

# innovations IN FOOD TECHNOLOGY



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# innovations

## IN FOOD TECHNOLOGY

ISSUE 95

MAY 2022

**In this issue:** Gummy ingredients  
Psychology of clean-label  
Authentic mineral salts  
Plant-powered protein  
Porcine collagen  
Taste balancing  
Microalgae  
IFFA 2022 Preview



**Meat alternatives for vegan  
barbecues • Weight wellness  
Plant-based ingredients for  
health supplements  
Curcumin phytosome®  
for body detox  
Vitafoods Europe  
2022 Preview**



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### AUGUST 2022

Ice cream ingredients	Fat substitutes
Alternative proteins	Gummy ingredients
Mediterranean diet	Stress management
Health benefits of spices	
Natural preservatives	
Ingredients for sports drinks	
Chocolate and cocoa products	
Anti-inflammatory ingredients	
Sugar replacements	
Coconut-based products	
Processing techniques for plant-extracts	
Advances in micro-encapsulation	
Enhancing immunity	Infant formula ingredients
Plant-based ingredients	
Healthy snacking substitutes	

#### PREVIEWS:

**SupplySide West 2022, Las Vegas**  
**Fi North America 2022**

**Deadline: July 31 2022**

### NOVEMBER 2022

Food colours	Emulsifiers
Savoury ingredients	Healthy ageing
Plant-based ingredients	Sustainability
Healthy fats + oils	Flavoured water
Stress management	Increasing satiety
Sports nutrition	Gut health
Allergy detection	Joint health
Beauty from within	Antioxidants
Sugar replacements	Food traceability
Ice cream ingredients	Probiotics
The rise of plant-based ingredients as meat replacers	
Insect nutrition and applications	
Reducing the carbon footprint	
Micro-encapsulation techniques	
Ingredients for functional drinks	
Chocolate and cocoa products	

#### PREVIEWS:

**Fi Europe 2022**

**Deadline: October 23 2022**

### FEBRUARY 2023

Healthy snacking	Heart health
Innovative colours	Sustainability
Beauty from within	Clean labels
Plant-based nutrition	Organic superfoods
Sauces & dressings	Natural sweeteners
Alternative proteins	Sports nutrition
Savoury ingredients	Emulsifiers
Stabilizers	Probiotics
Capsule technology	Antioxidants
Supercritical extraction techniques	
Fruit flavour profiles for beverages	
Supply chain transparency	
Non-dairy milk ingredients	
Non-alcoholic beverage ingredients	

#### PREVIEW:

**Nutraceuticals Europe 2023**

**Deadline: 29 January 2022**

### MAY 2023

Weight management	Boosting immunity
Joint health	Spices & Herbs
Infant formula ingredients	Algae
Stress management	Bone health
Muscle recovery	Eye health
Improving digestion	Muscle recovery
Ice cream ingredients	Probiotics
Vegetarian capsules	Enhancing texture
Plant-based ingredients	Salt replacements
Cognitive health	Mediterranean diet
Ancient grains	
Ready-made meal ingredients	
Mushroom ingredients & applications	
Adaptogens (replacing antioxidants)	

#### PREVIEW:

**Vitafoods Europe 2023**  
**Nutraceuticals Europe 2023**

**Deadline: April 2023**



A decorative arrangement of various flowers and plants, including a large yellow sunflower, a small white star-shaped flower, and clusters of red and orange berries, positioned in the top right corner of the page.

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Auenstraße 18-20 - 85283 Wolnzach - Germany





# innovations IN FOOD TECHNOLOGY

17 ASHCROFT COURT • BURNHAM • BUCKS • SL1 8JT  
UNITED KINGDOM

## EDITORIAL

Tel: +44 (0)1628 666176 Mob: +44 (0)7905 928566  
Email: [terryprior@innovationsfood.com](mailto:terryprior@innovationsfood.com)

## ADVERTISING

Tel: +33 4 66 580 562 • Fax: +33 (0) 97 06 29 185  
Email: [davidcopperfield@innovationsfood.com](mailto:davidcopperfield@innovationsfood.com)

ISSN 1465 - 0460

## Advertising and Business Development Director David Copperfield

Tel: +33 466 580 562  
Fax: +33 (0)97 06 29 185  
Email: [davidcopperfield@innovationsfood.com](mailto:davidcopperfield@innovationsfood.com)

## Advertising and Publications Director: Terry Prior

Email: [terryprior@innovationsfood.com](mailto:terryprior@innovationsfood.com)

## Subscriptions:

Email: [terryprior@innovationsfood.com](mailto:terryprior@innovationsfood.com)



Twitter: @innovfoodtech



Instagram: @innovationsinfoodtechnology



Linked In: [www.linkedin.com/terry-prior52](http://www.linkedin.com/terry-prior52)

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Publications



innovations  
IN FOOD PROCESSING & PACKAGING

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**August 2022 issue**

**Deadline is July 31 2022**



# Kerry Group opens €125m food manufacturing facility in Rome, Georgia

**K**erry, the world's leading taste and nutrition company, has officially opened its newly upgraded facility in Rome, Georgia. A total of €125 million has been invested to create one of the most state-of-the-art food manufacturing facilities in the United States, which represents Kerry's largest-ever capital expenditure investment and one of the biggest in Georgia's history.

Dignitaries from the state of Georgia and Ireland attended the ribbon cutting ceremony, which took place on Monday 14 March. Those in attendance at the event included the Irish Minister for Justice Helen McEntee; Kerry CEO Edmond Scanlon; Chairman of the Board Philip Toomey; Georgia Economic Development Commissioner Pat Wilson; along with state and regional elected officials.

The facility, which now employs 250 people, provides integrated taste and nutrition solutions to help customers meet growing consumer demand in the poultry, seafood and alternative protein markets across the US and Canada. With a footprint of 316,000 sq ft, the facility boasts world leading food technologies and systems and has the highest standards of food safety. As part of Kerry's sustain-

ability strategy, Beyond the Horizon, the company has prioritized sustainability initiatives across the entire facility. This includes using 100% renewable electricity, zero waste to landfill, bulk receiving of materials, local sourcing where possible and the extensive use of energy efficient equipment.

Oliver Kelly, President and CEO of Kerry in North America, said: "We are delighted to officially open this new facility which more than doubles our capacity in Rome and is now one of the most advanced and modern food manufacturing facilities in the country. The increased and changing demand from consumers for tasty, nutritious and sustainable food and beverages is driving accelerated change and reshaping the entire food industry. Investing in world-class facilities, such as this one in Georgia, allows us to ensure that we can continually work and co-create with our customers to respond to this changing demand. This world-class facility in Rome, Georgia, is just one example of our dedication to our goal of reaching over two billion people with sustainable nutrition solutions by 2030. We are very thankful for the support that we have received from the Governor of Georgia's office and we look forward to this continued partnership."

## INFUSE by Cargill™ is expanding to META

**I**n a move to help dairy manufacturers better respond to evolving consumer demands, Cargill Turkey has opened a state-of-the-art technical application center and a high-tech ingredient blending production plant in Bursa, Orhangazi. The company is investing US\$5 million to expand its INFUSE by Cargill™ service and the center will serve as a regional innovation hub, supporting dairy customers throughout the Middle East, Turkey and Africa (META).

First introduced in Europe in 2020, INFUSE delivers ingredient solutions that meet new demands around nutritional balance, plant-based, and label-friendliness. It offers the ease of a blended solution that speeds up development cycles, so it can get innovations to market faster.

### Local alternative to imported products

Located in Orhangazi, Turkey, the Application Center has an ability to offer solutions for the current consumer trends like calorie or fat reduction, fiber and protein enriched foods, or plant-based foods etc. Besides these emerging trends, Cargill wants to meet META dairy manufacturers' needs like offering more affordable products to market or solving their supply chain hurdles by offering them customized easy-to-apply blends. The center includes pilot facilities that mimic full-scale dairy processing production lines, enabling Cargill ingredient and application specialists to rapidly test ingredient solutions in real-world conditions.

Cargill Foods META Executive Committee Member & Chief Product and Marketing Officer, Cem Beysel, said that the center will serve as a regional innovation area. Beysel added, "As Cargill, we have been trying to support food and beverage manufacturers both in Turkey and in the Middle East and Africa with our ever-expanding products and services. With this investment in Bursa Orhangazi,

we will serve our customers as if this place is their own R&D center. The Application Center offers manufacturers texturizing blends. Mixtures, which are used in very low quantities in order to ensure the fluidity, aftertaste, rough and/or smoothness of the foods, meet the special needs of the customers while creating the advantage of speed and low cost."

"We always start by understanding each customer's requirements, then use our technical expertise to land on the right combination and ratio of ingredients," Beysel said. "INFUSE, which sits at the heart of reformulation and innovation, represents the way Cargill helps our customers succeed."

### The most suitable formulation

Three pillars serve as the foundation for Cargill's customer focus in META: an unwavering attention to providing on-trend solutions, a commitment to speed to market, and access to deep technical expertise and resources to create ingredient blends tailored to meet each customer's unique needs.

"With more than 300 ingredients in our toolbox, we can quickly develop, deliver and optimize prototypes, dramatically shortening bench development time," Beysel said. "Given today's complex formulation challenges, the days of solving problems with a single ingredient are gone. We understand how ingredients work together and how to create optimal solutions. Producers in the META region are in search of innovative products that are suitable for consumers' preferences and taste. On the other hand, manufacturers of new generation products, especially vegan dairy alternatives, are also in search of solutions for the localization and local production of imported formulas. With the application center, we will support the development of the most suitable solution for the needs in the fastest way possible."

## Omya strengthens its growth in Asia Pacific with the acquisition of Prima Inter-Chem

**O**mya, a leading global producer of industrial minerals and a worldwide distributor of specialty chemicals, has announced the acquisition of Prima Inter-Chem Sdn Bhd, a diversified distributor of Ingredients and Specialty Chemicals in Malaysia and Indonesia.

Omya has acquired the distributor Prima Inter-Chem in Malaysia and Indonesia. With this move, Omya boosts and develops its ingredient and specialty chemicals distribution capability in these countries for the food, pharmaceutical, animal feed and industrial markets. In addition it establishes a platform for growth for the wider region.

The acquisition of Prima is another success of our strategy of acquiring complementary businesses. Prima and Omya share the same values and a business approach of helping customers and principals expand their market reach, both locally and internationally. With this acquisition, we are expanding Omya's presence, particularly in food and pharma ingredients in Asia Pacific, and our existing capabilities will be strengthened by the exceptional knowledge, experience and expertise that Prima brings to our organization. We look forward to welcoming the impressive team at Prima into the Omya Group.

Khooh Kah Pheng and Lim Kooi Fui, founders and shareholders of Prima Inter-Chem added "We are very pleased to have found a great harbor for the team and business we have built over the last 38 years. We believe that Omya is the best partner to take Prima to the next level of growth and success in Asia."

## Natac is now organic certified!

**N**atac recently announced that the Hervás manufacturing facility has received its organic certification. The certification is intended to meet the needs of partners and industry professionals, as well as the evolving demands of their consumers.

A majority of consumers believe organic foods are better for one's health as well as the environment because organic manufacturing eliminates the use of any chemical additive, synthetic substance, pesticide, herbicide, or conventional fertiliser.

The organic certification is part of a product expansion that will bolster the variety and quantity of Natac's portfolio, increasing its scope in the market. Equipped with a purely natural system of botanical production, Natac plans to solidify its place as a leader in the botanical ingredients industry of the future.

