flavour profile. Based on natural fermentation, Verdad is an excellent choice for food manufacturers responding to the 'clean supreme' trend, identified by Innova Market Insights as the top driver of the industry in 2017.

The solutions Corbion keeps creating for sugar confectioners help them develop new products with high stability and sourness levels that focus on creating new distinctive and surprising sour profiles which consumers would enjoy. Its PURAC® Powder range, used by some of Europe's most innovative confectionery manufacturers, enables clean, long-lasting sourness and stability in both hard and soft applications. Highlights at FiE 2017 for the premium category will be PURAC Powders for soft, stable, homogeneous chewy products with an instant sour flavour release and excellent flavour stability, and new additions to the collection that facilitate even more diverse profiles.

For meat and poultry processors, Corbion will demonstrate how its innovative, multifunctional solutions achieve shelf life and food safety goals while delivering the product attributes most important to their target consumers. The company's unique and versatile portfolio including Verdad, Opti.Form, Purasal, PuraQ Arome and Purac, gives manufacturers unmatched flexibility in creating clean-label, reduced sodium, high quality products with desirable tastes and textures that stay fresh and safe throughout their shelf life. ■

www.corbion.com



IOI Loders Croklaan: Reducing saturated fat, keeping great taste

IOI Loders Croklaan will exhibit its innovative Oils & Fats portfolio highlighting two lines:

Couva® Cocoa Butter Replacers deliver non-hydrogenated coating solutions that provide excellent sensory properties and support extended shelf life. They help improve productivity, and have an excellent cocoa butter compatibility.

The new shea- and coconut-based filling fat line offers sustainable, reduced saturated fat advantages. These unique, patented blends meet food manufacturer requirements for non-temper applications, at less than 40% saturated fatty acid content. They're ideal for creating indulgent deserts, spreads, pralines, wafers or countlines, without compromising on flavour.

The company will also showcase its Fi Innovation Award submissions: Creamelt® 600 LS, a low-saturated filling fat, and a new shea-based shortening in the Presdough® range, ideal for increasing puff in raised bakery products.

IOI Loders Croklaan is a trusted global producer and supplier of high-quality oils and fats dedicated to sustainable practices in all aspects, from choice of raw materials to building a transparent and sustainable supply chain. The company works closely with its customers to develop tailor-made solutions. ■

www.loiloders.com



Rousselot: Gelatin's unlimited possibilities

Creating appealing products which meet current consumer trends is a top priority for food and beverage manufacturers across the industry. At this year's Fi Europe, Rousselot will highlight how its leading gelatin range can help formulators to achieve optimal taste, texture and appearance in a variety of end applications, while answering the demand for clear label solutions. Also on show will be Peptan® collagen peptides for mobility and skin beauty. Visitors will be able to learn more about the science behind Peptan's multiple health benefits as well as speak to the team on complex formulation challenges and brand support.

Gelatin: Achieving the perfect texture for maximum enjoyment

Throughout the three-day event, Rousselot will showcase its gelatin solutions for the production of clear label foods and beverages, with perfectly adjusted textures. Experts will highlight how gelatin can create an endless range of textures by playing with characteristics such as gel strength and viscosity, gelatin types, concentration and recipes. Along with its market-leading ingredients, Rousselot offers worldwide expertise to ensure that end-products meet the highest quality and safety standards. Visitors will also be able to sample a variety of cocktails, which demonstrate gelatin's ability to improve taste, mouthfeel and appearance in beverages.

On 28th November between 11.20am–11.50am in the Discovery Theatre, Dr Paul Stevens, global research and application director at Rousselot, will host a presentation titled: Gelatin: the all-in-one solution for clean label, indulgence and surprising textures. The session will cover growing trends across the industry and how gelatin helps to answer these trends as well as key innovations from the marketplace. ■

www.rousselot.com www.peptan.com



Hall 8
Stand J11

Lycored: A'pizza' the action

Natural taste and colour specialists Lycored have created a range of recipes, including a home-style pizza, to highlight the versatility of their real food ingredients from tomatoes.

The recipes will demonstrate how Lycored can help clean up labels while enhancing taste and consumer appeal.

They include a home-style pizza, created with an artisanal bakery in Bergamo, Italy. Its base is low in salt but still delivers a delicious flavour thanks to SANTE – Lycored's tomato-based flavour enhancer.

It is topped with tomato sauce designed by an Italian application specialist and enhanced with both SANTE and Lycored's CTC (Clear Tomato Concentrate). CTC is a liquid serum that harnesses the balance of acidity and sweetness found in tomatoes to bring smoothness and complexity to savoury products such as soups and sauces. The pizza sauce will demonstrate its power to intensify the tomato character of tomato-based foods.

SANTE and CTC are both excellent solutions for manufacturers seeking clean label status. Both can be declared as consumer-friendly 'tomato concentrate' or 'natural flavour', depending on local regulations.

Lycored will also highlight the versatility of its ingredients in the condiment category. It has created a special BBQ sauce, as well as a vegan mayonnaise concept that shows how SANTE can help manufacturers target vegetarian or vegan consumers with improved tasting products. ■



Hall 8
Stand A70

<http://connect.lycoredfoodhub.com/dreamteam/>

GELITA: The power of SMART TECHNOLOGY

At this year's FiE GELITA is focusing on two smart technological solutions based on collagenous proteins. The leading manufacturer of gelatine and collagen peptides will highlight the various benefits of its novel 'Fast Forward Process' and 'Particle Engineering' – both of which belong to the company's SMART TECHNOLOGY portfolio.

The new Fast Forward Process demonstrates the power of cross-business development and revolutionizes gelatine gummy production. The novel solution comprises an innovative gummy formulation from GELITA, an innovative cooking process developed by Hänsel Processing GmbH and a new depositing line from WDS (Winkler und Dünnebier Süßwarenmaschinen). The starch-free production method uses reusable silicon moulds instead of traditional starch trays, creating significant added value for customers by shortening the gelatine gummy manufacturing time from two days to just one hour, lowering costs and providing a cleaner working environment.

Furthermore, GELITA has turned its established range of collagen peptides into enhanced ingredients with additional benefits. Both Collagen Peptides ST and HST exhibit improved process performance, namely less dust during handling, fewer clumping issues during dissolution, improved wettability and higher bulk densities. The HST version even offers the best of two worlds: Bioactive Collagen Peptides® with gelling power. For the customer, this means improved production, optimised machinability and the ability to develop new and exciting products.

GELITA's technical, nutritional and market experts will be at the booth to inform visitors about the company's SMART TECHNOLOGY solutions. In a presentation on Wednesday 29 November, 12:00 pm at the Supplier Solution Sessions, GELITA will uncover in-depth insights into the new Fast Forward Process. ■



Hall 8
Booth C51

www.GELITA.com

NEW The solution to wheat sensitivity!

2ab Wheat

THE TUMMY FRIENDLY ANCIENT WHEAT

EXPERIENCE THE DIFFERENCE!

Visit us at
FiE Frankfurt
28.-30.11.2017
Hall 11.0
Booth F30

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2ab Wheat is the first tummy-friendly ancient wheat where the consumer can really experience the difference! It is an alternative to many highly cultivated wheat varieties and even spelt.

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T +49 40 75109-666
2ab@goodmillsinnovation.com



www.2ab-wheat.com

GEA: Technology and expertise

GEA's technical and sales staff will be on the stand to present the company's range of technology for the manufacture of food ingredients, freeze-dried food and coffee. The technology includes high-shear mixing, a wide range of dryers (solid feed drying, spray drying, fluid bed drying and freeze drying) and fully-integrated process lines, all designed to meet the industry's strictest requirements for hygienic design, product quality, plant efficiency and safety, and sustainable production. GEA's expertise spans every stage of food ingredient processing from reception and bulk handling through liquid and powder processing, automation and packaging services.

GEA MOBILE MINOR® spray dryer suitable for R&D departments

The stand will feature GEA's trusted MOBILE MINOR® R&D spray dryer, designed to produce small-volume powder samples that can be faithfully scaled up to production volumes. This flexible and easy-to-handle spray dryer has become standard equipment in the R&D departments of many leading manufacturers, independent research institutes and universities worldwide. Its inclusion on the stand will allow GEA to explain the processes involved and demonstrate how GEA can help customers achieve their objectives.

Since its introduction, the MOBILE MINOR® has gone through much evolution to keep it ahead of its competition. It has always been recognized as the industry standard for small-scale spray drying equipment. It was originally introduced over 60 years ago and GEA has sold almost 2,400 units to R&D establishments worldwide to test processes and products ahead of full-scale production and to produce small samples of product for customer evaluation. It owes its dominant market position to its inherent flexibility that makes it ideal for a wide variety of applications and capable of being adapted as production schedules change. The unit is also available with closed cycle operation for use with organic solvents; as a pharmaceutical version, the PharmaSD™, type PSD-1; and as an IFD™ (Integrated Filter Dryer) version. The MOBILE MINOR® is available with three different atomisation techniques that provide different drying characteristics and droplet sizes from 5-80µm (micron (10-6)): rotary atomization; atomization by a co-current two-fluid nozzle; and atomization by a counter-current two-fluid nozzle.

The new MOBILE MINOR® MM-100

The new MOBILE MINOR® MM-100 offers highly efficient powder separation, increased capacity, improved yield and better safety features.

Highly efficient powder separation

The latest version of the MOBILE MINOR® spray dryer from GEA is the MM-100. This offers an improved design, the same compact footprint, and with the new, highly efficient cyclone CEE (Cyclone Extra Efficiency). The newly developed cyclone CEE offers a higher separation efficiency, which increases the yield and reduces emissions. In real life tests, the CEE powder separation efficiency was verified as being considerably higher than the efficiency of standard cyclones. All comparisons were made with the same pressure loss over the units. The efficiency was tested for a range of particle sizes, air flows and powder loadings and superior performance was verified for all combinations. The MOBILE MINOR®

Stand
08.0Q5



MOBILE MINOR® R&D spray dryer designed to produce small-volume powder samples that can be faithfully scaled up to production volumes

Special features of the MOBILE MINOR® MM-100

- Process gas flow up to 100 kg/h at 200°C for increased capacity
- Accurate gas disperser for minimising powder deposits
- High capacity HEPA filters for baby food or hazardous chemical applications available
- Powder collection glasses in sizes from 250–3500mL can be supplied as standard.
- The universal gas disperser for the rotary atomizer as well as the two-fluid nozzle can easily be exchanged with an optional low velocity gas disperser – which has a similar flow pattern to the DPH gas dispersers used in larger PharmaSD™ spray dryers – for nozzle atomization.
- Powerful supply blower with flow indication
- Easy to remove and clean laser-cut gas guides (patent pending).

is known worldwide for being robust, reliable, versatile, and easy to use, clean and move (see side bar for more special features).

Increased capacity

The new MOBILE MINOR® MM-100 can operate with a process gas flow rate of up to 100kg/h at an inlet temperature of 200°C, which, for many products, means a 30% increase in powder production compared with the current version. High capacity HEPA filters, eg for baby food or hazardous chemical applications, are available and powder collection glasses in sizes from 250mL to 3500mL can be supplied as standard.

Increased yield

An accurate hot drying gas flow pattern is key to minimising powder deposits. Computational fluid dynamics (CFD) modelling and cutting-edge manufacturing technologies have been used to ensure a high level of precision. The universal gas disperser for the rotary atomizer, and the two-fluid nozzle, can easily be exchanged with an optional low velocity gas disperser dedicated for nozzle atomization. Laser-cut gas guides are easy to remove and clean (patent pending).

Easy to clean

The MM-100's drying chamber lid now features an O-ring, which is available in a variety of materials. The new optional two-fluid nozzle has been designed to facilitate and reduce cleaning, and ensure reproducible assembly.

Safety first

The MOBILE MINOR® can be adapted to meet the processing needs of many products and applications. Safety is, however, always a priority. When producing inert powders with a water-based feedstock, the MOBILE MINOR® Standard — with a blower, heater, drying chamber, cyclone and optional cartridge filter — is ideal.

As some air-suspended powders can constitute an explosive atmosphere, the MOBILE MINOR® can be manufactured to be pressure shock resistant (PSR) and the drying chamber includes an explosion venting panel. A flame arrestor can be supplied for use in rooms without an external explosion venting duct.

Alternatively, explosive powders can be spray dried using nitrogen as the drying gas (MOBILE MINOR™ I). The blower is replaced with a valve arrangement for nitrogen process gas and compressed air is used to purge the plant before opening. Such a system can also be used for solvent-based feeds. All instrumentation, including the feed pump, must be EEx rated for solvent-based applications.

For continuous nitrogen gas-based applications, a closed-cycle (MOBILE MINOR® CC) loop is recommended, in which most of the nitrogen is recirculated and the evaporated solvent is collected under the condenser.

Focused on customer benefits

But the GEA stand at Fi Europe will be about much more than technology. It's the way in which GEA uses its experience to apply the technology in creative and innovative ways that is key. Whatever the complexity or scale of process line or plant, GEA's industry experts, technical specialists and project managers work with each customer at every stage to tailor the right solution, from initial consulting and planning through to installation and commissioning.

By calling on the combined expertise of the whole Group, GEA works with customers to help them refine existing processes and develop new products that can be brought to market quickly and profitably. Using its test centers in , and the , GEA gives customers the opportunity to experiment with real equipment before investing in production lines, thereby helping to ensure the security of outcome right from the start.

Solutions for vegetable protein manufacturing

Sarah Veelaert, Sr. Process Engineer at GEA will present an insight into the latest developments in the production of vegetable proteins entitled: 'Vegetable protein powders for high-performance dispersibility'. During the presentation, Sarah Veelaert will focus on GEA's activities to develop process solutions for vegetable protein manufacturing with special emphasis on design of the spray dryer to generate powders with an improved dispersibility, in particular for use in protein drinks. The seminar will take place on Wednesday, November 29, 2017, 3–3.30 pm. ■

Taiyo GmbH: Innovative functionalities for enhanced products and processing

Taiyo GmbH, known for its broad portfolio of functional ingredients, including soluble fibres as well as superfruit, green tea and coffee extracts, puts its FiE focus on innovative technical agents and its microwave-dried range of crunch products – which are much more stable than their freeze-dried counterparts.

Mueslis, cereal bars and confectionery products are often topped with freeze-dried fruit components. However, these are extremely sensitive and tend to crack during processing or storage – which is why in muesli bags, these types of fruit pieces are only added on top of the mix and cannot be homogeneously blended in. With its microwave-dried crunches, Taiyo offers a crispy alternative in different variants. The strawberry or lemon crisps are highly stable, and deliver a pleasing crunch as well as visual appeal in the end product. For trend products, the matcha crisps are a perfect addition, and egg crisps are delicious in soups and other savoury products. For vegan solutions, there is also an egg-free variant.

Taiset is an innovative fat stabiliser with various functionalities and benefits. Since most valuable and healthy oils are liquids, when they are hardened, they have to be hydrogenated, which creates trans fatty acids. With Taiset, high quality oils with high levels of healthy Omega-3 fatty acids can be stabilised to a nicely spreadable mass – and retain their full Omega-3 content without any loss of quality. When used in cream toppings and fillings, Taiset acts as a stabilising agent and maintains the sharp contours of the product for an appetising look – and puddings and flans keep their original shape when served on a plate and do not melt at room temperature.

With AwaBreak, Taiyo offers a silicone-free anti-foaming agent that has multiple benefits during processing and in the end product. In beverage production especially, foaming is an issue. AwaBreak stops foam formation during processing and, in contrast to many other anti-foaming agents, it is silicone-free. When used as an ingredient in effervescent, it can prevent the undesirable effect that occurs when certain ingredients are dissolved and create an unappetising, turbid foam. ■



Hall 8
Booth H67

www.taiyogmbh.com

Carbery and Synergy Flavours: Innovation in nutrition and flavour solutions

Leading whey protein provider, Carbery, and its flavours division, Synergy, will showcase their unique joint expertise in delivering advanced nutritional and flavour solutions.