"We are proud of this achievement because it reflects the natural, sustainable business model that Natac was built upon; as well as our commitment to meeting the needs of clients and consumers," explained D. Antonio Delgado, CEO.

## ADM invests \$300 million in new innovation center

**A**DM, a global leader in nutrition, has announced that it will invest approximately \$300 million to significantly expand its Decatur, Illinois, alternative protein production, as the company continues to add capacity. ADM will further enhance its alternative protein capabilities by opening a new, state-of-the-art Protein Innovation Center, also in Decatur.

"The global trends of food security and sustainability are driving structural changes in the food industry, including strong growth in alternative proteins, and we're investing to ensure ADM remains a leader in this vast and exciting space," said Leticia Gonçalves, ADM's president of Global Foods. "The array of opportunity areas for alternative proteins in foods and nutrition solutions

is continuing to grow at 10% CAGR, with alternative meat and dairy sales alone expected to grow by 14% a year and reach \$125 billion in 2030. Our sales in this space have been growing at rates much faster than the industry's, and our work to expand our leadership position with new innovation and capacity is an important driver of future growth for our Nutrition business. We're proud to continue to invest and innovate, delivering on our strategy, supporting global food security and advancing sustainability for our customers and our future."

Last year, the company acquired Sojaprotein, a European provider of non-GMO human nutrition protein solutions. ADM will increase its global alternative protein production capacity by more than 30%.

## MGP to build new \$16.7m extrusion plant inside recently acquired production facility

**M**GP Ingredients, Inc., a leading provider of specialty proteins and starches, has announced it will build a technologically advanced extrusion plant to produce its ProTerra line of texturized proteins. The new plant will be located adjacent to the company's existing Atchison, Kansas, plant. Once online in late 2023, the new extrusion plant is expected to produce up to 10 million pounds of ProTerra per year.

Design of the \$16.7 million facility will be led by Sabetha, Kansas-based design firm 1 Solutions Group. The firm has extensive experience designing extrusion lines in the food industry (including texturized proteins) and has worked with MGP on previous extrusion projects. Construction on the new facility will begin this summer and will be completed by the end of 2023.

"Achieving in-house production of our ProTerra

line of products is a meaningful investment amid growing demand and increasing outsourcing costs," said MGP CEO Dave Colo.

The new plant will help the company meet the growing demand for its ProTerra product line, while giving it more control over the manufacturing process. MGP currently utilizes co-packers to produce its ProTerra line.

"Building this new extrusion plant gives MGP the capacity and flexibility required to continue to meet the growing demand for our ProTerra line of texturized proteins," said Michael Buttshaw, MGP's Vice President of Ingredient Solutions Sales and R&D. "By transitioning the manufacturing process in-house, we reduce lead times related to co-packer scheduling issues, increase flexibility related to R&D projects and enhance our ability to effectively commercialize new products."

## Bioiberica teams up with ByHealth to bring native type II collagen to joint health market in China

**B**ioiberica, a global Life Science company specialising in the identification and extraction of biomolecules of therapeutic value for the nutraceutical and pharmaceutical industries, has partnered with ByHealth, China's leading vitamin and dietary supplements supplier, to develop a new product for its market-leading joint health brand – Highflex. Formed in direct response to the increasing number of physically active consumers seeking joint health solutions, the partnership reinforces the position of both companies as recognised players in the global mobility market. Predominantly associated with skin health across Asia, the collaboration aims to educate Chinese consumers about the benefits of collagen supplementation on joint health.

ByHealth's Highflex type II collagen chewing tablets leverage Bioiberica's native (undenatured) type II collagen ingredient, Collavant n2, which has been shown to improve knee discomfort and function.<sup>1</sup> The tablets are the first product to result from the companies' strategic partnership, and boosts ByHealth's well-established Highflex offering, which saw a 29.25% revenue increase in the first half of 2021 and is already the leading joint health brand in China. By partnering with Bioiberica, ByHealth aims to capitalise on the untapped potential of new product development with native type II collagen and respond to the growing number of consumers looking to support their mobility with effective, convenient products across the country.

<sup>1</sup> Baklan, F. et al. Eurasian J. Med. 2016;48:95-101.



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Tel: +44 (0) 1438 742242

Email: info@kanegrade.com

NATURAL FOOD INGREDIENTS





# IFF completes acquisition of Health Wright Products

**I**FF has announced that it has completed the previously announced acquisition of Health Wright Products, LLC, a leader in formulation and capsule manufacturing for the dietary supplement industry and a long-time business partner of IFF's Health & Biosciences probiotics business.

HWP is known in the consumer Health and Nutrition industries for providing the highest-quality nutritional supplements. Using state-of-the-

art processes and equipment, HWP manufactures custom formulations and delivers encapsulation and packaging to meet the industries' exacting requirements for probiotic products. Under IFF's leadership, HWP will continue to invest in capacity and expand capabilities to meet the evolving needs of customers and consumers.

Health Wright Products employs over 225 people, all of whom will continue with the company after the sale.

## Sweeten's signature stevia approved in Colombia

**S**weeten expanded its Signature stevia footprint in Latin America after Colombia approved its stevia sweeteners made by bioconversion, a method for producing clean and non-GMO ingredients. Sweeten's rebudiosides E and I will now join the already approved D and M.

"Latin America is one of our most important markets globally," said Luca Giannone, senior vice president of global sales. "The continuous development of our Signature sweeteners and sweetener system demonstrates our commitment to investing in new technologies for helping brands tackle sugar reduction challenges and replace sugar in better-for-you food and beverages in Colombia."

Triggered by rising levels of obesity, Colombia has undergone a nutrition transition. The country has prioritized the health and well-being of children and families by adopting policies to address the obesity epidemic. Colombia's Ministry of Health has

prioritized sugar reduction by exploring sugar-sweetened beverage (SSB) taxes to mandatory front-of-pack warning labels through legislative, and public media pushes. The country joins the growing list of Latin American countries prioritizing health, including Brazil, Chile, Uruguay, Peru, and Mexico.

In South America, 52% of consumers say they are looking to moderate sugar intake in soft drinks, according to FMCG Gurus 2021. Following Brazil and Argentina, Colombia ranks third in Latin America for soft drinks new product launches and fourth for sales value in 2018.

"As new product launches have increased in recent years, brands have a clear opportunity to create healthy innovative food and beverages, replacing up to 100% sugar with Sweeten's Signature stevia and sweetener system," said Giannone.

## ADM announces growth investment in non-GMO soy processing in Mainz, Germany

**A**DM, a global leader in agricultural origination and processing, has announced a growth investment to add the ability to process non-GMO soybeans at its oilseed facility in Mainz, Germany.

"A key pillar of our growth strategy is our expanding portfolio of differentiated products, which are powering our ability to meet growing and evolving customer needs around the globe," said Jaana Kleinschmit, general manager, ADM Hamburg and country manager, Germany. "Soybeans play an increasingly important role in the wider food sector in Germany. We are pleased to be continue to add the ability to process non-GMO soybeans to meet growing demand across human and animal nutrition, while providing local farmers with increasing opportunities to market their crops."

The multi-million dollar project, expected to be complete in Q3 2023, follows the similar successful growth investment at ADM's oilseeds processing plant in Straubing, Germany, in 2016, and further expands the company's global capability to offer differentiated products to meet specific customer needs.

"With this expansion in Mainz, we are now creating additional incentives for local farmers to grow more non-GMO soybeans and to incorporate soy into crop rotation farming," explained René van der Poel, general manager, ADM Straubing. "At the same time, we are following through on our commitment to one of the key pillars of the Fields of Europe framework, which aims to meet growing demand for certified non-GMO, European origin food and feed products."

## Industry celebrates 20 years of the Food Supplements Directive – and urges renewed focus on role of supplementation

**I**ndustry association Food Supplements Europe (FSE) has paid tribute to the enduring impact and relevance of the EU Food Supplements Directive, which turns 20 this year.

Adopted on 10 June 2002, the Directive was a springboard for the EU's supplement sector to function effectively. It established supplements as a mainstream food category, providing consumers with confidence in the safety of products sold across the single market. The Directive has also proved influential globally, acting as a model for regulation and a touchstone for formulating cross-border agreements for the international supplement sector.

Prior to adoption of the Food Supplements Directive, the EU's supplement sector was growing in popularity but there was no specific regional legislation to regulate it. Member states, consumer groups and industry were keen for more effective regulation to ensure the products on sale were safe and that supplement users were not being misled. By establishing a legal framework under food law, based on notification of products instead of registration, and by harmonising the nutritional substances that can be used in food supplements as sources of nutrients, the Directive represented a major leap forward.

Patrick Coppens, FSE's Director of Scientific & Regulatory Affairs, said: "The primary goal of the Food Supplements Directive, when it was adopted two decades ago, was to protect EU consumers. It has largely achieved this objective. As we mark the 20th anniversary of the Directive, FSE believes now is a good moment to reflect on the future of the industry and on how supplementation can enable the EU to meet the social challenges we face. Europe is finally emerging from the worst of the coronavirus pandemic, which has encouraged many to think about the role of supplements in helping to increase resilience and maintain wellbeing. Accordingly, FSE is already engaging policymakers and other stakeholders in conversations about the value of supplementation for individuals and society."

Martina Simova, Chair of FSE, added: "We can feel rightly proud of the positive impact of the Food Supplements Directive. For 20 years, it has provided clarity and nurtured an environment in which reputable businesses can operate and thrive. It has struck a balance between consumer safety and access to supplements. This anniversary gives us the perfect opportunity to explore how we can build on the success of the past two decades and give fresh consideration to the role of supplements in nutrition and health policy. Reflecting this, FSE's work in the coming months and years will focus on how the industry can help EU member states achieve their health policy goals and build more resilient communities across Europe."

**The copy deadline for the August issue is July 31**  
**Send your news to Terry Prior at [terryprior@innovationsfood.com](mailto:terryprior@innovationsfood.com)**

# Kerry completes acquisition of science-backed branded botanical extract company Natreon

**K**erry, a leading taste and nutrition company, has announced it has completed the acquisition of U.S.-based Natreon, Inc., a leading supplier of branded Ayurvedic botanical ingredients.

Natreon supplies branded and scientifically studied and tested Ayurvedic extracts to the dietary supplement and functional food and beverage industries across the globe. The acquisition significantly expands Kerry's leadership position and ProActive Health portfolio of science-backed branded ingredients, furthering the company's technology growth. The branded ingredients in Natreon's portfolio are protected by a wide range of U.S. and foreign patents and supported by a total of 52 clinical studies which support the efficacy of their health benefits. Natreon's portfolio consists of the following:

- Sensoril® – Ashwagandha extract for cognitive health benefits including stress, anxiety, and sleep.
- PrimaVie® – Shilajit extract for sports nutrition and healthy aging.
- Capros® – Amla extract for cardiovascular support.
- Crominex® – Chromium complex for diabetes.
- Ayuflex® – Terminalia chebula extract for bone and joint health benefits.
- Ayuric® – Terminalia bellirica extract for uric acid health.

The ingredients will be integrated into Kerry's ProActive Health portfolio and leveraged by Kerry's

broad customer base. They will be supported by Kerry's global application and R&D network, including continued investment in the science and clinical evidence supporting the brands.

Commenting on the acquisition, Gerry Behan, President and CEO Taste & Nutrition at Kerry Group, said: "Consumers are increasingly looking for nutritional benefits when purchasing food and drink, with recent proprietary consumer research from Kerry stating that 42% of U.S. consumers are more likely to purchase a product which is backed by research or scientific data."

"Ayurveda is one of the world's oldest holistic and alternative wellness practices with historical roots in India. Today, we see growing use of ayurvedic and botanical ingredients which are trending in functional foods and beverages for their ability to deliver stress, cognitive, and energy benefits, for example. Our acquisition of Natreon allows us to participate in this dynamic market with on-trend and science-backed Ayurvedic ingredients, including the well-known Sensoril® Ashwagandha brand."

"This acquisition will allow us to deliver health benefits substantiated by clinical research to a greater number of consumers, ultimately supporting our ambition to reach over two billion people with sustainable nutrition solutions by 2030. We are delighted to welcome the Natreon team to Kerry," concluded Mr Behan.

# High-protein snacks support a healthy lifestyle

**K**eeping up with consumer trends is one of the most challenging aspects of the food industry. In recent years there has been a growing trend towards convenient, healthy, and nutritional snacks. Valio's nutritional protein snacks are developed for people with an active, healthy lifestyle.

Valio follows industry trends, and continually evolves and innovates product lines to bring new choices to the market. One of the prominent changes in the snack market has been a trend towards eating healthy foods with, for example, more protein without compromising on taste.

According to Valio's research, more than 80% of people surveyed think protein is generally healthy. 60% feel that the amount of protein they consume is relevant to their diet. Almost 50% look for protein when buying dairy products. \*

The health benefits of high protein foods are starting to appeal to mainstream consumers.

## Functional protein products for everyday consumption

Valio has successfully commercialised the booming protein trend and developed the protein rich Valio PROfeel® range of protein snacks to meet the needs of consumers.

Valio PROfeel® is food at its simplest: naturally high in milk protein (18–22 g per serving), convenient, and tasty. Protein-rich snacks are easy to eat and grasp. Information about the high protein content is printed boldly on the packaging, the graphics are bright, and it is simple to identify the key information.

Our milk products contain high-quality milk protein, which includes all nine amino acids essential for the body, making it a "complete" protein. Milk protein is also absorbed easily, why our bodies can utilise it efficiently.

## From high-protein quarks to protein-enriched milk shakes

Like all consumers, people who pay attention to their diet and dietary protein levels want variety and quality. So Valio has developed interesting flavours and free-from combinations. Valio PROfeel® range includes quarks, puddings, protein shakes and drinks in individual serving sizes.

There are options like sugar-free and lactose-free lemon-lime quark; passionfruit-flavoured quark with less carbohydrates; chocolate and mint-flavoured long-life UHT protein drinks; and chocolate nougat protein puddings and cocoa milkshakes for indulgence.

The preference for better-for-you choices are growing in all age groups and offers a significant business potential in all dairy categories

## Commercialise the protein trend with Valio Food Solutions

The global protein market continues to grow. Protein hits the sweet spot of many consumer trends, which suggests the commercial potential of an expanding base of consumers who are snacking more and seeking out permissible indulgences.

Utilise Valio's know-how now. Read more on our ingredients >

\*) Protein quantitative survey 04/2017. Valio.

# Arla Foods Ingredients receives positive Novel food opinion for BLG

**A**rla Foods Ingredients' Novel food application for its BLG (Beta-lactoglobulin) ingredient, Lacprodan® BLG-100, has received a positive EFSA opinion.

The European Food Safety Authority (EFSA) has published an opinion that BLG is safe and suitable for use in food products in the EU. It has submitted its findings to the European Commission, which is expected to grant final authorisation later in the year.

When this process is complete, Lacprodan® BLG-100 will become Arla Foods Ingredients' first product approved under the new Novel Food Regulation (EU) 2015/2283. It will be able to be used in categories including sports nutrition, health foods, and foods for special medical purposes.

In October 2021 Arla Foods Ingredients became the first supplier with the capacity for commercial production of pure BLG. Lacprodan® BLG-100 contains 45% more leucine than commercially available whey protein isolates.<sup>1</sup> This, coupled with its palatability, makes it an ideal solution for medical nutrition applications, where it can help minimise the loss of muscle mass and maintain mobility.

Lacprodan® BLG-100 also provides 26% more essential amino acids and 40% more branched-chain amino acids than commercially available whey protein. This opens up new opportunities in sports nutrition applications, in particular clear ready-to-drink beverages and powder shakes.

Niels Østergaard, Vice President, Innovation at

Arla Foods Ingredients, said: "BLG is unique – in fact it's basically a whole new protein category. Its combination of purity, amazing nutritional quality and appealing taste will create a world of new opportunities in medical and sports nutrition. We're delighted by this decision, and proud to have led the way in the development of a game-changing new ingredient."

View the EFSA opinion: <https://efsa.onlinelibrary.wiley.com/doi/full/10.2903/j.efsa.2022.7204>

Reference:

11 Gorissen et al 2018





# Roquette invests €25 million at its site in Lestrem, France, to strengthen its unique position in the polyols market

**R**oquette, a global leader in plant-based ingredients and a pioneer of plant proteins, has announced an investment plan of €25 million for liquid and powder polyols between 2022 and 2024 at its site in Lestrem (France). This major investment will establish a strong reliable supply for the future and strengthen Roquette's position as a leader in polyols. In a challenging and fast-moving environment, Roquette remains deeply committed to upgrading its facilities. Investing in polyols was and remains a strategic decision for the group to better address long-term customer expectations. Roquette's site in Lestrem is the largest polyol plant in the world offering a wide variety of products. This investment will improve equipment efficiency and increase safety standards. It will also help to standardize some industrial operations contributing to an overall production performance improvement. This evolution will ensure a sustainable supply in the market and meet the customers' increasing expectations for greater flexibility.

## Polyols for healthier and tasty food

Driven by the fast-increasing trend for healthier and sustainable food and lifestyle, the demand for nutritional solutions is dramatically increasing. According to Euromonitor, the market of healthier food products is expected to grow by about 15% in value between 2021 and 2026. Thanks to the nutritional benefits they offer, polyols are addressing this trend. Produced from plant-based raw materials such as maize or wheat, polyols are

principally used as sugar alternatives in food products such as sugar-reduced or sugar-free confectionery, chocolate, chewing gum, baked goods, or snacks. The numerous scientific publications on the nutritional benefits of polyols for the human body evidence the positive impact of polyols in a healthy and well-balanced diet.

## Polyols as key products for the pharmaceutical market

Polyols are also key excipients for the pharmaceutical sector. Thanks to Roquette's superior quality standards, polyols are well known and appreciated as pharmaceutical excipients in oral dosage forms. Directly compressible, polyols help the formulation of all types of tablets, and some are adapted for swallowable, chewable, or dispersible or effervescent tablets. The higher purity grades are also APIs (Active Pharmaceutical Ingredients) approved by worldwide drug administrations, and widely used in injectable solutions or in dialysis applications.

According to Pascal Leroy, Senior Vice-President of Core Ingredients at Roquette: "Today, Roquette is recognized as a global leader in polyols. We are uniquely positioned to address customers' needs as we strive to be the best partner for the polyols markets, offering a wide range, very well adapted to all markets and backed by a global service and technical assistance network. Thanks to this investment, we will now strengthen the reliability of the supply and our global industrial footprint."

# BENEO invests €7.7 million into new warehouse for improved efficiency

**B**ENEO, one of the leading manufacturers of functional ingredients, has announced a quadrupling of the storage capacity at its Offstein facility in Germany, to improve its efficiency and strengthen the company's business contingency resilience still further. The new high-bay warehouse, which opened in February, allows for increased storage of BENEO's crystalline functional carbohydrates Isomalt, Palatinose™ and galenIQ™. With a €7.7 million investment in this fully automated facility, BENEO continues to further improve its supply chain robustness and reduces transport.

The new 25-metre-high warehouse has a storage capacity of more than 8.500 Euro pallets and is located close to both the packaging and shipment operations at the production site in Offstein. Together with external warehouses worldwide, the addition of storage capacity in Offstein further supports BENEO's multi-storage strategy for improved business contingency. Furthermore, transport ways are reduced as a larger proportion of functional carbohydrates is now stored on-site than in external warehouses.

In their crystalline form BENEO's functional carbohydrates store well in humidity and temperature monitored facilities, such as the new warehouse. The fully automated high-bay facility allows

for a higher proportion of direct loading and is freeing up personnel from the storage and retrieval process to be used more efficiently in other onsite activities.

Dr. Ralph Cartarius, Operation Managing Director at BENEO's Offstein facility, comments: "The new warehouse gives much more storage potential for our functional carbohydrates. It also, helps us to gain cost, time and logistics efficiencies, as well as bolstering our business contingency strategy still further. Previously, the majority of our crystalline Palatinose™, Isomalt and galenIQ™ was stored externally, as the onsite facilities were limited. This expansion increases our supply security and reduces transport, but it also saves valuable time and energy for us to redirect into other operations."

The production plant for BENEO's Isomalt was opened in Offstein in 1989 and large-scale capacity expansion was undertaken at the site in 2002, with the next generation carbohydrate, Palatinose™ launched in 2005. These low glycaemic ingredients can be used in confectionery, bakery, cereals, dairy, sports nutrition products, special nutrition and many more applications. The sugar beets that are used as the basis for Isomalt, Palatinose™ and galenIQ™ are sourced from close proximity to the facility.

# DKSH signs agreement with CFF for the distribution of dietary fibers in Switzerland

**D**DKSH's Business Unit Performance Materials, a leading distributor of specialty chemicals and ingredients, will exclusively provide business development, marketing, sales, logistics, and distribution services for CFF's SANACEL® line of natural fiber concentrates for various food applications in Switzerland.

CFF is based in Thüringen, Germany and develops high-quality dietary fiber concentrates from renewable cellulose fibers. The soluble or semi-soluble fibers are diverse and used in different foods, such as baked goods, meat products, and plant products. CFF is accredited with international certifications to guarantee the highest food safety standards for its products.

Markus Zott, Business Director, CFF GmbH & Co. KG, said: "We are convinced that both DKSH and CFF can benefit from this partnership and that this will lead to success through the combination of our competencies. Our customers benefit from having direct contacts to experts on site, who can also provide support with product development. We look forward to working with DKSH."

Sandro Meier, General Manager Performance Materials, DKSH Switzerland, added: "We are delighted to partner with CFF and offer their broad portfolio of products comprised of natural raw materials to our large customer base in Switzerland. CFF is an innovative partner for natural fiber concentrates, and together with DKSH's strong distribution and marketing capabilities, we can expect rapid market penetration."

# New Vice Presidents for food fairs in Cologne

**K**oelnmesse sees great potential and international growth opportunities in its Food and FoodTec areas of expertise. In order to accommodate this growth, the business unit will be divided into two units starting 1 June 2022 and managed by two experienced trade fair managers. Claire Steinbrück, previously Director, imm cologne, has been named Vice President FoodTec. Bastian Mingers is transferring from Messe Düsseldorf to Cologne to assume responsibility for the Food business unit.

"We are delighted to have been able to gain two experienced trade fair managers in Claire Steinbrück and Bastian Mingers," says Gerald Böse, Chief Executive Officer of Koelnmesse GmbH. "Together with their teams, they will further develop and expand the future Food and FoodTec business units. I am convinced of the international growth opportunities for our existing events in these areas, but also for premieres like Anuga HORIZON."

# Tate & Lyle to acquire leading dietary fibre business in China

**T**ate & Lyle PLC, has announced that it has signed an agreement to acquire Quantum Hi-Tech (Guangdong) Biological Co., Ltd (Quantum), a leading prebiotic dietary fibre business in China from ChemPartner Pharmatech Co., Ltd for a total consideration of US\$237 million.