Carbery will be highlighting the latest addition to its successful hydrolysed whey protein range, Optipep®, which has been specially formulated for use in protein bars, where it delivers a softer texture throughout shelf life. Synergy will be showcasing its new signature cold brew coffee, which is typically brewed at 4°C and is distinctly different from hot coffee brewed in a coffee machine. Naturally sweet and highly concentrated, Synergy's cold brew coffee is on trend with the growing retail and foodservice markets.

As well as raspberry and white chocolate Optipep bars, visitors to the stand will also have the chance to taste high-protein ready-to-drink (RTD) beverages, protein water with new refreshing cooling flavour combinations such as cucumber and apple, a high-protein berry smoothie and soft-serve protein ice-cream with warming flavours such as gingerbread biscuit. The concepts on show will highlight how Carbery and Synergy are able to marry their joint expertise in nutrition and flavour to help food manufacturers deliver high quality protein enriched foods with broad consumer appeal.

On day 2 of the show, 29th November, the Carbery and Synergy team will be hosting a presentation from the Mintel market insights team at 15.45. This will be followed by a cocktail party where guests will be able to enjoy some Synergy cocktails freshly made with a range of coffee and contemporary gin flavours. ■



Hall 8
Stand Q65

www.synergytaste.com www.carbery.com

SVZ: Celebrating 150 years of experience

SVZ, a leading supplier of premium fruit and vegetable ingredients, is celebrating 150 years of expertise at this year's Fi Europe. The company will be showcasing its premium portfolio of high-quality, natural fruit and vegetable purees, juices and concentrates.

SVZ's wide range of ingredients, from raspberry and strawberry purees to spinach and carrot concentrates, is cultivated in the world's finest growing regions for a variety of applications, from beverages and baby food to dairy products and baked goods. Visitors to the stand can sample SVZ's natural and nutritious ingredients, either on their own or in the form of a specially-made cocktail, while accessing the agro supply chain, sustainability and applications knowledge of the SVZ experts.

An increasing number of consumers demand healthy and clean label products that are traceable too. "At FiE 2017 we will not only be discussing our passion for and dedication to premium fruit and vegetable ingredients and our long-standing sustainability credentials, but also how our portfolio and expertise can help food and beverage manufacturers today. From clean label, natural and minimally processed to healthy and reduced sugar, consumers have more demands than ever before and we are well-placed to help our customers meet these needs with innovative, natural formulations." explains Johan Cerstiaens, Sales Director at SVZ.

SVZ's long-standing heritage in the global fruit and vegetable agro supply chain and its passion for embracing the uniqueness of every single ingredient has made the company a true expert in the field. With a key focus on providing supply chain transparency from the seed to the end product, it offers international food and drink manufacturers premium ingredients that differentiate and add value to their products. ■



Stand
08./L50

www.svz.com

TAIYO – TRADITION IN FUNCTIONAL FOOD AND HEALTH INGREDIENTS

VISIT US AT
FIE/NI 2017
FRANKFURT
HALL 8, H67

- ✓ Chia Oil
- ✓ Zhejiang Matcha
- ✓ Greentea extracts (SunPhenon®)
- ✓ Soluble Bean Fiber (Sunfiber®)
- ✓ Indian Gooseberry (SunAmla®)
- ✓ Foambreaker Silicon-free (Awabreak®)
- ✓ Natural Preservatives (E-No. free)
- ✓ Emulsifiers (Sunsoft®)
- ✓ Fat-Stabilizers (Taiset®)
- ✓ MD Products (fruits, egg, protein, fiber)
- ✓ Whole Green Coffee Powder (WGCP®)
- ✓ Minerals (Iron, Zinc)
- ✓ CoQ10, 100 % Water Dispersible



European Representative TAIYO GmbH · Mittelstr. 36 · D-58332 Schwelm
Phone: +49(0)2336 9150219 · Email: info@taiyogmbh.com · www.taiyogmbh.com

Sternmaid: Blending, filling, packaging –an all-round service from a single source

The contract manufacturer SternMaid will be introducing itself as an expert in blending, optimising and filling food ingredients and supplements in powder form. Premixes, trial blends or sensitive applications – when it comes to compounding powders, the company can rely on comprehensive know-how and the latest technical equipment. In co-packing, the focus this year will be on retail packs and the new option of filling products into stand-up pouches. Besides its technical solutions, SternMaid will also present its wide spectrum of services.

In food production, blending is often one of the key stages of the process and plays a crucial role in the quality of the end product. SternMaid is in an excellent position to carry out customer orders of this kind and subsequently fill the powders into many of the usual retail packs. Moreover, the contract manufacturer offers the entire service chain, including purchase of the raw materials, packaging, warehousing and delivery – all from one source. Customers can either take advantage of the whole package or choose individual modules, according to their needs.

Extended co-packing offer

In order to respond even more flexibly to customers' wishes, SternMaid invested in a Doypack line at the beginning of this year. That means the co-packing service provider can now fill products like dry beverage bases, superfoods, dietetic drinks in powder form or products for athletes into ready-made stand-up pouches, with or without a zipper, and three- or four-edge seal bags. Besides retail packs, industrial containers such as sacks, fibreboard boxes, drums or FIBCs can be filled, too.

Contract blending

For contract blending, the company has three lines for small and medium-size orders between 100 and 10,000kg and four other lines for large quantities over ten tonnes. Allergen-free foods and other sensitive products can be processed on a counter-current container blending line in a separate section of the plant. Moreover, liquid components can be sprayed onto the powder homogenously on all the lines through special nozzles. Microcomponents like flavourings, oils and emulsifiers and even highly viscous liquids can be dispersed evenly in this way. ■

www.sternmaid.de/en



Arla Foods Ingredients: Whey protein's role in 'Nutrition For Life'

Arla Foods Ingredients will unveil a campaign called 'Nutrition For Life'.

Arla Foods Ingredients will showcase how whey protein delivers important health benefits to people at all stages of life, from babies and toddlers, through to seniors. The new campaign places a particular focus on applications in paediatrics, health foods and medical nutrition.

Taking centre-stage will be innovative whey-based ingredient solutions created for the complementary feeding and blood sugar control categories. The new concepts will highlight the potential for developing products that provide excellent taste, convenience and nutrition at different life stages.

Manel Romeu Bellés, Marketing Manager at Arla Foods Ingredients, said: "Whey's unique selling point is that it can be used to create ingredients that support consumer health from infancy to adulthood and right through to retirement and beyond. Food manufacturers are in the perfect position to harness this strength, and help consumers manage their health with tasty products made with whey-based ingredients that deliver targeted nutritional needs at each life stage. At FIE 2017, through Nutrition For Life, we will be telling the stories about how this can be done using our portfolio of high quality whey protein ingredients." ■

www.arlafoodingredients.com



Stand
o8.oC41

Worlée: Experience product innovation live

Worlée NaturProdukte continues to shine its spotlight on innovation as the end of the year approaches. The company just celebrated the opening of its new R&D competence centre in Hamburg in September. Late autumn will see the commencement of operations for Worlée and Scelta's joint venture: The Mushroom Dryers, a new production facility for European dried champignon mushrooms.

At this year's Food Ingredients Europe Worlée will present not just these new developments but also its wide-ranging product portfolio of dried natural raw materials with interesting product highlights.

As a response to the growing demand for customer-specific formulations and new application ideas, Worlée has expanded its research and development facilities with a new R&D competence centre consisting of a technical centre, show kitchen and tea development laboratory.

At FIE 2017, industry experts visiting Worlée's exhibition stand will get a look behind the scenes at the new R&D competence centre and have the chance to observe our development team at work at the tasting counter. Visitors will have the opportunity at this tasting counter to try out a selection of raw materials in their finished end product form. The design of the Worlée stand is a clear indicator that the 'pop star of mushrooms' – the champignon — has a particularly important role to play this year for the mid-sized company. The increasing market demand for high-quality, pesticide-free champignons with short supply chains has led to the founding of the joint venture 'The Mushroom Dryers' by Worlée together with its long-standing business partner Scelta Mushrooms. The Mushroom Dryers is a production facility in the Netherlands (Belfeld) through which Worlée can offer dried champignon slices in European quality. This factory is unique in that it features its own self-developed belt dryer. The result: air-dried champignon slices from fresh, hand-harvested European champignons with a quality that is simply incomparable. Finally, the dried champignon slices are sent to the Worlée factory in Hamburg for refining and processing. This refinement method includes bacteria reduction treatment (EVW) as well as a state-of-the-art mechanical and manual cleaning process. This process chain ensures Worlée's compliance with European quality standards.

But that's not all: at our exhibition stand, visitors will get an overview of Worlée's wide-ranging product portfolio of natural dried raw materials. Along with the newest items, this naturally include classics such as dates, peppers or porcini as well as so-called superfoods. Along with plant-based raw materials from local sources, Worlée also offers a wide variety of exotic superfoods such as chia seeds, goji berries, quinoa or aloe vera. Overall, Worlée carries more than 50 superfoods in organic and conventional quality. ■



Stand 11.0A
104

www.worlee.de/foodtechnologycentre

Algaia: Algae extract for creamy, low-fat desserts

Algaia, S.A., launches its revolutionary texturising ingredient derived from algae. The ingredient marks the latest technology for formulating low-fat, yet rich and creamy dairy desserts. The company also introduces a line of innovative alginates developed for making edible films. The ingredients are suitable for vegan foods and have been successfully tested in sports drink applications as well.

Visitors to Fi Europe are welcome to sample these innovations.

With a range of alginates, carrageenans, natural seaweed extracts in active ingredients and customised solutions, Algaia brings next-level texturising and functional benefits to the food, supplement, personal care and agriculture industries. The company processes local fresh seaweed and extracts valuable bioactives at its modern, 'clean & green' facility.

Algaia is a fast-growing biomarine company headquartered in Paris, with an R&D center in Normandy and production facility in Brittany (close to the second-largest harvested fresh seaweed biomass in continental Europe).

The company is ISO 9001- and FSSC 22000-certified, with most of its product line certified kosher and halal. ■



Booth
#11.1F10

www.algaia.com

DSM: Healthier breakfast options

DSM will highlight its range of nutritional and functional ingredients that contribute to health and wellness for more people around the world at this year's Food Ingredients Europe (FiE), with a special spotlight on better breakfasts at home and on-the-go. In a new study focused on breakfast habits around the globe, DSM explores just how many consumers are eating a healthy breakfast, and looks for the innovation opportunities for the world's best loved breakfast products.

Flavored yoghurt is a popular breakfast option worldwide, but can be high in sugar. According to DSM's research, more than 60% of global consumers are choosing to reduce the amount of sugar they consume in their dairy products. To help achieve this goal, DSM has an enzyme- and culture-based concept on offer. With Maxilact® and Delvo®Yog, the sweetness that is naturally present in dairy products can be doubled while providing enhanced taste and texture. On the DSM booth, visitors can see and taste a flavoured yoghurt with reduced sugar that maintains an optimal sensory profile. DSM's Fi Innovation Award-nominated cheese culture, Delvo®Cheese CT Light, designed to improve taste and texture in low fat cheeses is also showcased.

Nutrition is an important concept at breakfast, and the meal represents a key opportunity for manufacturers to address consumers' nutritional requirements. However, Euromonitor research shows that almost 30% of consumers spend less than five minutes preparing breakfast each day, so need products that are nutritious, but fast. At the show, guests can collaborate with experts from DSM's custom nutrient premix service, Fortitech® Premixes, to create their own customised formulations for use in their breakfast products. Using a blend of functional ingredients, these unique mixes can help to boost nutritional status while also meeting consumer demands for convenient, on-the-go breakfast products. ■

www.dsm.com



Stand
08.0C62-
08.0A.61

BENEO: Celebrating 10 Years of connecting nutrition and health

BENEO will be celebrating the young company's 10-year anniversary at FiE 2017 in Frankfurt. Originally launched at FiE 2007 in London, BENEO has since focused on delivering its brand promise to contribute to better nutrition and health for people and animals. This year, BENEO will be exhibiting at FiE once again and will be using the show as an opportunity to celebrate this important company milestone together with its customers and business partners.

A range of new functional ingredient product concepts will be on display at FiE. In addition, to mark its anniversary, BENEO will be inviting visitors to get involved in a surprise activity and birthday celebration on its stand. In keeping with the 10-year anniversary theme, Mintel director of innovation and insight, David Jago, will be looking ahead with a presentation on what to expect from the next decade in terms of food and beverage trends.

Over the 10 years since BENEO was formed by the established and highly specialised industry players, Orafiti, Palatinit and Remy, the company's influence has continually grown. It is now represented in more than 75 countries and has over 900 employees in seven offices and five-- production sites. Today, the BENEO-Institute and BENEO-Technology Center, which were created shortly after BENEO's inception, offer customers and the wider industry insights into nutrition science, legislation and provide expert advice on application technology. BENEO's continued investment in scientific research substantiates the technical and nutritional effectiveness of its functional ingredients and has resulted in a remarkable range of EFSA health claim approvals being awarded.

Dominique Speleers, Member of the Executive Board at BENEO, comments: "We are proud to have met and exceeded customer expectations over the past decade. FiE 2017 provides us with the perfect platform to celebrate the company's accomplishments". ■

www.BENO.com



Hall 8
F61

Cheers to health, energy and wellness

Taiyo offers innovative ingredients for holistic beverage concepts

Looking at today's consumer needs, they want beverages that are natural, offer both health benefits and added functionalities, and taste great. What's more, they want it all in one bottle! With its range of functional ingredients, Taiyo offers many new ways to provide fibre enrichment, vitamin and mineral fortification, the benefits of phytosterols and antioxidants – and a gentle energy boost – in just one product. With its portfolio of superfruits, tea extracts, fibre products and many more, the Japan-based ingredients specialist is an expert developer of holistic concepts that convince both manufacturers and consumers.

The 'Perfect Tea' concept

Tea is the most popular drink in the world, and products containing tea-based ingredients are on the rise. With Sunphenon® Instant Teas, Taiyo offers the ideal base for delicious drinks with added functionalities that are convenient to prepare and retain all the beneficial properties of tea. Using a solvent-free, double water infusing brewing process that utilises 1kg of tea leaves per every 20L of water, Taiyo's instant tea extracts contain far higher levels of amino acids and polyphenols than could be achieved by traditional tea brewing at home.

The result is a highly soluble powder that delivers a perfectly rounded, full-flavoured tea taste in hot, cold and ice-cold water without any bitterness. Available in specially selected Black, Green and White Tea, Oolong, Matcha and Pu-Erh variants, these extracts can be combined with active ingredients, sweeteners and different flavourings and packed in sticks or jars. Alternatively, they can be used to manufacture tea-based RTD beverages or sports and wellness drinks, providing the perfect base as well as added health benefits

Megatrend fibre enrichment

Paying tribute to one of today's biggest nutrition trends, Taiyo

offers fibre enrichment solutions for both food products and drinks. Because of today's modern eating habits and taste preferences, many Western consumers aren't eating enough whole grains, legumes, fruits or vegetables, which are important sources of dietary fibre. Therefore, the fortification or supplementation of foods and beverages with dietary fibre offers a promising approach to improving fibre intake.

By combining Sunphenon® Instant Tea powders with Sunfiber®, a fibre-enriched tea drink can be produced that makes adding fibre to daily diets easy and delicious

Taiyo has pioneered dietary fibre research for more than 20 years. Offering new ways to close the fibre gap, its Sunfiber ingredient provides a simple way to increase everyday fibre consumption, combining an excellent taste profile with all the nutritional benefits and health-boosting properties of dietary fibre. Sunfiber® is made from a naturally occurring raw material, indian guar beans, which is suitable for use in

a variety of foods and beverages and has no organoleptic impact on the flavour, colour, consistency or aroma of the products to which it's added. By combining Sunphenon® Instant Tea powders with Sunfiber®, a fibre-enriched tea drink can be produced that makes adding fibre to daily diets easy and delicious. This so called 'Fiber-Tea' concept is the ideal fibre source for all target groups.