Quantum engages in the research, development, production and sale of fructo-oligosaccharides (FOS) and galacto-oligosaccharides (GOS). Together, FOS (from sucrose) and GOS (from milk sugar/lactose) represent around 25%<sup>1</sup> of the global dietary fibres market which is forecast to grow at around 6 percent per annum<sup>2</sup>. In China, which currently represents the majority of Quantum's sales, the FOS and GOS market is forecast to grow at around 10% per annum<sup>3</sup>.

The acquisition of Quantum significantly strengthens Tate & Lyle's position as a leading global player in dietary fibres, bringing a high-quality portfolio of speciality fibres, strong R&D capabilities and proprietary manufacturing processes and technologies. The acquisition expands Tate & Lyle's ability to provide added-fibre solutions for its customers across a range of categories including dairy, beverages, bakery and nutrition (including infant nutrition), and to meet growing consumer interest in gut health. It also significantly expands Tate & Lyle's presence in China and Asia, and extends its capabilities to create solutions across food and drink utilising its leading speciality ingredient portfolio.

Nick Hampton, Chief Executive at Tate & Lyle, said: "We are delighted to announce the agreement to acquire Quantum, a leader in prebiotic dietary fibres and a business recognised for its high-quality ingredients and solutions. This acquisition significantly strengthens our fortification capabilities and expands our customer offering in key food and drink categories. FOS and GOS are highly complementary to our existing fibre portfolio and will

enable us to offer a broader range of solutions to our customers. The acquisition is also very much in line with our purpose to support healthy living by improving gut health, and driving sugar and calorie reduction and fibre fortification for consumers across the world."

Mr. Zeng Xianwei, Chairman of the Board of ChemPartner, said: "We are proud of the Quantum business we have built over the last 20 years, providing high-quality products to support healthier living for people across China and beyond. Tate & Lyle, with its global customer reach, strong focus on R&D, and strong fibre portfolio, is the ideal company to take Quantum on the next stage of its development. I wish them and the management team at Quantum success in the future."

## Tate & Lyle appoints Dr Isabelle Esser to the Board as a non-executive director

Tate & Lyle PLC has announced that Dr Isabelle Esser will join the Board as a non-executive director and as a member of the Remuneration and Nominations Committees on 1 June 2022.

Isabelle has over thirty years' experience in global consumer food and ingredient companies. In more than twenty-five years with Unilever PLC, she held a range of innovation and transformation roles, finally as EVP, R&D Foods Transformation, Global Foods and Refreshment. After leaving Unilever in 2019, Isabelle became the Chief Human Resources Officer at Barry Callebaut AG, the Swiss-based global chocolate and cocoa products manufacturer. In April 2022, Isabelle will take up the role of Chief Research, Innovation and Food Quality Safety Officer at Paris-based Danone SA, a global consumer food and beverage manufacturer.

Dr Gerry Murphy, Chair of Tate & Lyle, said: "I am delighted that Isabelle has agreed to join the Board. Her scientific expertise and extensive technology leadership experience in our markets will be of significant benefit to the Board."

# Lantmännen acquires a minority stake in KG:s Ägg

**L**antmännen is acquiring 30% of the shares in KG:s Ägg, a leading Swedish egg packaging company. The acquisition will lead to expanding development opportunities within the Swedish value chain for eggs, and is in line with the Lantmännen strategy of increasing initiatives and investments within food supply in Sweden.

"Egg production is an important part of Swedish agriculture and eggs are an excellent, protein rich, highly nutritious food. We envisage interesting opportunities in partnership with KG:s Ägg, when it comes to continued development within product concepts, sustainability, and feed. The acquisition is a good fit with our business portfolio and in our value chain, where we can integrate both egg producers, customers and consumers," says Per Olof Nyman, Group President and CEO of Lantmännen.

KG:s Ägg was founded by KG Pettersson in 1973, has around 60 employees and is based in Linköping. KG Pettersson continues to play an

active role in the company as chair of the board. His three children have been part owners of the company since 2009, two of whom are actively involved in the company, his son Erik as CEO, and daughter Anna who is head of customer service and producer administration.

"This deal will enable us to create and secure a common Swedish platform and strengthen our market position within the egg value chain from field to fork. The partnership will boost our competitiveness and give us opportunities to achieve our goals even more quickly within areas such as product development and sustainability to deliver enhanced customer benefits. We have already been working closely with Lantmännen for quite some time in areas such as feed development. I am now looking forward to a close relationship with Lantmännen in even more areas," says Erik Pettersson, CEO of KG:s Ägg.

Carl-Peter Thorwid, Head of the Lantmännen business area Cerealia, will take a seat on the board of KG:s Ägg.



## Leading the food colour market in sustainability: GNT reveals ambitious targets in new report

**E**XBERRY® Coloring Foods supplier GNT has published a major new report that sets out its plans to become the leader in its field on sustainability.

Each year, GNT produces more than 11,500 metric tons of EXBERRY® concentrates from edible fruit, vegetables, and plants – enough to colour over 40 billion servings of food and drink.

To ensure the company is fit for the future, it has unveiled a sustainability roadmap for 2030 to optimize its environmental and social impacts across its global operations. The full plans feature in GNT's new 'Sustainability Report 2021,' which also includes detailed information on its performance last year.

Frederik Hoeck, Managing Director at GNT Group B.V., said: "Since GNT was founded in 1978, we've been revolutionizing the food colouring industry with our plant-based EXBERRY® solutions. Today, we're known for offering the most natural solutions on the market. We now want to take this to the next level and lead the industry in sustainability too. As a family business, sustainability and caring for future generations have always been part of our DNA."

GNT's sustainability strategy is built around four key pillars: better products, better operations, better agriculture, and better for people. It features a total of 17 targets for 2030, including cutting the Product Environmental Footprint for EXBERRY® product ranges by 25% and reducing the intensity of factories' CO<sub>2</sub>-equivalent emissions by at least 50%.

Furthermore, due to GNT's strong vertical integration, the company will soon be in a position to report on greenhouse gas emissions for 80% of EXBERRY® products. Covering scopes 1, 2 and 3, this data will provide important advantages for food and beverage brands as it will enable them to calculate final products' total environmental footprint.

Rutger de Kort, Sustainability Manager at GNT Group B.V., said: "We're positioning our EXBERRY® brand as the most sustainable food colouring solution on the market. GNT is committed to driving industry standards higher than ever before by providing colours that deliver on cost-in-use, performance, naturalness, and sustainability. Achieving our goals won't be easy, but we're already making excellent progress across multiple areas."

To read GNT's 'Sustainability report 2021,' click here: <https://exberry.com/en/sustainability-report-2021/>



## Burcon receives co-investment from Protein Industries Canada to develop food-grade high purity proteins from sunflower seeds

**B**urcon NutraScience Corporation, a global technology leader in the development of plant-based proteins for foods and beverages, has received a co-investment from Protein Industries Canada for the development of high-quality protein ingredients from sunflower seeds.

The \$1 million project will see Burcon partnering with Pristine Gourmet, a processor of 100% pure Canadian non-GMO cold pressed virgin oils, to further develop Burcon's novel process for the production of sunflower protein ingredients. Premium sunflower protein isolate, that contains greater than 90% protein purity and have exceptional taste and functionality, has the potential of setting a new benchmark in the growing plant-based ingredients market. Leveraging Burcon's core protein extraction and purification platform, the project intends to fine-tune and scale up an economical extraction and isolation process arising from the by-product (pressed cake) of sunflower oil production.

"Sunflower protein checks all the boxes as an ideal source of plant-based protein," said Peter H. Kappel, Burcon's interim CEO and Chairman of the board, adding, "With this investment, Burcon and Pristine Gourmet can accelerate the development of value-added premium protein ingredients coming from a by-product normally used as animal feed."

Protein Industries Canada's co-investment further supports Canadian innovation in the development of cutting-edge food technologies and

patent-pending processes to develop products that are unique in the global plant-based protein marketplace.

"Canada's plant-based food and ingredients sector has seen tremendous growth over the past several years, thanks largely to the innovation shown by our entrepreneurs and researchers," Protein Industries Canada CEO Bill Greuel said. "The development of new ingredients, processing technologies and food products is key to seeing this growth continue. As our companies work together to bring these developments from idea to full-scale implementation, Canadians can look forward to a strengthened economy, new healthy and sustainable options on grocery store shelves, and an increased ability to meet the growing global demand for plant-based protein."

Sunflower protein ingredients are naturally non-GMO, have a favourable taste profile, low allergenicity, are particularly label-friendly, and easily understood and accepted by consumers. As the world's third largest oilseed crop, behind soy and canola, sunflower seed has significant potential to be a major source of protein within the plant-based food revolution. Sunflower seed proteins produced using Burcon's extraction technology exhibit unique and potentially valuable functional characteristics as well as a nutritional profile similar to that of canola protein. Unlocking the potential of protein present in sunflower seed for mainstream food ingredient applications could mean that we would be unlocking vast quantities of novel plant protein worldwide.

## A new sales agreement for specialty plant-based nutraceutical extract worth SEK 8 million

**E**evia Health Plc, a leading health ingredient manufacturer from Finland, recently announced that it has entered a multi-year sales agreement. The sales agreement is with a Finnish customer to supply a specialty protein and fiber plant extract with excellent nutritional values and versatile product applications for the global nutraceutical market. In addition, the customer has installed a specialty dryer in the Eevia Health plant. The investment was approximately EUR 300,000, which was funded by the customer. Eevia operates the machine, and after the fulfillment of sales volumes to the customer, Eevia Health can use this equipment free of charge.

The customer is a recognized leader in the food ingredient marketplace with a European footprint. The group has annual sales of approximately EUR 300 million in 2021 and offers plant-based food solutions for the European and global markets.

The customer will fund and organize the raw material purchase, thus shielding Eevia Health from changing raw material prices. The arrangement secures a significant gross margin contribution to the Company during the period. Management expects the first three years of the sales agreement to provide revenues for Eevia Health of SEK 8 million at very high gross margins. Eevia considers the potential for much faster growth than expected for the first three years and extensions after three years.

"This sales agreement is a welcome addition to our growing order reserve, especially because this is a circular economy product with a robust margin. As we have increased our green-chemistry manufacturing capacity during 2021, we are in 2022 driving to widen our long-term product and customer portfolio. The sales agreement demonstrates that we can compete with an efficient extraction platform based in Finland and is another step towards our turnover target of EUR 25 million in 2024," says CEO Stein Ulve in Eevia Health.

## Embion joins Global Prebiotic Association to drive gut health awareness

**E**mbion Technologies, a specialist in the development of technology and ingredients for sustainable innovation, has joined the Global Prebiotic Association ('GPA'), a global resource focused on raising the profile of the prebiotics industry through education, insights, and awareness building.

Embion is seen as a rising star in the development of sustainable and advanced technology platforms aimed at revolutionising biomass upcycling while reducing waste. Its water-based processing technology converts vegetal and cereal waste into functional ingredients for human and animal nutrition with prebiotic benefits. Its flagship ingredient, Prembion™, for animal nutrition is manufactured from brewer's spent grains and supports sustainable agricultural practices while improving animal performance.

Designed to highlight the benefits of the sector to the public, the GPA concentrates on the distinct health benefits, development, production, quality, and science that underpins today's advanced prebiotic market. To facilitate this, the association liaises with several stakeholder groups, including the medical community, academic

institutions, media, government, regulatory groups, and consumers.