Adding vitamins and minerals

Fortified functional drinks are highly popular, but not all micronutrients and minerals are easy to incorporate, nor are they naturally highly bioavailable. Often, the challenge is that iron, fat-soluble vitamins and coenzymes can be highly reactive and have undesirable side-effects. Taiyo's delivery system, SunActive®, facilitates the processing of micronutrients and minerals and, at the same time, improves the sensory properties and reduces unwanted taste issues. With SunActive®, the dosage levels of some nutrients can actually be reduced, and minerals such as iron, for instance, become far better tolerated.

The high reactivity of iron means that iron fortified products oxidize very quickly; they turn an unsightly brown colour and produce an intense metallic flavour that's difficult to mask. A far greater

disadvantage, however, is the low tolerability, as iron ions react in the gastrointestinal tract and often cause irritation or lead to hard, black stools, constipation and intestinal cramps. As a solution, SunActive® Fe is a highly bioavailable iron compound that's available in various concentrations, all of which are very gentle, well tolerated, less likely to cause colour changes and free from the typical 'iron taste'. From the same camp, SunActive® Q10 E is a patented Coenzyme Q10 delivery system that overcomes solubility issues: it enables food and drinks to become effective Q10 suppliers. SunActive® Q10 E makes Coenzyme Q10 easily dispersible in water and increases its bioavailability by impressive 320 per cent. Neutral in flavour with a light colour, it has an orange juice-like appearance.

WGCP® reaches the bloodstream quite gradually and provides the body with sustained energy without the negative side-effects associated with caffeine consumption

Long-term energy without the 'crash'

Energy drinks are still as popular as ever, but many users are all too familiar with the 'boost & crash' effect they deliver. Health-conscious consumers and women in particular are looking for a gentler source of that much-needed energy. With Whole Green Coffee Powder® (WGCP®), Taiyo offers an alternative to caffeine. Ideally suited for functional drinks with a natural or wellness positioning, the finely ground powder is derived from green *Coffea arabica* and *Coffea robusta* beans. Because WGCP® is made from dried, unroasted whole green coffee beans, it contains all the valuable ingredients from the

beans – in contrast to roasted coffee or green coffee extracts.

WGCP® therefore contains much more than just caffeine. It is also high in amino acids, quinic acids and chlorogenic acids as well as antioxidants, minerals and fibre. Plus, as it contains much less caffeine than roasted coffee, it has fewer side-effects and is much more effective; the fibre and bean husks it contains prevent the rapid release of natural caffeine.

WGCP® reaches the bloodstream quite gradually and provides the body with sustained energy without the negative side-effects associated with caffeine consumption.

Dr Stefan Siebrecht, Managing Director of Taiyo GmbH, has developed a large variety of innovative drinks concepts: "We always think in a holistic way. One of our most novel concepts is a cocoa and cappuccino flavoured vegan protein shake with moringa, hemp protein, pea protein, bean fibre and WGCP®, and we can even enrich it with vitamins, minerals or Coenzyme Q10. This is what consumers want: products that deliver a whole range of valuable health benefits and that help them to improve their daily diet in an indulgent way." ■

Taiyo GmbH
<https://taiyogmbh.com/en/>

Facilitating the Innovation Game

GELITA's SMART TECHNOLOGY range offers a combination of functional and technological benefits as well as improved processing performance

Cereal bars



Statistics repeatedly show that companies that innovate are more successful than those that don't. Whether it's to meet current consumer needs, reach new markets, exploit niche opportunities, improve overall profitability or just stay ahead of the competition – it's mission critical to focus on adapting, improving, modifying or developing completely new products. GELITA helps customers to achieve these goals and offers guidance throughout the innovation process. With its latest SMART TECHNOLOGY product range, 'collagen peptides ST', the company now offers functional ingredients that offer the best of two worlds: Bioactive Collagen Peptides® with gelling power. These novel ingredients help manufacturers to overcome

process-related challenges and facilitate the development of food products or supplements with both nutritional and technological benefits.

Keeping pace with change: not easy, but necessary

The consumer revolution is real and substantial. Bringing successful new products to market in this turbulent environment is quite challenging. To get it right, food and beverage manufacturers must quickly and accurately assess white space opportunities, including factors such as key growth drivers, the competition and the needs of constantly changing target groups.

Without a doubt, in both saturated and rapidly developing economies all over the world, there is an ever-increasing requirement for

functional products that are naturally healthy, clean label and cost-effective. This particularly applies to those that deliver solutions for personalised nutrition and/or target crossover markets such as food-pharmaceuticals and food-cosmetics. As a result, to exploit today's diverse consumer base, the role of the ingredient supplier has become progressively more important, especially regarding ingredient know-how, time-to-market, quality and service.

Supplier and partner along the way

GELITA, the leading manufacturer of collagen proteins, is aware of the current changes and challenges affecting the sector. "We continuously monitor global markets and consumer trends to help our customers develop innovative approaches to creating new products. From technical support, recipe or concept development and nutritional and regulatory advice, we offer guidance and expertise throughout the entire value chain. And, right now, we see strong growth opportunities for collagen-based innovations," said Oliver Wolf, Marketing and Communication at GELITA.

Collagen proteins on the rise

Seemingly unaffected by global economics and boom-and-bust trends, the worldwide collagen peptide and gelatine markets continue to flourish. Worth US\$0.7 billion and US\$1.8 billion in 2013, respectively, these sectors are expected to reach values of US\$1.1 billion and US\$3.0 billion

Improved dissolution properties



Increased bulk density



by 2020.¹ Driving this growth are a number of factors, including an increasing awareness about personal healthcare and nutrition, the rising tendency of an ageing population to maintain their physiological well-being, and the steady pace of industrialisation in developing geographies.

Body stimulating capabilities for tailored products

GELITA's Bioactive Collagen Peptides® are scientifically proven ingredients that offer a wide variety of nutritional benefits, which is why they are increasingly used in food and dietary supplements throughout the world. BODYBALANCE® contributes to body toning and can help to prevent age-related muscle loss in the elderly. For beauty-from-within products, GELITA offers VERISOL®, a product that helps to substantially increase skin elasticity and hydration by stimulating skin metabolism. With FORTIGEL®, the company provides the bioactive component proven to stimulate joint cartilage regeneration. Finally, GELITA's FORTIBONE® contributes to bone health by promoting the biosynthesis of bone extracellular matrix.

Performance by design

Now, GELITA's new SMART TECHNOLOGY product range further enhances the company's collagen peptides by adding a set

of properties. Building on GELITA's existing product range, these novel ingredients have been produced using a new, additional particle engineering processing step. As a result, SMART TECHNOLOGY offers customers significant extra value in the form of technological advantages that, for example, improve efficiency or process performance. They can also provide functional advantages – improving certain properties or conferring innovative characteristics – that open up new product and process design possibilities.

GELITA's new range of ST collagen peptides comprises two main groups: the ST products offer physiological functions, whereas the hybrid ST or HST products combine physiological functions with technological advantages

Dr Margarethe Plotkowiak, Head of Global Product Management, Food, at GELITA, notes: "The use of existing equipment often limits the optimisation of certain process parameters during product development. There may be issues

with dissolution or undesired foaming, for example. The ST product range was developed to overcome these hurdles. This not only enables manufacturers to run more stable, controlled and enhanced processes, it also facilitates the creation of new products without having to invest in new production facilities."

Bioactive Collagen Peptides® with gelling power

GELITA's new range of ST collagen peptides comprises two main groups: the ST products offer physiological functions, whereas the hybrid ST or HST products combine physiological functions with technological advantages. Both product groups improve process performance. In the ST version, all collagen peptides from GELITA – VERISOL®, FORTIGEL®, FORTIBONE®, BODYBALANCE® and TENDOFORTE® – will benefit from these enhanced properties. The hybrid ST versions combine the best of two worlds: Bioactive Collagen Peptides® with gelling power. With GELITA's HST products, customers will be able to optimise and simplify their production processes, resulting in lower costs, more robust processes and higher levels of quality.

Key benefits

GELITA ST and HST products produce less dust during production, transportation and storage. This makes handling

Native collagen is split



Native collagen in raw material

Bioactive Collagen Peptides

easier and also reduces the time required for cleaning, leading to time and cost savings. They also show improved dissolution properties: due to an adjustable particle size, a higher bulk density and an improved wettability profile, it is now easier than ever to create high-concentration solutions. Because the particles sink to the bottom of the dissolution vessel more quickly, fewer clumps form and, because of a lower air input, less undesired foaming occurs. This leads to fewer rejects and a smoother process that operates in a more controlled and reliable way.

Furthermore, depending on the product and process requirements, viscosity and drying times can be adjusted to provide optimal results. Of course, in line with GELITA's existing portfolio, ST products are non-allergenic and can be used to achieve a clean and clear label.

If the product requires both the bioactivity of collagen peptides combined with gelling power, HST products now also offer the convenience of handling just one product instead of two. Further to the advantages already mentioned, additional benefits include supply optimisation (order, transport, store and process just one ingredient), making it easier to produce innovative products.

Advantages in a wide range of applications

During the past decade, protein has become one of the most sought-after ingredients. It is now prominently featured on consumer products from beverages to yoghurt and everything in between. However, in functional foods and dietary supplements, it is often a difficult task to process large quantities of protein into the final product – ideally without the time-consuming conversion of existing production processes and machinery.

The new Collagen Peptides ST range of enhanced ingredients brings better processing and optimised performance levels to customers

An excellent example of the added value derived from GELITA SMART TECHNOLOGY is the production of high-protein gummies. By using HST products and a recipe adapted to high protein levels, clear fruit gummies with a protein content of up to 35% can be made on a standard Mogul production line. This is not currently possible with conventional powder products.

GELITA ST and HST products also make it possible to achieve a high dry substance binding system, resulting in an improved drying and setting regime within a viscosity range suitable for the production of cereal bars. As a result, these technologically optimised collagen peptides can be used as a coating agent or binder in muesli bars. Finally, the optimised bulk density means it's now possible to significantly increase the amount of Bioactive Collagen Peptides® that can be included in a hard capsule shell for example.

In a nutshell

In western societies, diversification has led to a demand surge for innovative tailored products that fulfill individual consumer needs. Now, more than ever, businesses should be investing in strategies that target these distinct groups to reap the potential rewards and benefits. The new Collagen Peptides ST range of enhanced ingredients brings better processing and optimized performance levels to customers. This means improved production, enhanced machinability and the ability to ease the development of new and exciting products with proven health benefits. ■

GELITA AG
www.gelita.com

1 Transparency Market Research, Collagen Peptide and Gelatin Market: Global Industry Analysis, Size, Share, Growth, Trends & Forecast, 2014–2020: www.transparencymarketresearch.com/collagen-peptide.html

Capturing the spirit of adventure

Global flavour expert Sensient whets the appetite with its innovative answer to current food and beverage trends: the novel All Natural and New Flavor collections.



From a flavour point of view, the world has never looked so exciting. Today's consumers have a huge sense of adventure and a seemingly endless thirst for new experiences. At the same time, a deep desire for truth and authenticity is driving them in the direction of the past and towards ingredients with trustworthy back stories – often stretching back to ancient times. Flexitarian lifestyles featuring natural, plant-based nutrition are also coming to the fore. For food and beverage manufacturers, this fascination with old, new and natural offers huge scope for the creation of innovative products that tantalise the taste buds, excite the imagination and deliver natural health benefits. Sensient facilitates navigation through the

potentially daunting world of possibilities: Its All Natural Collection is the ideal basis to transfer current trends into innovative products.

Bergamot-like Orange Blossom masks high mineral content and unpleasant flavours and also adds a wonderful accent of its own, working particularly well in beer

Trend 1: A feast of floral

When it comes to trust and tradition, few things have better credentials than flowers. Not only are flowers beautiful and natural, they also symbolise love. In the world of food and drink, picking the right ones is guaranteed to add a huge slice of appeal – especially in the eyes of feminine consumers. From the spicy and herbaceous to the delicate and sweet, Sensient's Floral selection has something for everyone and is designed to deliver a variety of floral accents in a multitude of ways.

Jasmine, Chrysanthemum or Desert Wildflowers, for instance, will add a natural dash of sophistication to cocktails, soft drinks, flavoured waters, sports drinks and teas. Just the sound of Elderflower or Geranium ice cream makes the mouth water, and Rose is as perfect in gin as it is in chocolate and other forms of confectionery. Bergamot-like

Orange Blossom masks high mineral content and unpleasant flavours and also adds a wonderful accent of its own, working particularly well in beer. The iconic Japanese Cherry Blossom, meanwhile, gives a refreshing lift to soda and a romantic note to confectionery, while Hibiscus, the national flower of Haiti, is rich in vitamin C and has a tart, cranberry-like taste that helps teas and cocktails stand out, not least because it imparts a glorious crimson colour.

Trend 2: Spice sensations

In ancient times and for centuries afterwards, spices were more precious than gold and were even used as currency. Combining health benefits and intense taste profiles, Sensient's Spice range is the perfect way to add a touch of natural sophistication and complexity. Moving on from their traditional use in food, a modern twist places spices like Black Pepper, Pink Peppercorn, Star Anise, Clove Bud and Saffron firmly in the beverage arena, where they add flair to cocktails and sparkling drinks. With naturally inherent heat, spices are also perfect for adding warmth. Cinnamon, for instance, is especially welcome during winter as an inclusion in bakery and dairy lines. Capsicum, a tropical American pepper plant, produces a mild burning sensation on the tongue for surprisingly daring confectionery, while pungent Cardamom's undertones of lemon, mint and smoke bring attractive unconventionality. The slightly



citrus, pine-like quality of Juniper is ideal in beer and meat-based savouries, while Liquorice is like a warm hug in candies, cookies and teas.

Trend 3: Herbal charm

Culinary herbs charm the senses with their impactful scents and clean, vibrant flavours. They add naturalness and, from an aesthetic perspective, their delicacy catches the eye for pretty-as-a-picture hors d'oeuvres, cheeses and savoury snacks, soft drinks and cocktails. Sensient's carefully curated range of herbs includes Garden Mint, a fresh-picked leaf that adds sophisticated sweetness and minty mouthfeel; Coriander Leaves, a light and citrusy alternative to spicy coriander seeds; hint-of-pepper Sage; memory-enhancing Rosemary; brewers' favourite Hops; aromatic, warming Oregano; and Thyme, whose delicate minty, slightly lemony aroma awakens the

Consumers get a real thrill when they can drum up excitement in their network by being the first to uncover a new sensation and shout about it instantly. Indeed, striking flavour profiles and ingredients have the potential to take on almost cult-like status

senses. Lemongrass delivers an enlightening, zestful experience that adds a wonderful layer of complexity, while soothing Aloe Vera, renowned for its skin healing and digestive aid properties, is the ideal inclusion in all sorts of beverages, from wellness drinks and water to bartender staples, where it adds healthy mystique. Basil too is moving out of the kitchen and into the mixologist's

armoury of innovative ways of enhancing the flavour and the image of their creations. After all, in Greek, the word 'basil' translates as 'royal plant'.

Trend 4: Experience the exotic

While young consumers may crave adventure and exploration, they may not have the ability to travel very far, and this makes food and drink that can place exotic destinations within their reach extremely attractive. For manufacturers, social media adds an extra dimension here: Consumers get a real thrill when they can drum up excitement in their network by being the first to uncover a new sensation and shout about it instantly. Indeed, striking flavour profiles and ingredients have the potential to take on almost cult-like status.

Sensient's Exotic Fruit Collection is an extraordinary exploration of tastes. Rambutan, a tropical native



Ginger is renowned for its medicinal properties and has been trusted since Roman times. Now enjoying a resurgence across all food and beverage segments, it has broad appeal that spans Millennials, adults seeking premium flavour experiences and health conscious consumers

of Southeast Asia, is prized for its sweet juiciness. Reddish-orange and covered in bendable spines, it also has quirky visual appeal. Aronia is perfect in syrups, wines, confectionery and bakery, while Prickly Pear is a sweet, seedy cross between a fig and a strawberry. Persimmon has a honey-like flavour similar to dates and pumpkin, and Mangosteen is a sweet and sour mix that hints at several types of citrus. Fresh from Peru and Chile, Lucumas are prized for their custard-like texture and pumpkin-butterscotch-maple syrup flavour. The ideal inclusion in confectionery, iced desserts and wellness drinks, Guanabana (soursop) is a mix of strawberry and pineapple with hints of sour citrus. Refreshingly sweet Dragon Fruit evokes kiwi and pear and

transports us to its native Central America, while Yuzu gives cakes, cocktails and chewing gum a fragrant flavour of Asia. With a softer palate than lemon and double the vitamin C content, Yuzu is also ideal for functional applications. Completing the collection, Snake Fruit (salak) is a sweet Asian delicacy with a tropical flavour and pineapple-like sourness that is often candied, pickled or made into syrups to complement pies and jams.

Trend 5: Ginger with a difference

Ginger is renowned for its medicinal properties and has been trusted since Roman times. Now enjoying a resurgence across all food and beverage segments, it has broad appeal that spans Millennials, adults seeking premium flavour experiences and health conscious consumers.

Sensient has been working with ginger since 1940 and the company's latest ginger collection comprises six distinctive flavour profiles: Classic Ginger Beer, a traditional 18th century English recipe that kicks cocktails to another level; Ginger Ale, a milder, more citrusy alternative; Ginger Root (Gari), a thinly sliced pickled ingredient that cleanses the palate and is great with sushi; Spicy Ginger, the perfect way to add heat to beverages, confectionery and dairy desserts; Nigerian Ginger – woody, pungent, sweet and aromatic with a hint of spice – and Chinese Ginger (galangal), a mild blend of sweetness, spiciness and terpenic citrus. With over 70 years of experience with Ginger extracts and flavours, the Sensient team can tailor any of these to create the perfect sensorial experience for any brand. ■

Sensient
www.sensient.com

Close to the Heart: Our industry services

Food and beverage regulatory consulting

Our services include a team with a high level of expertise in food labelling and regulatory support for both Canadian and US regulations. This includes standardised and non-standardised foods, foods for special dietary use like meal replacements, infant formulas, caffeinated energy drinks and dietary supplements (FDA). We also make government submissions to Health Canada and the Canadian Food Inspection Agency on behalf of our clients for Temporary Marketing Authorization of Supplement Foods, Novel Ingredients and Food Additive submissions.

Canadian food labelling services

This is a review and development of labels under federal and provincial regulations. This review includes all regulatory components such as the common name of products, net quantity, ingredient statement development and compliance, nutrition panel, allergen labelling, domicile and claim and copy review.

US food labelling services

This includes full label compliance reviews and label development under FDA and USDA regulations. This review comprises all regulatory components required on a label, such as the common name, net quantity, ingredient statement development and compliance, nutrition panel, allergen labelling, domicile and claim and copy review.

Training presentations and workshops

We customise training programs to meet the needs of our clients. We offer seminars on nutrition labelling, food labelling development, and compliant labelling claims. We deliver healthy eating seminars for employees, on a variety of topics, from prevention to sports nutrition. Our team has the nutrition and regulatory expertise to deliver.

Other industry support services

- Nutrition analysis of recipes and formulas
- Broadcast advertising review for claims and compliance
- Submissions to Health Canada including temporary marketing authorizations, marketing authorizations, novel foods and food additives, infant formulas
- USDA submissions for meat and poultry products. ■

Close to the Heart
www.close-to-the-heart.ca/lets-get-started/



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Our expertise cover a range of services including:

- Full label content development and review including ingredient statements, nutrition panels, allergen declaration, common name, domicile, and claims substantiation
- Nutrition analysis of recipes and formulas
- Broadcast advertising review for claims and compliance
- Training seminars
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Good perspectives for a successful ISM/ProSweets Cologne 2018

ProSweets Cologne, the international supplier fair for the sweets and snacks industry, is once again in 2018 showing its clear profile as the central order and information platform for the innovative sweets and snacks industry. Numerous companies have already registered for the coming trade fair in January 2018, including top exhibitors from the supplier industry. In total, over 300 companies from the sections manufacturing, packing and ingredients are once again expected in Cologne from 28–31 January 2018.



The supporting programme is also taking shape. For example, the 'Speakers' Corner', the Newcomer Area and a special event on ingredients will be staged. Furthermore, a special event on the theme 'Packaging – Design and Functionality' is planned. In addition, in ISM, the world's largest trade fair for sweets and snacks, which is being staged in parallel once more, the 'ISM Packaging Award powered by ProSweets Cologne' will be conferred again.

Exhibitors

The top exhibitors from the Machinery and Systems (process technology) product section at ProSweets Cologne 2018 include among others Aasted ApS, Carle &

Montanari S.p.A., Royal Duyvis Wiener B.V., Haas Food Equipment GmbH, Hänsel Processing GmbH, Knobel Maschinenbau AG, Memak Plastik San Tic Ltd.Sti., NETZSCH-Feinmahltechnik GmbH, Maschinenfabrik Seydelmann KG and Sollich KG.

Other notable companies that we look forward to meeting include:

GEA Food Solutions: Hall 10.1, Stand G071
www.gea.com

Robert Bosch Packaging Technology GmbH: Hall 10.1, Stand F010
www.boschpackaging.com

Baker Perkins Ltd: Hall 10.1, Stand B040

www.bakerperkins.com

Diana Food: Hall 10.1, Stand E069
www.diana-food.com

Wacker Chemie AG: Hall 10.1, Stand D020
www.wacker.com/captiva

New exhibitors in the year 2018 include AZO GmbH + Co. KG, BOEMA S.p.A., Kanegrade UK und ProLeit AG.

Supporting programme

The planning of the supporting programme for ProSweets Cologne is also underway. Companies that would like to test the waters with their first trade fair appearance at ProSweets Cologne on a small budget, can book their participation

Review of ProSweets Cologne 2017

ProSweets Cologne once again confirmed its significance as the international supplier fair for the sweets and snacks industry. 17,000 trade visitors from over 100 countries were registered this year. This corresponds to a comparable result as that of the previous year. At around 65%, the share of foreign visitors was once again also at a very high level. "With its focus on the needs of the innovative industry, ProSweets Cologne also competently satisfied the demand again this year. The 211 exhibitors of the trade fair reported that the contacts were excellent and plenty of orders were placed. They expressly praised the high decision-making competence of the discussion partners," commented Katharina C. Hamma, Chief Operating Officer, Koelnmesse GmbH. Last, but not least boasting 1,647 exhibitors, ISM, the world's largest trade fair for sweets and snacks that was held parallel, secured ProSweets Cologne a reliable potential in interested visitors. "Many customers are exhibitors of ISM, who parallel to their trade discussions, also took advantage of the opportunity to meet up with the supplier industry," added Hamma.

ProSweets Cologne has in the meantime become a 'must-attend' event for trade visitors from all over the world. The fact that the fair is held parallel to ISM and the awareness within the industry and trade that they can inform themselves comprehensively about all themes of the sweets and snack production value chain at one location in one go, was decisive for the good result again.

Almost one third of the visitors were experts from the production and manufacturing sectors of the sweets and snacks industry. The interest from the development and construction, marketing and buying sections was very strong as usual.

According to the exhibitors the quality of the visitors was excellent. The contact persons were either members of the management or held the corresponding executive position as the responsible expert buyers. This was also confirmed by Koelnmesse's visitor survey. It showed that almost two thirds of the visitors surveyed hold management positions at their companies or work in the areas of research and development, design, production or quality assurance. More than two-thirds of the respondents are also involved in purchasing and procurement decisions.

ISM, the world's largest trade fair for sweets and snacks, which is held parallel, had also achieved very good results comparable with the previous year level, when it closed its doors. Almost 38,000 trade visitors from over 140 countries were registered. 1,647 exhibitors from 68 countries took part in ISM 2017.

Together with ISM, ProSweets Cologne covers the entire value chain of the production and sales of sweets and snacks at the same time and place – a worldwide unique constellation.



Award powered by ProSweets Cologne that was conferred for the first time in 2017 will also be awarded again.

ProSweets Cologne is staged parallel to ISM, the world's largest and most important trade fair for sweets and snacks. With around 1,700 international exhibitors from around 70 countries, the trade fair offers a unique overview of the new products worldwide and provides access to nearly 38,000 trade visitors from approx. 150 countries.

Together with ISM, ProSweets Cologne covers the entire value chain of the production and sales of sweets and snacks at the same time and place – a worldwide unique constellation.

The industry sponsors of ProSweets Cologne are the Federal Association of the German Sweets Industry (BDSI), Sweets Global Network e.V. (SG), the German Agricultural Society (DLG e.V.) and the Central College of the German Sweets Industry (ZDS). ■

in the Newcomer Area from May onwards. The successful special event 'Ingredients' is being continued and offers companies from the ingredients segment an attractive participation model. Interesting themes and speakers are being put together for the Speakers' Corner, in order to

represent the current market and product developments as well as the trends in a lively and dialogue-oriented manner. Everything also revolves around trends in the 'Packaging – Design and Functionality' special event too, which is being conducted by Koelnmesse. The 'ISM Packaging

ISM and ProSweets Cologne 2018
<http://www.prosweets-cologne.com>
<http://www.ism-cologne.com>

New trends

GEA Aquarius lollipop equipment manufacturing can trace its heritage back to 1953, gradually evolving to serve the whole lollipop market for forming, cooling, wrapping and bagging.

Hall 10.1
Stand
G071

During its history the company worked hard to respond to changing markets and has sought to lead in innovative product design. As Product Manager, Mrs. Angelique van der Rijken explains "We want to be the best and have been the market leader for many years now, where we have served customers in more than 80 countries around the world with advanced, high quality performance solutions."

In terms of trends, what we have seen is that customers are informing us that they want to sell lollipops by the piece as well as requiring on-the-counter displays. We can provide options for these, with our Container filling system and the possibility to add a label on the stick or a sticker inside the wrapping for further branding of our customer's product.

Furthermore we see that customers are more and more

searching for an own identity and wanting to sell their lollipops at a higher segment with, for example, manufacturing 3D shaped lollipops or with special flavours or adding a coating on the lollipop. With our latest developments the GEA Aquarius 3D PopLine and GEA Aquarius CoatingLine these uniquely shaped 3D lollipops and coated lollipops can be made.

We have had very positive reactions from customers so far, especially about our coating bar, since customers can experience our ideas and taste the coated lollipops. They love the idea and are interested in what it can do for their market

Product quality and shelf life continues to be an important topic, avoiding moisture getting inside the lollipop wrap in high humidity climates.

That led us to creating the overlap seal for the GEA Aquarius TwistWrapper, which hermetically seals the product. Last but not least, we also notice the need to differentiate in bagging, from traditional pillow bags into nicely designed stand up pouches such as easy doy and quatro seal bags.

Bring lollipop creations to life

The lollipop market has proved a firm consumer favourite for many decades. GEA is providing the latest 3D forming, coating and packaging technologies to boost the market. With more than 60 years of specialist expertise in the lollipop market, GEA has built its reputation in devising creative industry solutions that have stood



out from the crowd. Its advanced equipment lines have enabled processing of innovative designs including 3D-shaped products, and even automatically coated lollies that have established the company's position as a world-leader in its field.

Underlining GEA's innovative approach, the coating line is believed to be the world's only fully automated line for forming, cooling, coating and wrapping lollipops, providing customers with a complete production package. Coatings can be used to add flavour, texture and shine to products, by adding different varieties of powder to hard candy lollipops. For the Latin American market, we have already introduced a full production line over the past year for chilli coated lollipops.

For other customers around the globe, Netherlands-based GEA now offers trails in order to explore the possibilities of our customer's desired powders to complement their lollipops. We have had very positive reactions from customers so far, especially about our coating bar, since customers can experience our ideas and taste the coated lollipops. They love the idea and are interested in what it can do for their market. What we saw in the market was that some customers were already coating

lollipops by hand or semi-automatically by a tumbler. They face two main challenges. First of all, the coating is not only applied on the lollipop, but also on the stick, which is not good for presentation. Second, during manual or semi-manual coating, and during the wrapping stage, the lollipops and their coatings can be easily damaged. We were asked to solve these problems of pollution on the stick, and the damaging of the coating. Within one year we developed a complete line solution, based on the unique idea (patent pending) to hold the lollipop by the stick during the whole process of forming, cooling, coating and wrapping via a set of multiple chain grippers. This fully automated and controlled process not only solved the pollution and the damaging of the product, but also brought two important additional advantages: minimum waste of coating powder and fewer labour costs.

Our company's aim is to help inspire customers to expand their range of flavouring and design options, with its equipment now capable of processing lollipops automatically at an upgraded rate of 600 pieces per minute. With increased operating speed and greater product diversity available to manufacturers, we want to keep one step ahead of the market. We see that confectionery manufacturers are more and more interested in 3D shaped lollipops, as round shapes are quite common, so they can differentiate and offer something unique

In the beginning of 2016, we also launched our GEA Aquarius 3D Pop Line, which covers a fully integrated process of forming, cooling and wrapping of 3D-shaped lollipops. Thanks to our unique technique of using a chain of grippers which hold each lollipop stick during the forming, cooling and wrapping stages, we ensure that high quality 3D



lollipops can be produced at high speed with practically no deformation. Both the Coating line and the 3D Pop line are equipped with Sandwich Wrap packaging equipment with an option for a perforation unit, which allows more than just a single lollipop pack. With this optional device chain packs with perforation can be produced with up to 15 lollipops on the strip. This gives retailers the opportunity to sell these premium lollipops per piece and present them instore for impulse buys.

GEA Aquarius FlexFormer

With our forming solutions a perfectly formed lollipop with excellent taste and mouth feel are the ingredients to success. This has led to us releasing a number of innovations that have responded to customer demands. This includes devising solutions taking into account production conditions in varying markets – with clients' requirements offering particular challenges in different global territories. With solid or centre filled ball lollipops or 3D lollipops, products are formed in the GEA

Aquarius FlexFormer. The format set and forming machine are designed to enable a very flexible, quick changeover between sizes or shapes. Moreover, the machine has a sugar rope detection system, which ensures that when no sugar is entering the format set, no stick will be fed towards the die set. With the FlexFormer, you can have a centre filling or bubble gum, chewy candy or a paste, confectionery: manufacturers can be as flexible as possible.

GEA Aquarius BunchWrapper

The GEA Aquarius BunchWrapper is fitted with equipment for

precision placement of labels inside the wrapping film and on lollipop sticks. This enables manufacturers to differentiate products by adding information such as barcodes or promotional tools like logos and actions. The GEA Label on Stick system works at up to 800 lollipops per minute placing labels up to 60 x 20 millimetres. With this new application, there are creative possibilities including scratch-and-win promotional actions, quizzes and games on the single product.

Diversify your lollipops

The GEA Label on Film system enables stickers with tattoo transfers, letters or similar items to be included inside the lollipop wrap. This allows for the development of consumer promotional activities with collectable items and loyalty

The maximum size of the sticker is three millimetres smaller than the lollipop diameter, and it can be placed at up to 600 lollipops per minute





Twist wrapped lollipops give customers another look and different shelf appeal on the retail floor. Products attract more attention and can even make the lollipop look bigger

campaigns to boost sales.