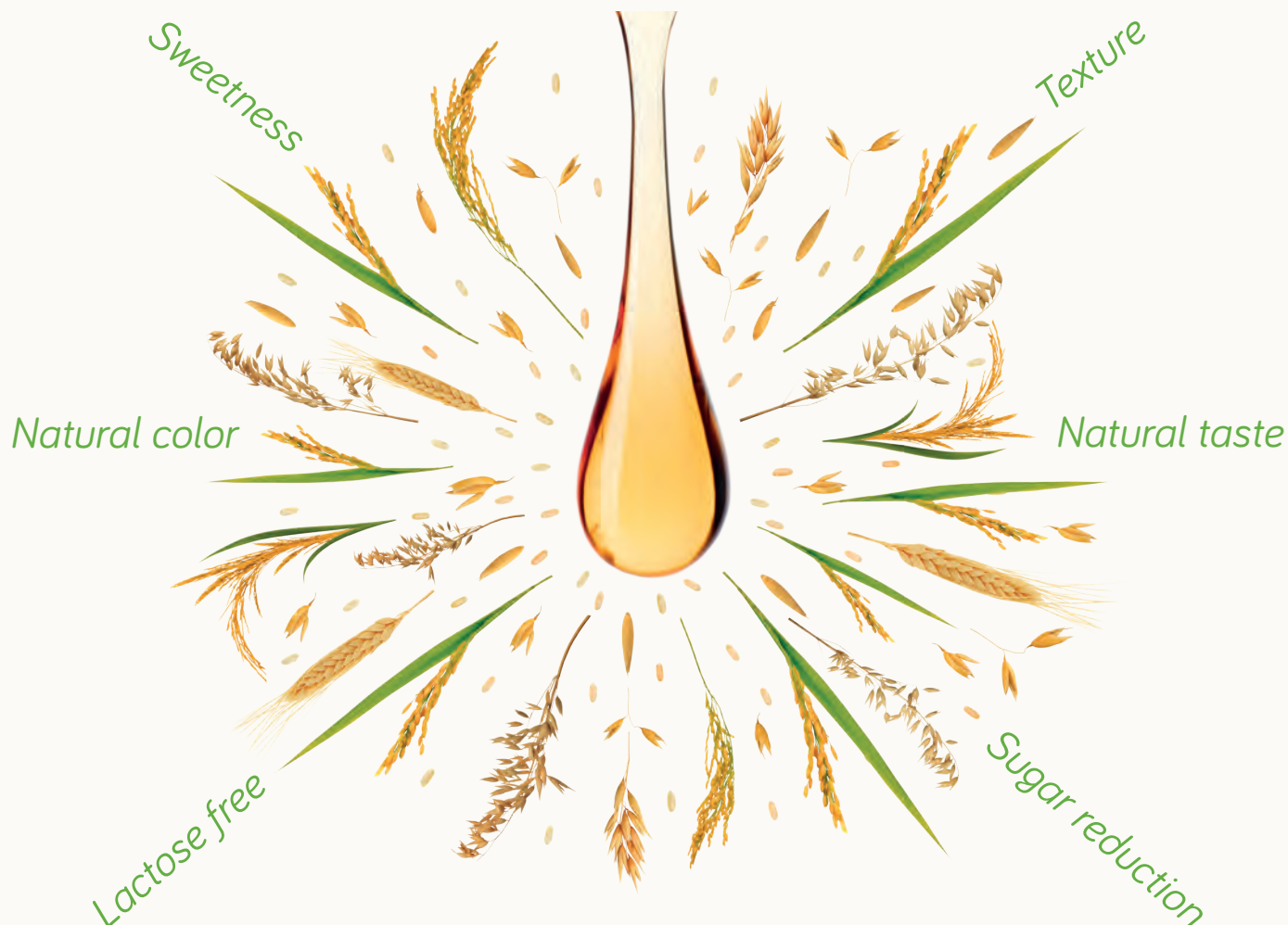
Georgios Savoglidis, Founder and CEO at Embion Technologies said, "Unique fingerprint products such as Prembion™ demonstrate the hidden wealth within wasted resources and are the future of the high potential prebiotic market for microbiome modulation. Encouraging targeted bacterial growth in the digestive tract offers real and long-term benefits to overall wellness.

"We look forward to collaborating with our industry peers within the GPA to get this message across to a wider audience by working alongside brands, retailers, and associates to drive the education initiatives that build long-term demand for the prebiotic category. We are also delighted that Jerome Duramy from the Embion team has been appointed to the GPA communications committee to assist the association in spreading awareness of the benefits of prebiotics."

Len Monheit, Executive Director at the GPA concluded, "We are thrilled to welcome Embion to the Global Prebiotic Association and look forward to their contribution as we continue to open new worlds of discovery in gut health."

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# New area of efficacy for Meriva® – Indena's curcumin phytosome®: Clinical evidence shows it's a natural and safe help for body detox



*urcuma longa* L. (a member of the ginger family, Zingiberaceae) is a perennial herb plant widespread in South East Asia and extensively cultivated in China, India, Indonesia and Thailand.

Its iconic yellow colour derives from three chemically distinct compounds, which are the active components of the plant: curcumin, monodemethoxycurcumin and bisdemethoxycurcumin. All these curcuminoids are often collectively referred to as curcumin, both on the market and also in scientific literature. However, each curcuminoid has different chemical personalities and colours and, working together or individually, they have many fields of application linked to healthy body response to inflammation.

Moreover, curcumin is one of the most studied botanical extract in the world, as about 100 human studies have been carried out on it, involving thousands of subjects.

Since year, Indena has developed Meriva®, its turmeric extract formulated with Phytosome®, one of the signature products of the company. The efficacy of Meriva® is demonstrated by more than 35 scientific studies in humans, of which at least a third were conducted with the randomized controlled scheme, relating in particular to the areas of cardiovascular, intestinal and ocular health, nutrition in sports, joint health, healthy blood levels and supportive care. In these studies involving over 2000 subjects, no adverse reaction

has ever been reported. That's why Meriva® Curcumin Phytosome® is considered the real Life Guardian™.

One of the strengths of Meriva® is its formulation with Phytosome®. As known, like many botanical ingredients also turmeric has poor solubility in water and is difficult to absorb by the intestine, with consequent limitation of its bioavailability. To face and overcome this problem, Indena has developed since years Phytosome®, a delivery system which optimizes the bioavailability and pharmacokinetic profile of active compounds of natural origin using 100% food grade ingredients (lecithin). Lecithins are natural surfactants which, together with bile salts, participate in the physiological process of absorption of lipophilic compounds and constitute the lipid double layer of cell membranes, making compounds, not readily soluble in water, more easily absorbable for example by the intestine.

Despite its long history, Indena's Meriva® Curcumin Phytosome® continues to reveal new areas of efficacy for human wellbeing. New clinical evidence shows that Meriva® is indeed an effective oxidative stress modulator, also in the support of kidney detoxing and filtering functions.

Such evidence comes from studies which have been done by important Italian universities, specifically to evaluate the effectiveness of curcumin Phytosome® for kidney health support.

Chronic renal disease is an inflammatory based disorder, and curcumin properties in modulating

body response through its antioxidant properties are well known and scientifically proven. The mentioned studies showed significant effectiveness of Meriva® Curcumin Phytosome® in being a natural and safe help for kidney health support.

The first, new study, by the University of Milan<sup>1</sup>, focused on chronic kidney disease (CKD) subjects. Chronic kidney disease (CKD) is a condition due to the progressive loss of renal function and widely recognized as one of the most relevant risk factors for developing cardiovascular diseases (CVDs).

In the pilot study, 24 CKD subjects and 20 healthy volunteers were recruited. CKD subjects followed nutritional counselling and were supplemented with Meriva® for six months. The parameters evaluated at baseline and after 3–6 months were uremic toxins, metagenomic of gut microbiota (which, as known, can play a pivotal role in controlling the origin of systemic inflammatory state and CKD progression) and nutritional, inflammatory, and oxidative status.

Curcumin significantly levelled plasma pro-inflammatory mediators and lipid peroxidation. Regarding gut microbiota, after 6 months of curcumin supplementation it was observed a more balanced composition of the intestinal microbial population. Again, the safety profile of Meriva® after long-term supplementation was confirmed, as no adverse events were observed in the supplemented group.

This recent study extended the condition-of-



use “maintaining kidney healthy” previously explored by the University of Chieti-Pescara<sup>2</sup> which had the aim to evaluate the supplementation of Meriva® in subjects with temporary kidney dysfunction (TKd) and increased oxidative stress levels.

In the study held by University of Chieti-Pescara, subjects followed either standard management or standard management plus Meriva® supplementation and they were divided according to macroalbuminuria (AER >300 mg

albumin on 24 hours) or microalbuminuria (AER 30 - 300 mg/day albuminuria), being albuminuria a marker of TKd.

The clinical evidence showed that albuminuria decreased in all subjects, with a statistically significant positive effect in the supplement group compared with controls ( $P < 0.05$ ) due to its antioxidant properties. Oxidative stress level was high in all TKd subjects at inclusion: it was significantly positively affected in the supplement group ( $P < 0.05$ ) after 4 weeks. Most supplemented

subjects at 4 weeks did not experience fatigue, another aspect where TKd impact. As for safety, compliance and tolerability to Meriva® were good.

Indena's Meriva® is the most studied curcumin on the market, in over 10 different health conditions including renal aging. Its formulation as a standardized turmeric extract containing the full bouquet of curcuminoids, not just curcumin, based on Indena's Phytosome®, makes such ingredient actually unique.

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[www.indena.com](http://www.indena.com)

## Comprehensive study gives CURCUGEN® big green light for safety



**A JUST PUBLISHED RESEARCH** study confirms the long-term safety of Dolcas Biotech, LLC's CURCUGEN® curcumin formulation. With multiple scientific evaluations already having firmly established the oleoresin-based turmeric (*Curcuma longa*-L.) formulation's bioefficacy and high bioavailability, this recent preclinical safety evaluation demonstrated unequivocally that there is zero indication of any general toxicity, genotoxicity or adverse events associated with long-term use.

The independently conducted, safety evaluation published in the *Hindawi Journal of Biomedical Research International* and led by Somashekara Nirvanashetty, PhD, et al., sought to establish the safety of CURCUGEN using a standard series of in vitro and in vivo safety studies, in accordance with OECD guidelines. This included the toxicological assessment of acute, oral, and 90-day repeated dosing.

The single dose of CURCUGEN administered orally to Sprague-Dawley (SD) rats demonstrated a non-lethal dose of as high as 5,000mg/kg body weight. A sub chronic assessment of CURCUGEN, as administered to SD rats over 90 days resulted in a no observed adverse effect level (NOAEL) at a dose of 2,000mg/kg body weight/day. This was confirmed

through comprehensive screening of blood serum markers encompassing organ function and urine analysis. Moreover CURCUGEN did not elicit any genotoxic or mutagenic abnormalities with long-term use.

Confirming its safe and effective status, Dolcas Biotech president K. G. Rao remarked, “Not only does the knowledgeable, label-reading consumer of today demand to know what's in the products they consume, they want to be reassured of their impeccable safety.”

CURCUGEN is a 100% turmeric-derived, bioavailability-enhanced, water-dispersible curcuminoids active patented for its unique, clean-label coextraction of polar-type resins from the oleoresin. The turmeric oleoresin is the matrix where curcuminoids, essential oils, and resins exist together in nature. The proprietary manufacturing process does not remove, further refine, and then reconstitute these active compounds, as do other formulations on the market. Instead, the process optimizes their interaction – particularly with water – so that the otherwise lipid-soluble curcuminoids disperse for heightened functional and biological activity.

CURCUGEN already has proven an effective

supplement to support joint function and reduce pain secondary to inflammation. A study published last year revealed that the natural turmeric extract helps support mood and gut health, including helping to ease the symptoms of IBS. CURCUGEN is a patent-pending, food, beverage, and supplement-friendly, pure turmeric-sourced botanical. It is standardized to 50% curcuminoids, 1.5% retained turmeric essential oil, turmeric polysaccharides, and resins. Overall, it has demonstrated powerful antioxidant and anti-inflammatory capacity at doses of only 500mg per day.

Unlike standard formulated curcumin products, CURCUGEN preserves the natural composition of curcuminoids with fidelity to the turmeric rhizome.

CURCUGEN has already attained Self-GRAS status, and the new study positions the company to apply for full FDA GRAS status later this year. “The enhanced bioavailability of CURCUGEN, with its 39-times greater free curcumin absorption profile, allows the consumer to feel confident knowing the product is completely safe and fully clean label,” Rao concludes.

Be sure to visit Dolcas Biotech at Vitafoods Europe in Geneva, May 10-12, booth number B109.



# SipaPro-Oat, the world's first organic oat protein concentrate

## 1 Introduction.

Protein fulfills many roles in our body. It is crucial for building and repairing tissues, allows for signal transmission, plays a vital role in many metabolic reactions and coordinates numerous bodily functions. In addition, proteins also maintain proper pH and fluid balance.

Veganism is on the rise, and with it, the search for new alternative plant-based proteins. Food and beverage manufacturers are looking for proteins to create and enrich new high protein formulations. The choice of protein type mainly depends on the organoleptic properties such as taste but also the price, availability and sustainability are decisive factors. Sipapro-Oat is a perfect candidate to fulfill all those requirements. Sipapro-Oat is an oat protein concentrate that guarantees minimum 56% of proteins, 26,5% of carbohydrates, of which 15% are fibers and 8,5% of lipids

## 2 Sipapro-Oat and sustainability.

Sipapro-Oat is a sustainable protein source. It is a by-product from our all natural, chemical-free production of oat syrups:

We usually start our production process with cereal grains or flour, which is different from the traditional industries who mostly use starch as their starting point. After the initial step, we add water and heat our mixture. We then cool down to a temperature acceptable for the enzymes to perform their hydrolysis. After the hydrolysis, we separate the soluble matter from the insoluble one. The soluble part goes through an evaporation and concentration step and finally results in our oat syrups. The insoluble by-product is rich in protein and fiber. This side stream goes through an enrichment and drying step, which gives us

## Nutritional profile of Sipapro-Oat

THE ALMIGHTY OAT Nutritional information Sipapro-Oat		
Energy: 406 kCal / 100 g	Method	/ 100 g
Dry Substance		95 g
Moisture	ISO 712	5 g
Carbohydrates	Calculation	26,5 g
Of which fibers	Van Soest	15 g
Protein	ISO 20483 (N*6,25)	> 56 g

ultimately our Sipapro-Oat protein concentrate. This unique and innovative production process is 100% in line with the organic philosophy. The fact that this process validates all side streams and uses all of the oat components, makes it a fully sustainable protein source.

## 3 Sipapro-Oat, a unique nutritional and product profile.

In addition to a protein content of minimum 56%, Sipapro-Oat also contains on average 26,5% of carbohydrates, of which 15% are fibers. Sipapro-Oat also contains 8,5% of lipids.

Sipapro-Oat also has a good amino acid profile. It contains, apart from lysine, quite high amounts of essential amino acids compared to

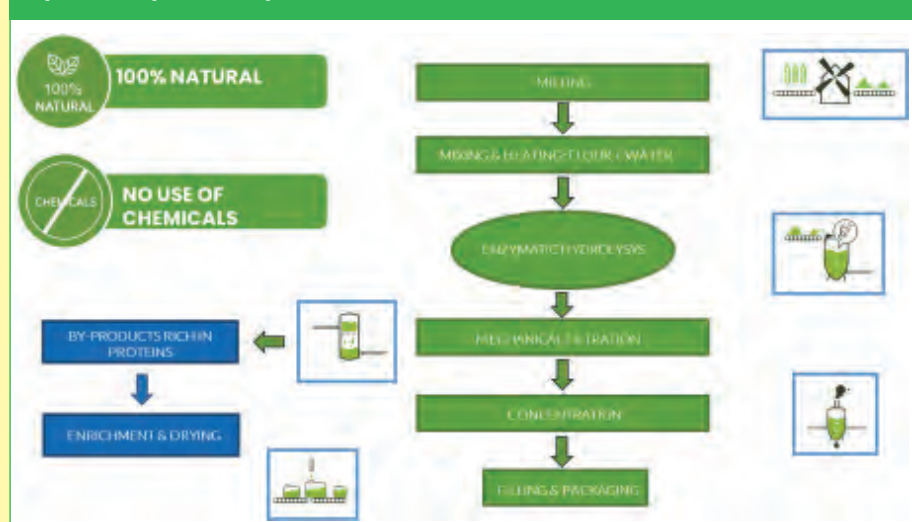
other cereals. This is because oat proteins are mainly comprised of globulins, a form of storage protein that is higher in essential amino acids compared to another storage protein called prolamins, which are more predominant in other cereals.

The Protein Digestibility Corrected Amino Acid Score is 0,59. This is mainly due to the lower amount of lysine found in oat protein. To correct for the PDCAAS, a simple solution pops up: combining with Pea Protein. Pea protein tends to be quite low in Sulphur-containing amino acids

(such as the essential methionine and the non-essential cysteine) but is high in lysine. Sipapro-Oat is quite high in methionine and cysteine, but low in lysine. Combining the two gives a perfectly balanced amino acid profile.

Sipapro-Oat is especially high in glutamine. Whilst glutamine is not an essential amino acid, it is considered as a conditionally essential amino acid. It tends to run low in during times of disease or health problems. Adding glutamine to your diet can be quite beneficial. Glutamine is one of the most important amino acids for a healthy digestive tract since it is involved in maintaining the integrity of the intestinal wall. Glutamine is also nicknamed as "the calming amino acid" since it has been shown to reduce anxiety, as well as sugar and

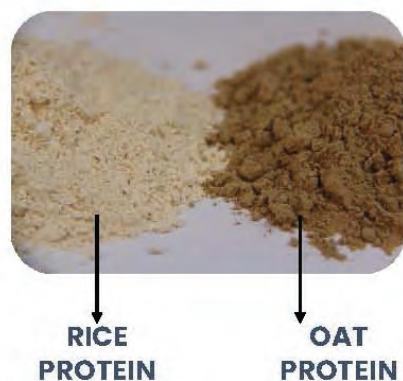
## Sipapro-Oat production process



## AA COMPOSITION

AMINO ACID COMPOSITION (% DS)		
Amino acid	Method	%DS
Asp	CE 152/2009	5,7
Thr	CE 152/2009	2,5
Ser	CE 152/2009	3,4
Glu	CE 152/2009	15,2
Pro	CE 152/2009	3,8
Gly	CE 152/2009	3,3
Ala	CE 152/2009	3,2
Cys-Cys	CE 152/2009	1,7
Val	CE 152/2009	3,9
Met	CE 152/2009	1,5
Ile	CE 152/2009	2,8
Leu	CE 152/2009	5,6
Tyr	CE 152/2009	2,8
Phe	CE 152/2009	3,9
His	CE 152/2009	1,6
Lys	CE 152/2009	2,6
Arg	CE 152/2009	5,0
Trp	TRYPTO 95/05	1,0

## SipaPro-Oat, a plethora of applications



alcohol cravings. Studies also have shown that glutamine supports the immune system and is especially beneficial for patients fighting viruses or overwhelming infections.

SipaPro-Oat has a good digestibility of 90% and comes with a water holding capacity factor (WHC) of 2,48. WHC is the ability of, in this case, protein to hold on to its own or to added water during processing. An ingredient with high WHC can improve the texture of a food product. It can also be used to improve the juiciness of a food product after cooking.

SipaPro-Oat is a fine, free flowing, non-sticky, light brown to brown powder that can easily be incorporated into many food and beverage formulations.

### 4. Sipapro-Oat, a plethora of applications

Thanks to its neutral and bland cereal taste, which is a significant advantage compared to many other plant-based proteins, Sipapro-Oat is an excellent ingredient for many applications. Applications range from high protein bread and pasta to protein enriched smoothies and cereal bars to meat alternatives. Why not make an OatBurger for example?

### 5. Sipapro-Oat, a clean label solution

The clean label trend continues to grow with consumers wanting more information about what they buy and consume. Besides that, most consumers nowadays ask for transparency from their manufacturers in the form of an ingredient list that consumers understand and with words they can pronounce.

As a result, many consumers base their decision to buy a product based on a clear, clean, and short ingredients list. However, with the latter in mind, consumers still want a great tasting product!

This challenges manufacturers to reformulate some of their original products, but they must do so without compromising on taste, color, texture, and mouthfeel.

Clean label means that a product only features natural and/or organic ingredients grown by non-GMO standards, is the least processed possible, comes from sustainable farming practices, has a low environmental impact, and a short, understandable ingredient list.

Chemically processed foods, also called ultra-processed foods, tend to be high in sugar, artificial ingredients, refined carbohydrates, and trans fats. Because of this, they are a major contributor to obesity and illness around the world.

SipaPro-Oat is a perfect example of a clean ingredient produced via an all natural and clean

## THE OATBURGER

INGREDIENTS	/ 200 g
SIPAPRO-OAT	20
PEA PROTEIN TEXT	30
POWDERED EGG WHITE	2
FIBER	2
WATER	80
FINE BREADCRUMBS	5
SUNFLOWER OIL	3
TOMATO CONCENTRATE	4,4
VEGETABLES	51
SIPA WHEAT F28	1,6
DRIED CHIVES	0,6
HERB MIX	0,2

GOOD TEXTURE

GOOD TASTE

GROUND BEEF RESEMBLANCE



## Or how about some high oat protein pasta!

### HIGH OAT PROTEIN PASTA

INGREDIENT %	
FLOUR T55	20
DURUM WHEAT FLOUR	20
WHEAT GLUTEN	3
SIPAPRO OAT	14
WATER	43

36% of calories coming from proteins



process. You can simply declare it as "organic oat protein concentrate" in the case of our organic version or as "oat protein concentrate" in the case of our conventional version.

### 6. Meurens Natural SA, sustainable innovation as a core value

Meurens Natural has been a pioneer in the organic sector and has been focused on producing clean label organic and natural cereal extracts for more than 30 years. With a unique and innovative production process, that is 100% in line with the organic philosophy, that includes five essential steps: milling, hydrolysis, mechanical filtration (our filtration step is carried out completely mechanically, without the use of conventional methods, technical and chemical agents, and without demineralization), evaporation, and packaging, we are able to offer our customers ingredients that are all natural and organic. As the European specialist in cereal hydrolysis, Meurens Natural is able to hydrolyze a wide variety of cereals using flour and not only starch as in the conventional glucose industry.

The hydrolysis of flour as part of a production process that is clean, simple and environmentally-friendly provides the following advantages: no use of chemical additives as does the conventional industries (such as H<sub>2</sub>SO<sub>4</sub> – sulphuric acid, NaOH – sodium hydroxide, Na<sub>2</sub>CO<sub>3</sub> – sodium carbonate, SO<sub>2</sub> – sulphur dioxide), no conventional processing methods such as the use of ion exchange resins

for demineralizing (refining) sweetened juices or fruit juices, a complete traceability from the raw material up to the syrup, and all characteristics of the processed cereal are preserved to the maximum: taste, color and minerals. This allows for a short, clear, and clean labelling.