The maximum size of the sticker is three millimetres smaller than the lollipop diameter, and it can be placed at up to 600 lollipops per minute. The GEA Aquarius BunchWrapper is also suitable for heat-sealable wrapping materials such as cellophane, polypropylene and laminates. The GEA BunchWrapper has been around for 10–12 years successfully in the market so it is well known and appreciated. As lollipops are sold more and more by the piece, our GEA Label on Stick option on the GEA Aquarius BunchWrapper

provides our customers with the possibility to print information on both sides such as barcodes and product ingredients.

Stand out with contemporary bagging

Completing the portfolio offer with GEA SmartPackers vertical packaging equipment, GEA ensures that lollipops are bagged in the latest stand-up packaging styles in order to stand out on supermarket shelves and shop counters. The continuous motion GEA SmartPacker CX400 on the GEA stand can form, fill and seal the popular Quatroseal and attractive Easy Doystyle bag formats. GEA SmartPackers handle products smoothly, making it possible to bag fragile and sticky candy at high speeds. And thanks to the product-in-seal detection system, no sticky product residue gets in the jaws, so there's no need to stop for cleaning.

GEA Aquarius TwistWrapper

Another major product from its present line is the GEA Aquarius TwistWrapper machinery, which has a patented feature, the so called Overlap Seal, (available as an option), which promotes prolonged shelf life of the product while using less wrapping film during production in comparison to other wrapping techniques. The machine achieves its high speed through smooth film handling, precise cutting and automatic feeding. Twist wrapped lollipops give customers another look and different shelf appeal on the retail floor. Products attract more attention and can even make the lollipop look bigger. ■

GEA Food Solutions
www.gea.com

Fluidised bed technology can help to improve margins

From the initial particle design concept to successful delivery of a tailor-made plant, Glatt Ingenieurtechnik takes a unique approach to partnerships that offer many benefits to food industry clients.



When certain food ingredients need to be produced with better margins, fluidised bed technology can deliver real benefits. It can be used, for instance, to optimise the film thickness of a coating, define the solubility of an instant product or find the ideal particle size for dust-free dosing. Fluidised bed technology is suitable for many issues that can represent challenges for food manufacturers, including taste, appearance, smell and texture. For example, it can protect flavours from potential damage throughout a product's life cycle, including during transportation, on the retail shelf and in the customer's home as well as on its ultimate journey through the body's digestive system.

The key advantage that fluidised bed systems have over other drying methods is that several processes – from spray granulation

and spray agglomeration to spray coating and spray encapsulation – can all be performed more efficiently. They can also be combined with drying in a single step.

As a global plant manufacturer, Glatt Ingenieurtechnik, from Weimar, Germany, specialises in developing and supplying fluidised bed technology, and combines in-depth technical expertise with professional engineering know-how to deliver turnkey production solutions, even for greenfield projects.

A stepwise process

Glatt's work begins right at the very start of product development, when a meeting is held with the potential client to discuss particle design improvements. Normally Glatt will propose trials and/or design work in order to fix technological requirements and parameters as well as define

possible scope of supply and interfaces between client and Glatt. Once this is agreed, laboratory tests are carried out at the company's technology centre in Weimar, where Glatt's experts work together in teams with the customer's product developers. Project lead times are generally between one and two years, so repeated trials are not uncommon. An intermediate pilot plant step might sometimes also be necessary – for large capacity scale-up projects, for example, or when significant quantities of product samples are needed for market testing.

The next step could be a conceptual design stage, where the Glatt team provides clients with first technology ideas and technical solution developing PFD draft, with overview of investment costs, operating and ancillary costs, as well as a budgetary estimate for agreed scope of supply inside battery limits. For complex projects sometimes a basic engineering is necessary in order to provide a firm quotation. Depending on after which project phase the client ordered the plant, Glatt will provide further engineering services, including all specifications, and execution planning whereby the company takes care of close communication to the client in order to provide customised solutions.

The company also takes care of the remaining necessary steps, including transportation and supervising the construction and



commissioning of the plant.

Bespoke production and installation Although each piece of equipment supplied by Glatt is unique, it takes an average of five to eight months for a fluidised bed granulator to be ready for shipping to the client. Before any plant is handed over, everything is thoroughly tested.

Glatt supplies everything that the whole process requires, including solutions for materials handling, sanitising, main pipelines and electricity as well as possible media supply systems. The company also engineers processes for fermentation, liquid preparations and packing stations. Should a particular site or building pose a problem, Glatt can create appropriate engineering designs and supervise construction – anywhere in the world. Its experts have a free hand to choose the necessary equipment and have already realized turnkey biotech production facilities that are fully equipped with licensed technology.

Glatt's global presence enables its own experts to conduct appropriate reviews of specific regulations all over the world

Regulatory compliance

Glatt's global presence enables its own experts to conduct appropriate reviews of specific regulations all over the world. The company's American colleagues, for instance, deal with FDA regulations and GMPs, while its Indian team of more than 400 employees is well versed in Asian regulations. In Europe, Glatt takes care of issues such as EHEDG, risk analyses and explosion protection, and it has significantly expanded its capacities in classic white biotechnology at its facility in Dresden. "For our customers, Glatt's high standards are key," says Lutz Heinzl, Sales Director at Glatt Ingenieurtechnik. "They like

to know that the core of our process technology is of German origin. The resource-efficient use of energy and raw materials is also part of our plant concept. Energy recovery systems are easy to implement and bring significant savings."

Customers from across the world value the technology expert's extensive facilities and the personal attention they receive, and often return to Weimar as their needs alter and they decide to change, develop or improve their products. If, as is sometimes the case, a raw material is not permitted to be imported into the EU, a client can loan or buy a ProCell LabSystem and conduct the testing phase in its own country. ■

Glatt Ingenieurtechnik
www.glatt.com

Quick and easy changeovers of case packing formats with Bosch technology

Cereals, biscuits, chocolate, cheese, frozen food or coffee can now be case-packed with even more flexibility. Bosch Packaging Technology, a leading provider of processing and packaging technology, has developed a modular collation platform for its Elematic case packing series. This platform consists of standardised assembly groups for the infeed and accelerator belt, collation chain and product transfer, which can be configured as required. Products can be fed horizontally, vertically, in line or at a 90-degree angle.



Bernhard Vaihinger, Head of Product Management, Innovation and Technology at Bosch Packaging Technology in Remshalden, Germany, says: "The growing product variety on the manufacturer side requires increasingly flexible packaging solutions. With the new modular collation platform, our case packers will be able to offer even more flexibility. In future, the platform will be available for the entire Elematic series – from the wrap-around case packer and side load case packers for pre-glued blanks, right through to the top loaders." The new grouping platform on the Elematic 3001 case packer was presented for the first time at the FachPack 2016 trade fair in Nuremberg, Germany.

Grouping folding boxes or bags

The case packer Elematic 3001 packs products into full wrap-

around, into a tray or into two-part shelf-ready display cases. Different pack styles can be grouped, such as folding cartons, flow wraps, stand-up pouches, doy packs, cans or tablets. Standardised assembly groups enable different infeed scenarios for various pack styles. Series technology allows for quick and easy setup, and replaces the need for customized developments of special solutions. Customers benefit from proven technology and fast throughput times.

Format changeover in eight minutes

The 'Elematic click system' enables easy, reproducible and completely tool-less changeovers on the Elematic 3001. It indicates acoustically to the operator when parts successfully lock into place. This eliminates the need for fine adjustments and removes the risk

of errors when reading from scales, while also reducing scheduled downtimes. Format changeovers can be performed in just eight minutes – depending on the grouping pattern.

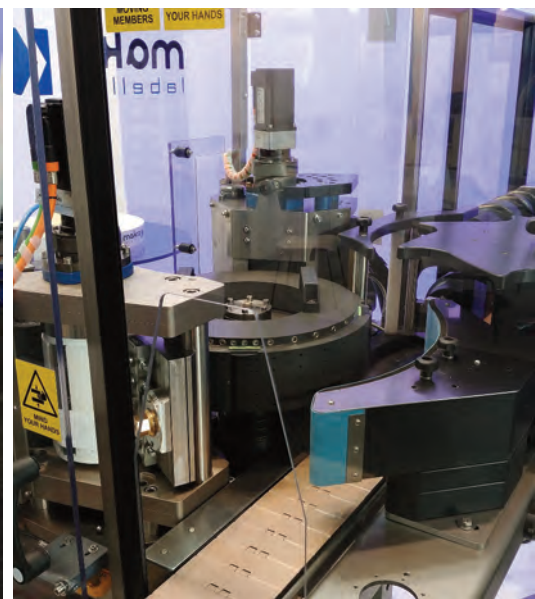
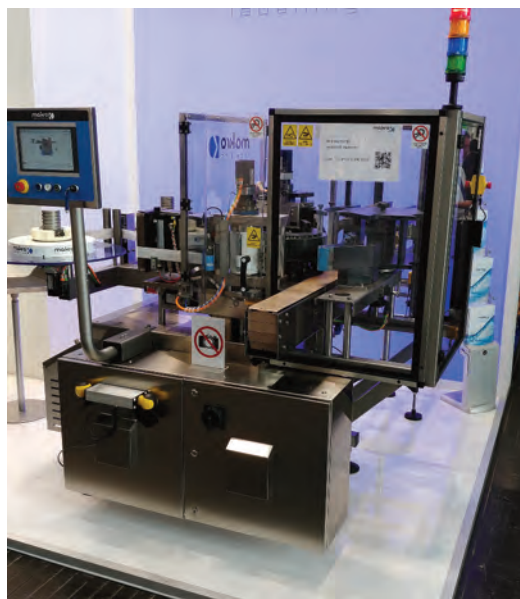
Ergonomic design and easy operation

The Elematic 3001 case packer is characterized by its ergonomic design with a low blank magazine. The granulate for the hot melt system can be safely refilled from the outside and the machinery has an open and easy-access framework, allowing for good visibility of packaging processes and increasing ease of use. ■

Bosch Packaging Technology
www.boschpackaging.com

Berrington Spring Water order a Makro Labeller

Berrington Spring Water, based in Herefordshire, will be upgrading one of their bottling lines in February with the installation of the new Makro Mak-Line RFL labeller. The current equipment was put under strain due to increasing demand.



The Mak-Line RFL is a linear roll fed labeller capable of speeds up to 12,000 b.p.h. and for Berrington it will handle bottle sizes of 750ml, 500ml and 350ml applying wraparound film labels to either still or sparkling water.

Richard Portman, Managing Director of Makro Labelling UK said, "This is the first of the linear Makro labellers in the UK. The main roll feed labelling station is identical to the rotary labeller machine range, and as such is capable of much higher labelling speeds. The labellers can come with either a single or double reel station and offer smaller drinks manufacturing clients the option of being able to dress their bottles in the same way as the market leaders, without the larger investment of rotary labelling machines. The speed and price are lower than a rotary unit, without sacrificing any of the high-quality

roll feed labelling technology and at a later date the machine can be upgraded to a rotary carousel if required."

Richard continued, "We had a great deal of interest in these machines at drinktec in September. Smaller soft drinks producers of niche brands and emerging mineral water brand owners want their products to have the same quality appearance as the major brands even though their production runs are lower. Change over times are very quick on these labellers so there is very little down time, in this case a very important issue as Berrington Spring do a lot of contract bottling and therefore need to be very agile in changing bottle format and label dress."

In recent months, Makro UK have also received orders for 7 complete craft spirit bottling lines. These lines comprise,

Rinsing, Filling, Capping, Capsule Application and Labelling equipment which has been sourced in Italy from machinery suppliers with whom Makro Labelling UK have exclusive UK representation.

This latest labeller order from Berrington Spring Water completes 2017 as the best year to date that Makro have had regarding sales in the UK and orders already taken for installation in the New Year puts them on a par with sales for this year for 2018 and has necessitated a move to new premises in Burton on Trent to accommodate new staff in after sales and service. ■

Makro Labelling UK Limited
www.makro-labelling.co.uk

Emerging scientific news about low calorie sweeteners presented at the greatest scientific event on nutrition globally

Evidence supports low calorie sweeteners' use as a means to reduce calorie and sugar intake within a balanced dietary pattern, according to a recent Consensus meeting outcome.



- New 4-week intervention study shows no impact of daily low calorie sweetened drink consumption at mealtime on appetite and food intake.
- New 6-month clinical trial finds no negative effects of low calorie sweeteners on insulin sensitivity and on risk markers of type 2 diabetes.

The latest evidence around low calorie sweeteners' science was among a number of highly interesting topics presented at the 21st International Congress of Nutrition (ICN) that took place this year in Buenos Aires, Argentina, from 15–20 October. Overall, nutrition professionals from around the world look forward to the emerging scientific news that experts on food and nutrition bring to light at ICN, one

of the greatest scientific events on food and nutrition worldwide organised by the International Union of Nutritional Sciences (IUNS) every four years.

Therefore, bringing together at the IUNS 21st ICN leading experts on the field of low calorie sweeteners science to present new data on this scientific area is of highest interest to scientists, health and nutrition professionals globally.

The findings of new randomised clinical trials (RCTs) on low calorie sweeteners' effect on appetite and energy intake, as well as on insulin sensitivity and type 2 diabetes, recent data from systematic reviews on low calorie sweeteners' role in weight management, and an overview of the latest evidence on the use, role, benefits and safety of low calorie sweeteners were presented during two highly

attended scientific symposia as well as at poster presentations in the context of the 21st International Congress of Nutrition, and are briefly discussed in this article.

New clinical trial confirms no effect of low calorie sweetened beverage intake on appetite

In a poster presentation by Dr Marc Fantino, who presented the outcomes of a new RCT in 164 healthy and normal-weight adults, it was shown that, when compared to water, the acute and longer-term consumption of low calorie sweetened drinks at mealtimes for four weeks does not affect food intake and appetite nor increase calorie or macronutrient intake. Furthermore, the selection and consumption of sweet foods was not different between the diet

drink and the control (water) groups, confirming the fact that low calorie sweeteners' intake does not lead to an increase of preference and consumption of sweet-tasting products. Importantly, this was confirmed for both individuals who were either regular diet drink consumers or non-consumers of low calorie sweeteners, even after a 4-week habituation period to daily low calorie sweetener intake.

No effect of low calorie sweeteners on insulin sensitivity, a new long-term trial finds

Presenting the latest data on low calorie sweeteners and state of research in relation to their effect on weight management, Prof Anne Raben, University of Copenhagen, Denmark, announced the outcomes of a new under publication RCT in 60 overweight and obese people by Sara Engel et al (European Journal of Clinical Nutrition, accepted for publication), which aimed to compare the effect of a 6-month daily intake of 1 litre of low calorie sweetened beverage, water, low-fat milk and sugar-sweetened beverage on insulin sensitivity and blood lipids. Importantly, this long-term RCT found that there was no difference among the different beverage groups on insulin resistance indexes after 6 months of continuous consumption. Furthermore, and regarding the effects on blood lipids, the daily consumption of sugar-sweetened beverages led to higher levels of total cholesterol and triglycerides in the blood compared to low calorie sweetened drinks.

The findings of this new RCT are of high importance as claims from individual animal studies supporting that long term low calorie sweetener intake can contribute to insulin resistance and thus to type 2 diabetes are once again rejected in humans. On the contrary, this trial confirms that low calorie sweeteners do not affect insulin sensitivity and have no impact on risk-markers of type

2 diabetes in overweight and obese adults, who are frequently consuming low calorie sweeteners in their effort to manage their calorie and sugar intake.

Outcome of a Consensus meeting on low calorie sweeteners

The outcomes of a Latino-American Consensus meeting held in July 2017 in Lisbon regarding the use, safety, role and benefits of no- and low calorie sweeteners were presented by Prof Lluís Serra-Majem, University of Las Palmas de Gran Canaria, Spain, at a scientific symposium organised by the Spanish Foundation for Nutritional Research (FIN) and the Spanish Nutrition Foundation (FEN), within the framework of the 21st International Congress of Nutrition.