Using a wide variety of sugar structures, dextrose equivalents (DE), sweetness, viscosities, colors, flavors, and raw materials, the Sipal® (organic) and Natu® (conventional) ranges are able to achieve a multitude of objectives for all preparations in the food processing sectors.

Our latest innovations include organic and conventional rice and oat proteins.

Aside from above mentioned examples, we also have organic and natural extracts in our portfolio coming from corn, barley malt and wheat. We also have a wide range of tailor-made ingredients in our portfolio, especially designed to meet different customer needs.



Contact us for more information at [contact@meurensnatural.com](mailto:contact@meurensnatural.com) or visit us at [www.meurensnatural.com](http://www.meurensnatural.com)





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# Flexitarians drive innovation in plant-based proteins

**I**n recent years the plant-based trend has moved from being niche into the mainstream. Now, new research<sup>1</sup> shows that flexitarian consumers are driving the demand for plant-based food, and that they are especially interested in transparent labels, sustainability, health and food adventures. Here Olivier Chevalier, Senior Product Manager Functional Proteins at BENEÓ, discusses how plant-based demand has shifted, the improved taste and texture profiles manufacturers are requiring, and how textured wheat proteins are part of the solution.

Reducing meat and dairy is now well and truly on the consumer's agenda. BENEÓ's latest plant-based consumer survey<sup>1</sup> shows that globally

almost 6 in 10 people are now paying attention to their meat consumption and more than 3 in 10 are choosing to limit their dairy consumption. In fact, almost half of the respondents to BENEÓ's survey are (very) interested in plant-based nutrition. That is why understanding the key motivations and expectations for plant-based purchasing are vital for product development and marketing success.

## Sustainability and health drivers

Plant-based products have seen immense growth over recent years. While the first wave of plant-based popularity was driven from a somewhat niche audience of health and eco-conscious shoppers back in the 1980's, today the booming trend has shifted into the mainstream as more

consumers incorporate plant-based products into their diets. Many consumers are doing so to promote their long-term health and also to reduce their impact on the planet. Looking at the research findings<sup>1</sup>, these environmental and health benefits of opting for plant-based meat and fish alternatives are clearly of particular importance to UK consumers. When asked why they would buy plant-based meat and fish substitutes, the top four reasons given were that it was better for the planet (44%), supported a well-balanced diet (42%), was better for animal welfare (41%) and helped people to take good care of their bodies (35%).

## On-pack messaging

With sustainability and health both significant motivations to purchase plant-based products for consumers across the globe, it is no surprise that on-pack messaging that reinforces these priorities is proving popular. With this in mind, the most convincing claims for UK consumers looking to buy plant-based meat and fish alternatives include 'natural ingredients' (80%) and claims related to weight management - 'low in fat' (82%) and 'low in calories' (79%) - as well as 'meat-free' (81%)<sup>1</sup>.

## Flexitarian purchasing power

One in four consumers globally now describe themselves as flexitarian<sup>4</sup>, which is one of the driving forces behind the popularity of plant-based nutrition. Compared to other consumers, flexitarians are especially interested in sustainability, transparent labels, health and food adventures. The majority take active steps to make their nutrition healthier, with about 7 in 10 paying attention to on-pack information and nutritional claims. Half of flexitarians also want to keep up with the latest food trends<sup>1</sup>. This creates exciting product development opportunities for those



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producers who can meet their demand for more adventurous foods across a range of applications and different cuisines. However, similar to the general population, pleasant taste and texture remain key to repeat purchase for flexitarians.

#### Taste and texture still rule

Although consumers see sustainability and health as key drivers when purchasing plant-based products, taste and texture are still of great importance. In the past, the taste of plant proteins had a limiting effect on their appeal. However, thanks to increasing efforts in new product development, companies such as BENEØ have now developed high quality plant protein ingredients with a neutral taste and other technical benefits, enabling manufacturers to create plant-based products with a taste and texture that is very close to the "original" products. The ability to mimic the same taste sensation is a key aspect for success as 8 in 10 flexitarians state that meat alternatives should be tender and easy to chew, like real meat, while almost 7 in 10 expect a meat flavour<sup>1</sup>. Thanks to the neutral taste of BENEØ's plant-based texturates, which eliminate the need for masking undesired flavours, the sky is the limit when it comes to creating tantalising taste profiles.

#### Growing appeal of wheat protein

Wheat protein holds great promise in this regard. Especially when you consider that more than half of the consumers in the UK find wheat a (very) appealing plant-based source for meat and fish alternatives. Given this popularity, alongside the fact that taste has been identified as a key repeat purchasing driver for consumers, more and more producers are opting for using wheat when developing plant-based alternatives.

As well as having a neutral taste, wheat can deliver a variety of textures in a wide range of meat-free applications. Wheat protein is also an excellent source of many amino acids (such as cystéine, méthionine, phénylalanine, tyrosine and tryptophane). As such, wheat-based protein is one of the most promising meat substitutes for meat-free burgers, nuggets and vegetarian sausages, to name but a few.

#### Adapting wheat protein to meet changing needs

BENEØ's textured wheat protein, BeneoPro W-Tex, has been proving popular in a range of meat-free applications. Produced in Belgium using wheat of Belgian, French and German origin, to reduce food miles, it has grown in popularity since its launch in 2019. The ingredient has even been extended into a range, to meet changing producer demands.



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The BeneoPro W-Tex range contains 60-75% protein, is experiencing strong demand from producers due to its unique alveolar structure<sup>2</sup> that allows the development of meat-like juicy texture. It also takes only 5 to 15 minutes to hydrate, eradicating the need for long soaking and making it convenient for production. As well as enabling the creation of meat-free products with a meaty texture and granular, fibrous structure, BeneoPro W-Tex can also be flavoured with a variety of tastes, herbs and spices, making it a flexible meat substitute.

To meet the more adventurous demands of today's flexitarian consumers, producers are looking for even more versatility when it comes to fine-tuning their plant-based product's organoleptic profile (its taste, sight, smell and touch) and its texture. To facilitate this process, BENEØ has developed a range of BeneoPro W-Tex variants that deliver, both in terms of taste and texture, no matter the plant-based food application.

**Minced beef replacement** - BENEØ has created two prototype BeneoPro W-Tex variants - with 7 mm and 5 mm as average particle sizes. They are ideal for the preparation of ground meat products such as plant-based burgers and meat-free meatballs, and can also resist tougher processing conditions and freezing, making them ideal for minced meat replacement in frozen vegan ready meals.

**Plant-based sausages** - BeneoPro W-Tex's existing formulation has been recreated using a textured protein of smaller particle size of average 5 mm, instead of the standard 7 mm, for producers looking for finer textures in plant-based sausages (emulsified or not).

**Chicken strip alternatives** - For those producers looking to replace the texture of chicken, in imitation chicken nuggets or strips, a variant has been created that has a slightly lower

protein content of a minimum 60% (on dry matter). It has a higher water holding capacity and as a consequence creates softer, juicier, more chicken-like textures.

With demand for plant-based products continuing to grow and consumer palates becoming more discerning, it is only those manufacturers that can deliver in terms of taste, texture and interest that will be able to capitalise fully on this trend. It is now possible for producers to meet these increasing demands, sustainably, thanks to the product development work of functional ingredient's providers such as BENEØ.

#### References:

1 BENEØ Global Plant-Based Survey 2021 - Insites Consulting conducted an online quantitative survey in July 2021 in Spain, France, Germany, Poland, UK, US, Brazil, Australia, China and Russia: min. 1000 consumers/ country = 11,990 consumers in total; sample of flexitarians = 2905.

2 A structure composed of many very small cavities more or less ordered, like honeycomb



For further information on BENEØ and its ingredients, please visit: [www.beneo.com](http://www.beneo.com) and [www.beneo.com/news](http://www.beneo.com/news)

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BENEØ has long-term experience in developing and producing ingredients from natural sources for food, feed and pharmaceutical products. These plant-based functional ingredients help improve the nutritional and technical properties of a wide variety of products, by supporting health and optimising taste and texture. The company's portfolio includes functional carbohydrates from sugar beet, prebiotic chicory root fibre, plant-based proteins and speciality ingredients from rice. Through a unique chain of expertise, including the BENEØ-Institute that provides decisive insights into nutrition science and legislation, and the BENEØ-Technology Center that consults in application technology, BENEØ supports customers by providing ingredients that promote a healthy lifestyle in a holistic way. Formed in 2007, BENEØ is active in over 80 countries, employs more than 1000 people and has five state-of-the-art production sites in Belgium, Chile, Germany and Italy.





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# Symlife™ taste balancing – making good-for-you products taste great

## Tasty health – a top priority today

Over the past decades, consumers, retailers, and regulators have grown increasingly aware of the detrimental health effects associated with immoderate sugar, sodium, and fat intake. They can cause obesity and cardiovascular diseases. Government bodies and health institutions are advocating a reduction of these foods. This has resulted in a strong global push for food and beverage manufacturers to reformulate their products. The overall shift towards health benefits has also brought a trend towards fortification and enrichment. It aims at achieving good-for-you products. Consumers often deem them more attractive.

## Taste continues to present key challenge

While consumers desire good-for-you products, taste continues to drive their preferences. In this context, taste perception forms a complex process. It involves many multisensory interactions. Any change in the food or beverage matrix influences these interactions. Often, this results in a taste gap that ultimately affects consumer preference. For instance:

Sugar, salt, and fat reduction may lead to a loss of sweetness or saltiness perception, mouthfeel and body, a decrease in overall taste intensity, as well as revealing bitterness, or astringency

The use of ingredient replacers like sweeteners results in different taste dynamics during the time of consumption and the addition of off-notes

The fortification with nutrients and the addition of proteins, including plant-based proteins, may lead to off-notes such as bitterness and astringency.

## Holistic approach to bridge the taste gap for taste, nutrition, and health solutions

Symrise maintains a long-standing research and development program to deliver against this macro-trend and its complexities. This way, it is supporting manufacturers in their efforts to offer great tasting food and beverages with low or no sugar content. The extensive Symlife™ taste balancing toolbox provides a holistic approach to bridge taste gaps for the development of taste, nutrition, and health solutions.

By rebuilding and optimizing the overall taste profile of products, the taste balancing solutions of Symrise help to create winning tastes and to drive consumer preference.

The Symlife™ solutions also help to make products with fortified nutritional profiles taste great. Adding desirable ingredients like fibers, vitamins or minerals and removing fewer desirable ingredients like sugar, sodium or fat can lead to bad taste effects. Taste balancing supports in making those good-for-you products taste great. It masks undesirable notes and rebalances the overall profile of the product. This includes masking of bitterness, astringency, acidity, and off notes or boosting of flavor profile impact, creaminess, mouthfeel, or sweetness. This way, the solutions additionally contribute to a healthier lifestyle by making healthy eating enjoyable.

To achieve this, the Symlife™ taste balancing toolbox offers solutions to rebalance sugar, fat, and sodium perception, to build umami, mask off-notes and add sensations. It pursues the objective to optimize the overall taste profile of a product to keep great taste in good-for-you products across categories. This ranges from beverages to dairy applications, sweet, culinary and snack products.

## Rebalancing overall taste for sugar reduced products

To tackle sugar reduction, food and beverage manufacturers commonly employ two different approaches. Either they aim for a partial reduction of sugar, potentially with the addition of sweeteners. Or they aim for a total reduction by entirely taking out sugar from the formulation and replacing it with sweeteners.