The experts of this meeting stressed out the fact that it is of highest significance to consumers to be able to find credible and evidence-based information regarding low calorie sweeteners' use, especially in light of the multiple sources of unreliable information, mostly online and on social media, which provide inaccurate and misleading information of nutrition and health issues overall including of low calorie sweeteners' science. Therefore, the publication and further communication to the public of a consensus document presenting the state of the art in relation to strong evidence about low calorie sweetener use can help bring the science closer to the consumers.

Update on health and safety of low calorie sweeteners

In a scientific symposium organised by the International Life Sciences Institute (ILSI), Prof Peter Rogers, Bristol University, UK, Prof Xavier Pi-Sunyer, Columbia University Medical Center, USA, Dr Ashley Roberts, Intertek Regulatory & Scientific Consultancy, Canada, and Dr France Bellisle, Université Paris, France, provided evidence in response to questions raised in the

popular press and by public health communities regarding the potential benefits and safety of low calorie sweeteners.

Some of the key remarks of the speakers of this session include:

- Disproving early suggestions that low calorie sweeteners may enhance the natural appetite for sweetness and paradoxically stimulate the consumption of other sweet (sugar-containing) products, intervention studies show that low calorie sweeteners satiate rather than enhance the appetite for sweet tasting products and facilitate the reduction of sugar intake.
- Overall, the balance of the evidence shows that low calorie sweeteners appear to be helpful in reducing calorie intake and thus in weight management.
- A considerable number of clinical trials with low calorie sweetened products have been done through the years and most have shown little or no impact on glucose levels during both short-term and longer-term trials.
- Low calorie sweeteners are among the most extensively studied food ingredients. The safety of all food additives including of low calorie sweeteners is assessed by extensive reviews undertaken by regulatory authorities and committees such as The Joint FAO/WHO Expert Committee on Food Additives (JECFA), the United States (U.S.) Food and Drug Administration (FDA), the European Food Safety Authority (EFSA). ■

International Sweeteners Association
www.sweeteners.org

NUTRI-FACTS.org: Micronutrient research today

Below you will find highlights from DSM's highly informative NUTRI-FACTS website: keeping us up-to-date with the latest developments in micronutrient research.



News: Supplementation with lutein and zeaxanthin could save €6.2 billion in avoidable medical costs in Europe

A new report from Frost & Sullivan suggests that daily supplementation with 10mg lutein and 2mg R,R'-zeaxanthin could save up to €6.2 billion in total medical costs resulting from age-related macular degeneration (AMD) in Europe. To calculate healthcare cost savings, the analysis considered the prevalence of late-stage AMD in Europe, and the improvements in visual acuity for subjects using lutein and R,R'-zeaxanthin supplements versus placebo in a systematic review of clinical trials. They concluded that

the observed 7% improvement in visual acuity would translate into fewer severe/late stage AMD case transitions and significant cost savings, including €6.2 billion in total saved costs per year, and a return of €5.01 for every €1.00 invested in lutein and R,R'-zeaxanthin supplementation.

The efficacy assumption on which the report was based is consistent with the 10% reduction in progression to late stage AMD that was observed in the Age-Related Eye Disease 2 (AREDS2) study conducted by the US National Institutes of Health. The reported healthcare cost savings are also consistent with a 2013 Frost & Sullivan analysis on data from the United States. That study reported a US\$7.42 billion cumulative projected cost savings

from 2013–2020 resulting from lutein and R,R'-zeaxanthin supplementation.

Lutein and R,R'-zeaxanthin, two carotenoids found in green vegetables, are known for their antioxidant activity and are found in the retina of the eye. They are concentrated in the macula, which is colloquially known as the yellow spot. In fact, the term 'lutein' is derived from the Latin word for yellow. Because intake of green vegetables is low in many developed countries, daily intake of total lutein and zeaxanthin is typically about 1–2mg/day, far short of the beneficial amount in the above-referenced study.

Healthcare costs aside, a price can't be put on saving the eyesight of an individual. Increasing consumption of green vegetables, or consuming dietary supplements containing 'free' (unesterified) lutein and R,R'-zeaxanthin can help achieve the recommended levels of intake, a proactive step toward increasing macular pigment levels and supporting optimal eye health.

Topic of the month: Eating to see – Vision, screen time and nutrition

From television to computers to tablets and smart phones – the last decades have seen an unprecedented rise in the use of screens to share information, be entertained and connect. Screens are seemingly ubiquitous with most households having several. The amount of time people spend watching a screen is mind-boggling: an international comparison found that on average, adults spent 5 to 9 hours per day watching their television, computer, smartphone or tablet in the 30 countries surveyed. On the one hand, screens have enabled us to learn better, communicate better and increase our productivity. On the other, large amounts of screen time encourage sedentary behaviour and can cause eye problems that affect quality of life. Is there a way for us to stop our avid screen use from affecting our vision?

Blue light

The different colours that make up the light we see are beautifully displayed when water droplets refract and disperse light into a rainbow. As the colours of visible light move from red through yellow and green to blue and violet, they increase in energy. Thus, blue-violet light has the greatest amount of energy in the visible spectrum.

Blue light is a normal component of all light, and sunlight is the main source. Indoors, digital devices expose our eyes to blue light. Although the amount of blue light from computer, smartphone and tablet screens is small compared to that from sunlight, the amount of time that we are exposed to blue light and our proximity to the source are a cause for concern. A further issue stems from knowledge that the lens and cornea are capable of blocking



damaging UV-light, but not blue light.

The high energy content of blue light is likely responsible for its effects on the eye. Blue light increases oxidative stress within the eye when it interacts with vision sensors and pigments. Blue light exposure to the visual pigment responsible for vision in low light situations, rhodopsin, caused damage to the retina, whereas green light did not. It seems that blue light is more likely to cause discomfort to the eyes than other types of visible light, and this may increase eye strain due to squinting.

Nutritional strategies for computer vision syndrome

Two eye-friendly carotenoids found in many yellow, orange and green leafy vegetables may also help with computer vision syndrome. They are called lutein and zeaxanthin, and they are selectively placed at the back of the eye over the vision sensors responsible for central vision, called the macula. Their yellow color acts as a blue-light filter, potentially protecting the delicate photo-sensors from damaging blue light. They are also strong antioxidants, and this may be beneficial in highly metabolically active areas of the body such as the eye.

The effect of lutein and zeaxanthin supplementation on computer vision syndrome symptoms was recently tested in a randomized, placebo-controlled clinical trial. The study featured 48 college students who normally viewed screens for at

least six hours per day at a distance of 3 feet or less, were assigned to a lutein and zeaxanthin supplement (24 mg lutein, zeaxanthin and meso-zeaxanthin at a ratio of 83:10:7, suspended in oil) or a matching placebo control for six months. At baseline, three months and six months, participants underwent a series of visual tests, and completed questionnaires about their sleep quality and five indicators of excessive screen time. These were headache, blurry vision, neck strain, eye strain and eye fatigue.

At baseline, there was already a correlation found between higher levels of lutein and zeaxanthin in the eye (as determined by macular pigment optical density measurements) and less eye strain, eye fatigue and headache. After six months of supplementation, there was an increase in lutein and zeaxanthin in the eye. Headache, eye strain and eye fatigue decreased, and measures of visual performance improved. Interestingly, there was also an improvement in sleep as well.

The authors speculate that higher levels of lutein and zeaxanthin in the eye improve the ability of the light-sensitive pigments that are an essential part of vision to regenerate. Thus, the eyes maintain visual performance during long periods of exposure to the blue light from screens with the help of lutein and zeaxanthin. They also suggest that lutein and zeaxanthin screen out some blue light to reduce squinting, a cause of eye strain.



Expert opinion: Can micronutrient intake alter the trajectory of Alzheimer's disease?

Type 3 Diabetes

Alzheimer's disease is sometimes termed Type 3 diabetes. It is certainly true that patients with advanced Alzheimer's disease have very low brain insulin levels. Type 2 diabetes will cause brain insulin resistance, oxidative stress and cognitive impairment, but does not explain the full range of symptoms – hence the term type 3 diabetes. While age and genetics are undoubtedly the key risk factors for the disease, factors relating to diet, modern life style and metabolic syndrome may also be very important.

One of the hallmarks of the pathology of Alzheimer's disease is the formation of neurotoxic beta amyloid plaques. Amyloid beta monomers are produced when two enzymes (beta-secretase and gamma-secretase) cleave amyloid precursor protein (APP) in the neurons. The resulting amyloid beta is then released into brain tissue. It is thought that a specific amyloid beta 42 (AB42) (an amino acid form of amyloid beta) is responsible for the neurotoxic effects. In the healthy brain, amyloid protein acts to help any injury to the brain. However, in Alzheimer's disease the beta-

amyloid monomer miss-folds to produce a beta-amyloid oligomer that is neurotoxic. This mechanism is one of the main targets of pharmaceutical intervention research. Unfortunately, currently licensed drugs only increase levels of the neurotransmitter acetylcholine but have no effect on beta amyloid. Another treatment uses NMDA receptor antagonists (e.g. memantine) which can temporarily improve long term memory in moderate to severe Alzheimer's patients by increasing the activity of glutamate receptors on the post synaptic neurons.

Tramiprosate (3-amino propane sulphonic acid)

An interesting new discovery is that a small molecule called tramiprosate (3-amino propane sulphonic acid) is able to prevent the miss folding of the amyloid monomer protein. Unusually, the mechanism of action is that the tramiprosate prevents the shape modulation by forming a protective envelope around the native amyloid structure. In 2016, phase one trials with a monoclonal antibody treatment called aducanumab were shown to significantly reduce levels of the neurotoxic beta-amyloid oligomer and improve cognition. The drug is now being used in two phase three trials involving a total of 2,700 patients and are due to be completed in 2020. Sadly, another monoclonal antibody treatment, solanezumab, recently failed phase three trials, although it did show improvements in cognition. However, unlike aducanumab, solanezumab only targeted monomeric amyloid beta and not the amyloid oligomers and clumps.

Mediterranean diet

Some diets may potentially be able to delay the onset. Observational studies (including the 3C in France) have shown that a high adherence to a Mediterranean diet is able to support cognitive health. In addition, researchers have demonstrated that the omega-3 fatty acids DHA and EPA (not ALA) might support cognitive

health. An individual's genetic phenotype, specifically whether or not they possess a pair of the aPoE4 alleles, is an important determinant of the potential beneficial efficacy of such a diet.

Mild Cognitive Impairment (MCI)

The onset of mild cognitive impairment is accompanied by a rise in blood homocysteine levels. Homocysteine is produced within cells from methionine. High levels of blood methionine are widely accepted as a risk factor for the onset of dementia. The rate of cellular production of homocysteine can be reduced if folic acid, vitamin B6 and vitamin B12 are present. Prospective studies that increased levels of homocysteine are associated with structural damage to the aging brain, specially damage to white matter microstructure, increased density of neurofibrillary tangles and rates of total brain atrophy. A meta-analysis conducted in 2014 attributed a 22% increased risk of the onset of Alzheimer's disease in healthy elderly with raised homocysteine levels. The degree of brain atrophy appears to correlate with homocysteine levels in the elderly, but a recent study using magnetic resonance imaging has shown that B vitamins can support certain key brain structures.

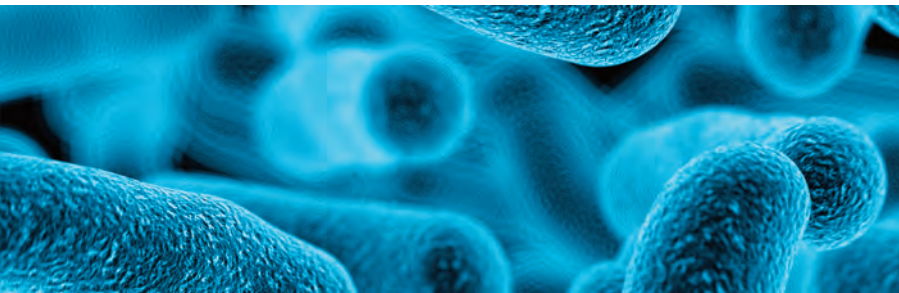
DHA Omega-3

The marine omega-3 fatty acid DHA is an important structural component of nerve cells. The levels of DHA in the brain depend on dietary intake. A recent meta-analysis of 12 population studies, including 154,711 participants indicated that an intake of DHA of 0.1g per day significantly reduced the risk of onset of dementia (RR=0.86) and Alzheimer's (RR=0.63), though there did not appear to be a dose response relationship. DHA can be metabolized into the oxylipin Neuroprotectin D1 (NPD1), which has been shown to be protective to brain cells exposed to beta amyloid beta 42 oligomers.

Topic of the month: Diet, nutrition and the gut microbiome

We've known for decades that the gut microbiome plays an important role in nutrition. For example, part of our vitamin K requirements is provided by the bacteria in our gut. This is the reason why newborn infants receive vitamin K around the time of their birth: their large intestine has not yet been colonised with bacteria capable of providing them with sufficient vitamin K, placing them at risk of vitamin K deficiency{Olson, 1987 #4}. Comprehensive investigations of the gut microbiome show that the types of bacteria present are able to produce all eight B-vitamins, and

their strong cell wall, and includes the Lactobacilli and Clostridia). For example, the gut microbiota shows distinct differences in the obese, and its composition changes during weight loss. When weight is lost, the proportion of common intestinal tract inhabitants named Bacteroides increase, while the relative proportion of Firmicutes decrease. It is thought that these changes in the gut microbiome affect feelings of satiety, modify the body's efficiency in extracting energy from foods, and can change the overall inflammatory load on the body, impacting the health effects of obesity. Three main concepts in changing the gut microbiota are considered: probiotics, prebiotics and synbiotics.



four of these at levels likely to meet a reasonable portion of daily recommendations{Magnusdottir, 2015 #5}. Microbes in the gut can also help improve the digestibility of the diet by breaking down polysaccharides that the human body cannot break down itself, making the energy they contain available.

Recent research has focused on how we can change the gut microbiota through nutrition to improve our health. The most abundant type of bacterium in the gut is Bacteroides, and other commonly found types are Faecalibacterium, Bifidobacterium (found in many probiotics), Lachnospiraceae and Roseburia. Another way of looking at the gut microbiota is to look at the relative amount of Bacteroidetes (a broad group of rod-shaped bacteria) to Firmicutes (bacteria named for

Probiotics

When we talk about probiotics and the gut microbiome, we mean the practice of consuming live microorganisms to provide a health benefit. Certain bacteria that are used to acidify milk, such as Bifidobacteria or Lactobacilli, are thought to contribute to gut health by maintaining an acidic environment in the large intestine, which promotes its normal function. It is also thought that the interaction between gut microbes and our immune system is important for its development. Certain probiotics may be able to assist in the normal development of the immune system by stimulating it without causing disease. Several thorough meta-analyses show that probiotics may be effective for several conditions related to gut health or the immune system in general.

Prebiotics

Prebiotics are a food component consumed with the intention of selectively increasing the proportion of a particular type of microorganism to produce a health benefit. They can be seen as a food for our personal microbes. For example, the development of a newborn infant's normal microbiome is enhanced by the specialized sugars found in human milk, called human milk oligosaccharides (HMOs). HMOs provide 'food' for Bifidobacteria and therefore their growth is encouraged by feeding breast milk. Bifidobacteria are considered to have a beneficial effect on infants' metabolic and immunological systems. Other compounds that have been widely studied for their prebiotic effects include the soluble fibre inulin, as well as galactooligosaccharides (GOS) and fructooligosaccharides (FOS), which are made up of short chains of sugar molecules. Consuming these prebiotics causes the proportion of beneficial Bifidobacteria in the gut to increase.

Synbiotics

When prebiotics and probiotics are used together, that is supplying certain microbes and their preferred carbohydrate source to the body, we are talking about synbiotics. The combination of a probiotic and matching prebiotic means that the probiotic dosed is more likely to thrive in the gut and exert its intended effects. Screening different combinations of pro- and prebiotics helps select synbiotic combinations. So far, evidence on synbiotics suggests that it helps stimulate normal bowel function in adults and infants, although this area of research is evolving rapidly. ■

NUTRI-FACTS
www.nutri-facts.org

Unisto's market innovation

Detectable security seal prevents product recalls for food

With its newly developed security seal Unisto Pharmaflex Detect, Unisto has once again demonstrated its status as pioneer on the market. If the security seal or parts of it knocks off and accidentally end up in the food, a metal detector or X-ray machine can identify them and sort them out. This is possible due to a specially manufactured plastic compound with detectable filler. In this way, safety processes can be further optimised, in that the risk of contamination is minimised and product recalls can be prevented.



The consequences carry heavy financial costs for manufacturers, and subsequent damage to the company's image is, for the most part, unavoidable

Background

Imagine this scenario, in your quality products – in the food value chain for example – a customer finds fragments of foreign materials. Not to mention what would happen if the end customer swallowed these foreign objects.

These instances occur more often than you would perhaps think. You have surely already heard in the media that food have had to be recalled because foreign bodies

such as plastic particles were found in end products. There is a high risk of suffocation for end consumers in the case of larger foreign bodies, since they may get stuck and block the respiratory tracts to a great extent. The consequences carry heavy financial costs for manufacturers, and subsequent damage to the company's image is, for the most part, unavoidable.

Here are a few current or well-

What is it a security seal?

Security seals make any attempt at tampering visible and help detect contamination, manipulation, trafficking of contraband, stowage of arms and explosives or theft of goods in transit. They provide indicative access control for goods in transit and indicate whether a locking device has already been opened. Suitable for many applications as bags, drums, boxes, roll cages, or trucks, security seals can be also individualised and produced for special solutions and niche applications.

Many factors influence the functionality and effectiveness of a security seal. Some of the aspects to be considered include:

- The type of containers to be sealed
- The temperature in the place where the sealed container is stored
- The forces and influences that the seal must withstand, for example whether it must be easy to remove by hand or using a cutter
- The logistic processes in place and which steps have to be taken
- Handling and management.

There are many different types of security seals on the market and they are all classified according to various categories. Due to the different types of security seal, the variables to be considered and how these may affect seal effectiveness, it is important to require the support of a security seal expert to choose the right seal for a specific application. In conjunction with the customer logo, consecutive numbering, barcode, data matrix codes etc., Unisto ensures that each seal is unique and cannot be substituted.

known recalls as an example:

- plastic parts in 'Landjunker Hackfleisch gemischt, 500g' (Landjunker minced meat, mixed, 500g) (14 July 2017, Germany)
- plastic parts in 'Frozen Meat Free Mince' (28 June 2017, England)
- plastic parts in 'innocent Super Smoothie Antioxidant' (27 May 2017, Austria)
- plastic particles in chocolate products of the brands MARS®, SNICKERS®, MILKY WAY® and CELEBRATIONS® (7 March 2016).

In general, the numbers of recorded recalls of food products contaminated with pieces of plastic or rubber have more than doubled in 2016, according to a report by the trade magazine 'Quality Assurance & Food Safety'.

The entire Pharmaflex Detect, or also parts of it, can be identified, thanks to the metal portion included, which is not the case with a conventional plastic security seal

Process optimisation to the next level

The safety of food must be brought to the highest possible level in order to protect the end user. Detectable cable ties, tags, writing material, etc. have already been established in the food industry. The security seal Unisto Pharmaflex Detect, which has been on the market since September 2017, is thus contributing to the increased safety of food. Sealing the container with a security seal prevents unwanted foreign material from making its way into products and goods that are still to be processed. In addition, thanks to a specially food compliant

plastic compound with a detectable filler, the entire security seal or parts of it which have been accidentally knocked



off can be identified and removed using a metal detector or X-ray machine. In this way, the HACCP guidelines

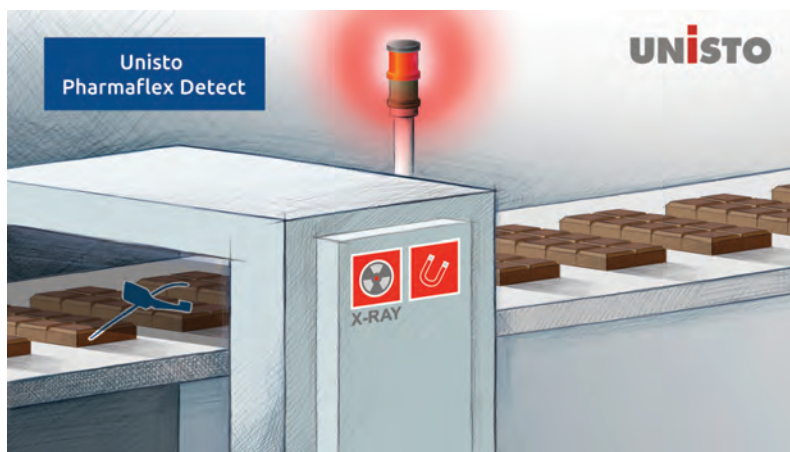
(Hazard Analysis Critical Control Points) are reinforced so as to avoid risks and additional costs.

Unisto Pharmaflex Detect and its properties

The tamper-evident adjustable-length security seal Unisto Pharmaflex Detect is through a special process loose manufactured. In this way plastic fragments are prevented from falling into containers or bags that are used to transport liquids, powder, etc. In addition, Pharmaflex Detect is detectable thanks to a special plastic compound. The entire Pharmaflex Detect, or also parts of it, can be identified, thanks to the metal portion included, which is not the case with a conventional plastic security seal. In addition, the dark blue colour, customarily used in the industry, facilitates the process of visual control. Dark blue is the established industry standard, since this colour does not appear naturally in raw materials for food and is subsequently easily visible.

The raw materials used to produce Unisto Pharmaflex Detect fulfil the following guidelines and regulations:

- Regulation 1935/2004/EC incl. Regulation 10/2011 'materials and articles intended to come into contact with food'
- FDA food contact materials Code of Federal Regulations [CO1]. (CFR) '21 CFR 177.1520 + 21 CFR 176.170'



- EU Chemical Regulation 1907/2006/EC. REACH (Registration, Evaluation, Authorisation and Restriction of Chemicals).

Advantages at a glance

This newly launched product from Unisto brings with it several advantages:

- Even small pieces can be detected by a metal detector or X-ray machine
- Depending on the requirements, Pharmaflex Detect is available with different and customer-specific percentage of metal
- Fulfills the requirements of the HACCP-procedure (HACCP: Hazard Analysis Critical Control Point)

- Produced loose and with a food compliant plastic compound
- In dark blue colour for simple visual detection in line with the industry standard.

Your unique selling proposition (USP)

Launched on the market in September 2017, the newly developed security seal Unisto Pharmaflex Detect marks an additional milestone for Unisto. Whether you produce flavourings, transport raw materials, or manufacture food, the use of this detectable security seal guarantees you an USP, working as an additional selling point and thereby securing your position on the market. ■

About Unisto

Unisto has been applying its experience in the development and production of innovative security seals for 90 years.

The company's roots go back to 1926, when it was founded as family business in Horn, Switzerland. Today, the companies of the Unisto group are present in more than 30 countries worldwide with 600 employees.

As global supplier and manufacturer, Unisto produces security solutions in line with its Swiss quality standards at all its production sites around the world, which are spread throughout Europe, Africa, Asia and South America.

Unisto's worldwide presence ensures professional on-site advice. After meticulously analysing processes and requirements, the security seal experts provide the best solution to meet specific customer needs.

Unisto
www.unisto.com/security-seals

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IT'S A LOT LESS EXPENSIVE THAN YOU MIGHT THINK



Is your baby food product fully protected?

We are now living in a world where, unfortunately, everyday we are subjected to news reports about the disturbing lengths individuals go to for criminal gain. Product tampering is one such crime; the motives behind the act are diverse – from extortion, sabotage, terrorism to mischief. Tampering involves altering a product without the manufacturer's knowledge. Within the food industry, baby food is a key target; notably, because of the emotional reaction it immediately brings from the potential risk to vulnerable infants.

The most well-known case of attempted extortion through baby food tampering occurred in 1989. Slivers of glass, razor blades, pins and caustic soda were found in baby food produced by two different British manufacturers. A blackmailer tried to extort £1.3 million from one brand owner, which then escalated as copycat criminals tried to benefit. In September 2017, the baby food industry in Germany came under threat. Targeting several supermarket chains, an individual demanded around £9 million or poisonous substances would be added to jars. A man was caught on CCTV depositing the alleged poisoned baby jars onto supermarket shelves and was later arrested before anyone was hurt. However, how can incidents, such as these, be avoided?

The role of tamper-proof seals

Tamper-proof seals are used to highlight unauthorised access since leaving the manufacturing facility. If the seal is broken, then the cashier or consumer should visibly notice this thereby stopping the sale or consumption before returning the item to the food manufacturer for further investigation.

They can be used as a method of reassurance to parents that baby food jars or containers have not been tampered with. Plus, they also serve the purpose of deterring criminals from interfering with the product. For additional security, a unique serialisation

number, or code, can be printed on the seal.

A tamper-evident seal can also act as a 'seal of approval'. It is an assurance that the baby food manufacturer has taken full care of the product in accordance with their brand ethics and requirements. This can include sourcing high quality ingredients, care during food preparation and manufacturing, through to the filling process. Most consumers will automatically assume, and trust a brand, that the baby food only contains the listed ingredients. The seal should act as confirmation that the product has completed comprehensive food safety and quality assurance programmes.

Verifying tamper-proof seals

Simply having a tamper-proof seal is not enough though; manufacturers need to verify that it is correctly in place and be able to prove this.

Utilising cameras, vision inspection technology captures images of each pack, label and seal. The software then analyses the images and assesses whether the pack is correct as specified during set up phase. Capabilities include:

- Inspecting tamper-evident seals in real time to guarantee that the product was securely sealed when leaving the production facility.
- Identifying certain graphical elements to verify individual



serialisation numbers to ensure that the correct codes are displayed.

- Rejecting any products without tamper-proof seals or correct serialisation codes from the conveyor belt for investigation and rework.
- Capturing all product inspection activity which is easily accessed to prove due diligence in the event of a product recall.

By confirming that all products have tamper-proof, numbered seals on leaving the facility can manufacturers protect consumers against security breaches, such as product interference, further in the supply chain. It also serves to close any gaps between manufacturers and retailers, ■

Mettler Toledo
www.mt.com

Givaudan launches flavour solutions to deliver freshness

Givaudan, a global leader in flavours and fragrances, has announced new flavour and taste solutions which will enhance the perception of freshness in convenience foods.

A range of seven top notes and taste solutions is being launched in phase one: lime, lemon, asparagus, lettuce, basil, coriander/cilantro and parsley. A second phase is already under development.

Delivering the perception that fresh ingredients have just been cut and added to the dish, this innovation is a direct response to strong consumer demand for fresh foods and eating experiences and is intended to revitalise the taste of processed foods.

Fabio Campanile, Global Head of Science & Technology, Flavour Division at Givaudan explains: "This innovative approach was developed following our last Chef's Council event in New York, where together with some of the world's leading chefs we explored what constitutes a freshly prepared eating experience.

"This enabled us to 'de-code' what the perception of freshness means, and translates the taste of freshly prepared food into flavour solutions for convenience foods."

Designed to be incorporated into Givaudan's existing flavour solutions, to 'lift' the profile with a hint of freshness, the new capabilities will deliver a step change in the eating experience of convenience foods.

Freshly cut herbs are often used as a final ingredient to a dish just before serving, to add the desired burst of freshness. Capturing this 'first burst' of freshness from freshly prepared herbs, vegetables and citrus fruits for convenience foods has been a challenge, as evaporation, oxidation or enzymatic degradation make catching the headspace to recreate the flavour difficult.

"We have overcome these issues by using our FreezeFrame® technology," said Campanile. "This technique prevents the evaporation, oxidation or enzymatic degradation of key freshness molecules to give us a more accurate analysis and capture the unique top notes.

"Our freshness solutions will help customers enhance the eating experience of their products by adding a fresh element to the flavour."

The second phase of solutions, comprising chive, cucumber, ginger, lemongrass and Thai basil, is under development and will be available later this year. ■



Triskelion develops TrustGel method for animal species specific detection of gelatin

Triskelion has developed a validated LC-MS method for the species-specific determination of gelatin. This method was recently published in Food Chemistry. The TrustGel method reliably detects porcine and bovine constituents in gelatin with a high sensitivity. Using TrustGel, species authenticity of gelatin can be demonstrated unambiguously.

Commercial gelatins are often produced from bovine and porcine skin and bone, and consist mainly of partially hydrolyzed collagen type 1. Over the past years, manufacturers have put a lot of efforts in the traceability of raw materials used for the production of gelatin. Techniques such as PCR and ELISA are commonly used for tracing these raw materials. However, false-positive and negative results, inconsistencies and low reactivity of commercially available kits have been observed with regard to these methods.

With TrustGel, gelatin manufacturers and their clients can now determine the purity of gelatin batches with regard to bovine and porcine constituents with a lower detection level of 0.05%. TrustGel utilizes stable isotope labeled internal standard peptides to obtain acceptable and accountable method performance on the single sample level. Calibration samples are prepared using pure reference gelatins and are subjected to the same sample preparation procedure as study samples. The method thus applies a combined internal standardization approach, which inherently corrects for analytical variations during sample preparation. The validation experimental set-up was based on FDA and EMA guidelines for bioanalytical method validation and performed according to Good Laboratory Practice, ensuring the scientific quality, traceability and data integrity.

Rousselot initiated the project with Triskelion and supported the development of the method. Gelatin testing services based on TrustGel are commercially available and provided by Triskelion. ■



Lycored explores the growing popularity of supplements for skincare



Consumers of skincare products are more interested in feeling healthy than looking younger or more attractive, new research has shown.

A new report from Lycored explores the growing popularity of supplements for skincare. The global carotenoid specialists surveyed 480 consumers in France and the UK.* Only 14% said that appearing younger was one of their reasons for using skincare products, and only 18% were motivated by a desire to look attractive.

By contrast, 79% said they used products to keep their skin healthy, and 62% said they used products to feel good about themselves.

The research also reveals high awareness of the importance of nutrition for skincare. Consumers were asked which single factor they considered most important to the health of their skin. Healthy diet was the clear winner, chosen as the most important factor by 43% of respondents, followed by avoiding too much sun exposure (22%), living a stress-free life (18%) and exercise (15%).

Zev Ziegler, Vice President of Brand & Marketing at Lycored, said: "The global skincare market is in the midst of a revolution. There has been a major shift from appearance to health, and from outside to inside. Consumers understand that beauty comes from within and that healthy skin is about what you put into your body. Because of these changing perceptions, the ingestible skincare category is increasingly important."

Lycored also asked consumers which factors most influenced them when choosing a skincare product. Affordability ranked highest (64%) but consumers also expressed a strong preference for naturality. Fifty-six per cent of consumers overall – and 63% of those in France – said they were likely to be influenced to buy a skincare product if it was made from natural ingredients.

The category report, 'Beyond Skin Deep', highlights a strong preference for ingredients supported by clinical research. Forty-four per cent of consumers said this was likely to influence them when choosing a skincare product.

Lycoderm™, Lycored's proprietary carotenoid blend for skincare supplements, is specially designed to foster overall skin wellness from the inside out. It combines natural lycopene, phytoene and phytofluene from tomatoes with carnosic acid from rosemary leaf. It has been proven safe and effective in several clinical trials. ■

Biorigin receives Gold Seal of the Brazilian GHG Protocol



Biorigin received the Gold Seal of the Brazilian GHG Protocol Program for having disclosed an inventory of Scope 1 and Scope 2 emissions audited by third party, in compliance with ISO 14064-3:2007 (SGS).

The GHG Protocol is a tool used to understand, quantify, and manage GHG (greenhouse gases) emissions. In 2008, the method was adapted to the Brazilian context by the Center for Sustainability Studies of Fundação Getúlio Vargas and WRI, in partnership with the Brazilian Ministry of the Environment, the Brazilian Business Council for Sustainable Development (CEBDS), the World Business Council for Sustainable Development (WBSCD) and 27 founding companies, launching the Brazilian GHG Protocol Program.

The results of the 2016 GHG emissions inventory of Quatá Açucareira (Biorigin / Zilor) was presented on August 10, at the Annual Event of the GHG Protocol Program held in the auditorium of FGV EAESP in São Paulo. The results are available online at the online platform of Registro Público de Emissões. ■

The Perfect Slice: Trends and innovations at the GEA Slicing Days in Kempten

Under the slogan 'The Perfect Slice' GEA, one of the world's largest suppliers of systems for the food processing industry, invited customers and business partners from Germany and abroad to visit its site in Kempten to exchange news and views with fellow professionals over a four-day period in October. Numerous delegates found information about slicing and loading systems in the food industry and about technologically leading solutions for various processing applications.

The participants in the seminar, who came from a number of different countries, were experienced for a well-balanced program of presentations and live demonstrations on processing lines for both the cheese, the sausage and meat sectors. One of these lines, for example, included a GEA DualSlicer 1200 with a new interleaver working in combination with a GEA OptiScan pre-scanner system together with a GEA Check 4000 weigher and a GEA ShingleLoader 600. Other systems, such as the GEA MegaSlicer XXL 1200 and the GEA PowerPak – thermoforming machine for packaging showed the diverse options available for the production process. The audience of industry professionals showed keen interest in the GEA OxyCheck, up to now a unique in-line system for monitoring the quality of remaining oxygen content and the intactness of MAP packaging.

The GEA team, which was drawn from the Sales, Application Technology departments and from Product Management, along with external business partners reported on technology trends, options for process optimization, food safety, the returns expected from investing in the high quality systems and the processes upstream and downstream of the slicing and packing technology.

Innovations for the perfect slice of uncalibrated logs

Developed for integration into fully automated lines, the GEA DualSlicer consecutively slices two calibrated logs such as round sausage, or two uncalibrated logs such as cheese, cooked ham or raw ham. It delivers consistent slice quality and constant slice thicknesses – even with softer products – at an output of up to 1,600 kilograms per hour. Automatic product loading from the rear is fast, reliable and protects the product. The decisive requirement for the technology was to generate the perfect slice. For a sliced food producer, the perfect slice is defined by low give-away and a high percentage of on-weight portions. This translates into high yield. Thanks to a number of innovative features, GEA engineers could minimize idle cuts while improving product output.

Prime concern: high product utilization

GEA components – gripper, rotor head and positioning conveyor – are corresponding to maximize product utilization due to fewer idle cuts. Thanks to independent drives for each of its two grippers and an adjustable rotor head that works in combination with the three-stage-portioning conveyor, GEA DualSlicer keeps give-away low. When used with the GEA OptiScan, where two logs are simultaneously scanned using x-ray, the line achieves exceptionally high yield. Slice quality is further increased by the GEA DualSlicer's ultra-stable and thin blade in combination with automatic shear-edge adjustment.

X-ray detects the unpredictable nature

Because natural products have inconsistent form and density, the GEA OptiScan 600 is a pre-scanner system that uses x-ray to detect irregular outer contours, holes, under slices and irregular distribution of fat and meat. It then calculates the ideal slice thickness and number of slices per portion prior to slicing.

High performance requirements in terms of speed, operating safety and handling

The GEA DualSlicer is fitted with a new interleaver designed to meet improved speed, operating safety and handling requirements. The interleaver has two completely separate film drives which allow it to adjust to products of different lengths in each track. There is also an option to select a fixed overall paper length per portion for variable slice numbers and excess length for each track. This allows the customer to set a fixed tare weight on the calibrated check weigher at the end of the line for the weight of the interleaver film. Furthermore there is no need to stop the machine to change the paper roll or deal with jams. ■



Corbion AlgaPrime DHA receives the 2017 Global Aquaculture Innovation Award

AlgaPrimeDHA, a sustainable, omega-3-rich whole algae ingredient produced by the joint venture partnership of Corbion, N.V. (AMS: CRBN) and Bunge Limited has received the 2017 Global Aquaculture Innovation Award from the Global Aquaculture Alliance. The Global Aquaculture Alliance (GAA) is a leading standards-setting organization for aquaculture seafood. GAA established the award in 2012 to recognize individuals and companies finding new solutions to the key challenges facing aquaculture.

According to GAA, the 2017 Global Aquaculture Innovation Award garnered the strongest competition to date with entries from more than 10 countries. Many of the innovations, including AlgaPrime DHA, originated from the aquafeed ingredient sector.

Walt Rakitsky, Emerging Business & Corporate Account Leadership for Corbion stated, "We are extremely honored to receive this award. The Global Aquaculture Innovation Award represents the future of aquaculture, and we believe that AlgaPrime DHA is a key feed ingredient for the industry's continued growth. A new sustainable and transparent source of long-chain omega-3 DHA, AlgaPrime DHA can responsibly enhance the nutritional value of seafood, delivering an important win-win for both people and the planet."

Miguel Oliveira, Bunge's Vice President of Global Innovation, added, "Aquaculture is one of the fastest growing food production systems in the world - a market estimated to reach \$200 billion annually by 2020. We're producing AlgaPrime DHA at an unprecedented scale to address this growing need, offering supply chain resilience and on demand production without the constraints of geography, seasonality and changing climate conditions."

AlgaPrimeDHA is currently produced at Corbion's and Bunge's SB Renewable Oils joint venture facility in Brazil. The facility embodies the principles of sustainable production to produce algae-based products with low carbon, water and land use impacts. Based on sugarcane feedstock, AlgaPrime DHA has a lower carbon and water footprint and higher yield per hectare than DHA produced from most other non-marine sources.

On September 29, 2017, Corbion completed the purchase of TerraVia, which included AlgaPrime DHA. San Francisco-based TerraVia has developed a microalgae platform to deliver high-value ingredients with clear benefits, such as Omega-3 oils for animal nutrition and tailored oils, structured fats and proteins for food, personal care and industrial applications. ■



Easy as this: Reduce cleaning time by 70% and operating costs by up to 80%!

Effective cleaning is critical to product integrity, productivity and profitability in all hygienic industries. By choosing the right cleaning equipment, you can reduce water, chemicals and energy costs as well as decrease cleaning time between production cycles.

Now also retrofitting through small tank openings

As part of the market's most consistent portfolio of rotary jet head tank cleaning machines, we recently added three Alfa Laval rotary jet heads, GJ A2, GJ A6 and GJ PF FT.

This gives you the opportunity of easy installation of rotary jet head technology in small size tank openings like 3" or 4", where static spray ball and rotary spray heads are normally mounted in today. By retrofitting with one of the three small GJ jet heads, you avoid reworking the tank to accommodate upgrading tank cleaning equipment, meaning low installation cost.

Easy to upgrade from static spray balls

When higher cleaning efficiency is required, it is easy to upgrade your static spray balls to the Alfa Laval GJ Rotary Jet Head technology. Simply unclip the static spray ball and replace it with a new clip-on GJ rotary jet head, that uses a cleaning pattern ensuring dynamic and effective distribution of water to the inner tank surfaces. The high mechanical force generated by the strong jet impingement, efficiently removes remaining products and residues to provide the best conditions required for hygienic production. ■



Second GELITA AG Sustainability Report

As a manufacturer of pure natural products, GELITA AG is highly committed to the environment, and sustainable action is deeply rooted in its corporate philosophy. The recently published second Sustainability Report provides information on the company's environmental, economic and social commitment and illustrates the progress that has been made. The new report is available in English at www.gelita.com.

Gelatine, collagen and collagen peptides are natural products. This is why the world's foremost innovator and producer of collagen proteins, based in Eberbach, attaches great importance to the responsible use of resources. "Our goal is to combine economic success with ecological and social responsibility," says Dr Franz Josef Konert, Chief Executive Officer at GELITA AG. The company is continuously seeking new ways to minimize the impact of its business on the environment at all 21 locations throughout the globe.

Wide-ranging commitment

GELITA's commitment to sustainability covers a wide spectrum. Investments in new, energy-saving technologies and improved production processes are just as much a part of the strategy as measures to increase occupational safety or social initiatives for staff members at GELITA locations around the world. The recently published Sustainability Report showcases exemplary projects that GELITA launched last year, and provides information on the progress made. The measures in the plants include, for example, the recovery of water from production, the use of electricity from renewable energy sources, or the utilisation of residues from gelatine production as compost. It also presents the development of some important key figures. For example, despite an increase in production volume, energy consumption, the quantity of fresh water used, the wastewater volume and emissions such as the greenhouse gas carbon dioxide (CO₂) were all reduced.

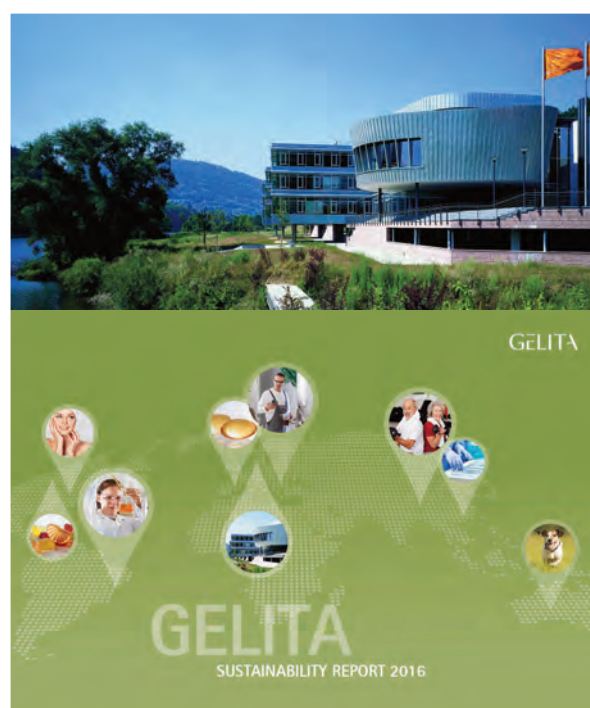
Innovation for a better quality of life

In addition to the continuous improvement of production processes, the focus is on the development of innovative products. "The quality of our products also helps to conserve natural resources, for example, when they are used in fertilizers or detergents. And they contribute to health and well-being," says Michael Teppner, Head of Marketing and Communication at GELITA. From year to year, life expectancy is increasing. Many people want to remain active and mobile in their old age. Collagen peptides in dietary supplements provide for strong bones and supple joints. In combination with regular weight training, they help to maintain muscle strength. GELITA also produces products for smooth skin, shiny hair and firm fingernails. Numerous scientific studies demonstrate their effectiveness.

When processing animal raw materials – by-products of meat production such as cattle hide or pig skin – for gelatine and collagen peptides, fats, functional proteins and minerals also arise. GELITA has developed complex processes to produce quality products from these materials – fertilizer, animal feed or biofuels, for example. "Our modern manufacturing processes mean that the raw materials are almost completely utilized in a sustainable and efficient way," says Teppner.

Focus on people

Sustainable economic management also includes dealing with employees in the right way. Occupational health and safety are top priorities at GELITA. Among other things, improving work processes or investing in safe facilities have contributed to a continual decline in the number of work-related accidents at the sites. And this despite an increase in the number of employees globally. Social commitment at GELITA does not end at the factory gate: In 2016, the company supported 96 projects worldwide, ranging from sporting events and aid for socially disadvantaged people to educating young people. The commitment includes cooperation with schools and study trips or music lessons for talented children and youngsters. Sustainable commitment at GELITA, however, means more than just material support. "Our employees themselves get actively involved in providing help," says Teppner. ■



Quebec Wild Blueberries Sorts It All Out with VERYX® from Key Technology

Quebec Wild Blueberries is dedicated to making a good thing better. Starting with wild blueberries that burst with flavour, they invest in the most advanced technology to create individually quick frozen (IQF) berries beyond compare. In 2016, this progressive industry leader installed a VERYX® digital sorter from Key Technology to produce the highest quality products. This new sorter removes more foreign material (FM) and defects from their product at the same time it improves production efficiencies.

"When we replaced an existing laser sorter with a VERYX camera/laser sorter last year, we improved our product quality and reduced false rejects. We also doubled our throughput with the same number of workers, which decreased our production costs," said Pascal Hudon, Director of Operations at Quebec Wild Blueberries. "Compared to our previous sorter, VERYX has increased our defect removal rate by about 3000 percent. It's simply incredible."

Designed to meet the needs of each application, from basic to complex, Key tailors each VERYX sorter with the ideal sensor types, sensor positions, lighting, ejection system, product handling and software to address the product's characteristics and the processor's objectives. Key configured Quebec Wild Blueberries' VERYX specifically to sort blueberries coming out of the freezer and programmed it to find and eject twigs, bits of wood, stones, moss and other FM as well as blueberries with attached stalks and foreign berries.

To sort up to nine metric tons of frozen berries per hour, Quebec Wild Blueberries selected the high-volume chute-fed VERYX C140, which features a 1400-mm wide inspection area. To maximize product quality, this sorter is equipped with front- and rear-mounted laser sensors and color cameras and Key's advanced multi-sensor Pixel Fusion™.

Front- and rear-mounted sensors achieve all-sided surface inspection to fully view each object in the product stream with no blind spots. Color cameras provide superior detection of color, size and shape, while the laser sensors distinguish structural properties to achieve the best FM detection and removal. Pixel Fusion combines pixel-level input from multiple cameras and laser sensors sharing the same line of sight to more clearly differentiate good product, defects and FM. This fully-loaded VERYX sorter removes even the most difficult-to-detect FM and defects without false rejects to help Quebec Wild Blueberries exceed industry standards while maximizing yields.

"In addition to the power of Pixel Fusion, one of the first things that attracted us to VERYX was the precision of the ejection system. Other sorters space their air valves 10mm apart, but Key designs VERYX with variable valve spacing that's tailored to the application. For blueberries, Key recommended valves every 5 mm. With double the air nozzles, this sorter is more accurate in removing defects and FM and not ejecting good product with it. We've improved our defect removal rate at the same time we've virtually eliminated false rejects," explained Hudon. "We used to re-sort our reject stream to recover good product. Now, there's no comparison – only rejects go to the reject stream so we can send it straight to the trash."

Every aspect of VERYX is designed to maintain the highest sorting accuracy. Next-generation cameras and laser sensors offer twice the resolution of previous generation sorters to detect smaller FM and product defects. Specialised infeed and collection shakers, designed for each application, further improve the sorter's performance. ■



Barry Callebaut completes acquisition of D'Orsogna Dolciaria

Barry Callebaut, the world's leading manufacturer of high-quality chocolate and cocoa products, has announced that it has successfully closed the acquisition of D'Orsogna Dolciaria. The integration will start as of today.

Antoine de Saint-Affrique, CEO of Barry Callebaut said: "We are pleased to close this agreement with D'Orsogna Dolciaria. This acquisition is a perfect fit with our 'smart growth' strategy and will allow us to further accelerate the growth of our Specialties & Decorations business. D'Orsogna Dolciaria brings unique capabilities that will enable us to offer more value added to our Food Manufacturers and Gourmet customers, especially in the ice-cream and dairy market segments." ■





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www.events.ubm.com/event/3550/fi-europe

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Anuga FoodTec

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www.anugafoodtec.com

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food europe examines the food and beverage manufacturing industries in Europe. It is published four times a year and its aim is to ensure that readers have a source from which they can learn about new developments within key areas in the food and beverage manufacturing industries. It covers the latest technologies and hot issues within the following main sections:

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