Still, to date, real candidates to fully replace sugar are missing. Any modification on sweetening systems impacts the product's overall taste experience. This includes the basic taste, flavor profile (e.g., the intensity or fruitiness of a strawberry taste), mouthfeel and sweet taste dynamics (e.g., sweetness onset and lingering).

## Sugar reduced products that consumers love

Sweeteners in general can close the sweetness

intensity gap in sugar reduced products. Concurrently, it takes more than a single substance or a combination of sweeteners alone to rebalance the sweetness profile and overall sweetness dynamics. One must consider the entire taste dynamics, like onset, mouthfeel, and masking of lingering aftertaste. Here, the tailored Symlife™ solutions help to rebalance the overall taste profile according to each manufacturers' unique needs.

For example, manufacturers can carry out a small sugar reduction meeting all sweetness dynamics of sugar. For this, they need to optimize the overall taste with a taste balancing flavor and potentially some adjustments in the food matrix. Higher sugar reduction or a 100% sweetener based sweetening system required something more. It might need a taste optimization with a combination of taste balancing flavors, masking flavors, sweeteners, and other complementary ingredients. Also, the food matrix may require adjustments.

## Symrise key differentiators

In this context, Symrise sets itself apart with the broadest range of natural taste balancing solutions. It tailors them to the customers' product bases. These solutions combine the best of nature with the best of science to support natural and healthier diets. Symrise owns a unique IP portfolio of natural taste balancing solutions. It includes industry leading patent strength in optimizing sweet taste profiles and rebalancing mouthfeel in sugar reduced products. Additionally, the experts develop natural taste balancing materials from side streams. This enables them to support a circular economy. Also, they are continuously researching in an in-house selection, breeding and cultivation program.

Another strength lies in the in-depth consumer and market understanding of Symrise. Consumer-centricity provides the key to help manufacturers deliver satisfying product experiences and enable agile reactions to evolving trends. To generate these insights Symrise works with a broad variety of proprietary and external tools. This includes the proprietary Trendscape™ study to identify product, ingredient, and flavor



trends for products low in sugar. Also, tools such as Symscript™ support the analysis of consumer preferences. The in-house sensory language systematically describes sensory gaps and the ideal taste profile of products.

To enable full taste enjoyment in reformulated products, it consequently requires a high application expertise. Symrise understands the interactions and synergistic effects of taste balancing tools and food matrices. This application know-how and analytical capabilities enable it to tailor taste solutions according to the specific end uses and formula needs. Food and beverage manufacturers received solutions that work in their end product, drive preference, and give them a unique edge to drive product recognition.

Symrise also trusts in a close collaboration approach. It ensures speed and agility in delivering tailored solutions by engaging manufacturers at an early stage. This helps understand their specific needs. It also facilitates applying their cross-functional capabilities to deliver unique taste solutions. They meet the requirements reg. cost-in-use, labeling, and taste performance.

On top, Symrise can support with its strong regulatory expertise. Expert teams help customers navigate the complex regulatory landscape to determine market relevant labeling and on-pack claims.

#### **Symlife™ taste balancing for great tasting good-for-you products**

In a nutshell, Symrise offers all-in-one support for its customers. This enables them to create good-for-you products with the full taste enjoy-

ment of a sweet product. The Symlife™ portfolio supports in balancing taste in low and no sugar products and optimizes taste and thereby drives consumer preference overall. This ability comes from dedicated long-term research activities in this field and a holistic, global approach to innovation. Also, contributing are deep insights into consumer needs, processes, and product development. Symrise possess a unique taste expertise at molecular level to act as partner of choice. It delivers natural taste balancing solutions for great tasting good-for-you products.

**Author:**  
**Leif Jago**  
**Junior Marketing Manager**  
**Global Marketing Food & Beverage**  
**Taste Nutrition & Health**



[www.symrise.com](http://www.symrise.com)



## **The flexitarian way of living.** **Tasty and nutritious plant-based ingredients.**

A mind-boggling 25% of consumers globally are flexitarians. They are drawn to plant-based options because of their healthful appeal, ecological convictions or the pleasure of trying something new. BENEØ helps you develop plant-inspired options that are simply delicious. Sharpen up your recipe with natural ingredients that bring out pure flavours and exciting textures. Create a taste experience consumers will thoroughly enjoy with new and inspiring dairy-free or meat-free recipes. What will be your signature ingredient?

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connecting nutrition and health



# Consumer drivers shaping weight wellness

Andreas Petrik  
Director Category Marketing –  
Specialized Nutrition (EMEA)  
ADM



Consumers are increasingly taking a proactive approach to support their holistic health and wellness. Recent changes in lifestyle, such as lower activity and higher stress levels, have advanced this mindset. In fact, 57% of European consumers are aware of the need to lead a healthy lifestyle due to COVID-19<sup>1</sup>. There is also a growing awareness of how weight can affect overall wellness. Research finds 42% of European consumers are trying to lose weight, and 34% say they will engage in more physical activity as a result of COVID-19<sup>1</sup>. This self-awareness is becoming increasingly prevalent around the world too, with 75% of consumers in the U.S., Brazil, China, Germany, India and Mexico reporting that “not

being overweight” is an area of focus<sup>2</sup>.

## From Weight Management to Weight Wellness

Contemporary wellness has evolved the concept of dieting and weight management to a more comprehensive approach that includes physical and emotional well-being. More people are aware of the intersections between their weight, how they feel and how they function. Consumers are becoming increasingly mindful of how to maintain a healthy weight. With less focus on counting calories or numbers on the scale, people are embracing nutrition and exercise habits that they believe will contribute to their general wellness. For instance, 70% of European consumers

say they plan to eat more healthily as a result of COVID-19<sup>1</sup>. Many stated they plan to add more fruits, vegetables, protein and omega-3 fatty acids, and they are reducing their sugar intake<sup>1</sup>. Additionally, the pandemic has inspired one-third (33%) of European consumers to make greater efforts to seek out food and drink with added functional ingredients<sup>3</sup>.

## Nourishing the Gut Microbiome

Consumer awareness of the gut microbiome is growing, and many consider it to be the root of well-being. As such, shoppers are seeking microbiome-supporting solutions in all product categories. Consumers in the U.K. reportedly associate probiotics with gut health, overall well-being and immune function support<sup>4</sup>. From yogurts to kombucha, probiotics are increasingly called out on product labels. Moreover, our research shows that fibre is the number one ingredient consumers want to add to their diets for reasons like digestion, weight management and satiety<sup>5</sup>. Fibre can be found in meal-replacement drinks, artisan breads, chips, crackers, frozen desserts and much more.

As for what's next in microbiome support, postbiotics are a rising star. These bacterial products do not contain living microorganisms, so they retain stability during harsh processing conditions, making it possible to incorporate them into a wide variety of applications. This versatility provides optionality and convenience to consumers seeking specialised nutrition products, including those for weight management, such as 3D printed gummies, stick packs and protein bars. We anticipate growing demand for such products, as consumers become more aware that their weight and metabolic health may be linked. Lifestyle changes accelerated by the global pandemic are





also a driving force behind the trending spotlight on metabolic health.

### Solutions Backed by Science

In Europe, 54% of consumers say they are interested in food and drink products that are customised to meet individual nutritional needs<sup>3</sup>. Health and wellness brands are rising to the occasion by incorporating functional ingredients associated with specific attributes, such as vitamin C to support immune function or electrolytes to support exercise recovery with hydration.

Our extensive portfolio of science-backed solutions helps product developers create offerings that will stand out in the aisles. Through extensive research, we are continually identifying new microbial strains to support the gut microbiome and aspects related to metabolic health and help consumers' meet their wellness needs. For instance, our award-winning BPL1™\* (Bifidobacterium animalis subsp. lactis CECT 8145) probiotic and its heat-treated postbiotic counterpart target factors associated with metabolic health<sup>6,7</sup>. Additionally, Fibersol®\*\*\* is a line of soluble dietary fibre ingredients developed by ADM/Matsutani LLC and supported by over 30 years of extensive clinical research. Clinical research suggests Fibersol® can help to reduce blood sugar spikes after a meal<sup>8,9</sup>, and it promotes the growth of gut microbes<sup>10,11</sup>.

### Enjoyable Sensations Key for Program Adherence

For any good habit to stick, it's important that people have an enjoyable experience that they look forward to repeating. The sensory experience is key to buyer retention and increases the likelihood of consumer adherence to weight management programmes. Therefore, wellness-oriented foods and beverages must be appealing in taste, texture, aroma and appearance, in addition to their nutritional profiles and advertised claims. When a product experience is positive, consumers typically feel good, which can also help support emotional well-being and increase the potential consumers will repeatedly incorporate the product into their routines.

A blend of botanicals, biotics and other functional ingredients can help support and elevate tailored solutions with both flavour and function. Our vast range of high-quality botanical extracts, standardised plant extracts and concentrated fruit and vegetable powders work together



seamlessly with many other ingredients to create offerings that can add consumer-preferred attributes and provide an enticing sensory experience. Furthermore, botanicals and plant-based inclusions are recognisable ingredients sourced from nature, which help satisfy the clean label preferences of wellness shoppers. With more

behaviours, their psychological and physiological responses to product consumption, and the subjective perceptions of how they feel afterwards. These insights, combined with our technical ingenuity, formulation know-how, broad pantry of ingredients and cutting-edge solutions, help our customers recognise growth opportunities and



people taking a values-based approach to purchasing, it's important for brands to highlight small details that can have a big impact with consumers.

As a full-service partner to food and beverage brands, we take a holistic approach to innovation. It starts with a deep understanding of the consumer, including what motivates their

bring tailored wellness products to market.

*\*BPL1® is a trademark registered for Biopolis S.L. in the EU, the US, South Korea and other countries.*

*\*\*Fibersol® is a trademark registered for ADM/Matsutani LLC in the US.*

*\*\*\*Local regulations must be reviewed to confirm permissibility of ingredients for each food category.*

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# Plant-powered protein: Formulating delicious meat alternatives that are good for people and the planet



Gilbert Verschelling, Director Business Development & Innovation at DSM



The plant-based meat alternatives boom looks set to continue its upward trajectory as the food industry searches for new sources of protein to feed a growing global population. Beyond the need to produce more food without further depleting the planet's finite resources, the market is responding to the shifting attitudes of a more conscious consumer base. While the traditional meat industry remains strong, interest in flexitarian, vegetarian and vegan diets is soaring. In a survey of shoppers across ten countries, DSM found that 53% of consumers plan to look out for more plant-based alternatives in the coming three to five years.<sup>1</sup> With this surge in demand, it's no wonder that the retail value of meat alternatives is predicted to more than double by the end of the decade.<sup>2</sup>

In the first phase of this plant-powered revolution, production mainly focused on creating meat-free versions of consumer favorites like burgers, sausages and nuggets. As the trend matures, shoppers' hunger for new product formats and the increased availability of innovative ingredients will drive even greater growth in the meat alternative space. The opportunities are there for the taking but balancing taste, texture and health – as well as sustainable production – can present complex challenges. So, how can food and beverage manufacturers help to build a healthier future for people and planet and ensure consumers can enjoy it all?

## Facing the challenges

Consumers' acceptance of plant-based meat alternatives may be rising, but so too are their expectations. As well as paying close attention to environmental accountability, plant-based brands must contend with complex formulation challenges to turn products from one-off purchases to regular staples on consumers' shopping lists.

## Tasting success

First, and most importantly, brands must ensure their products deliver on taste and texture. Sensory experience is still the number one purchasing driver for over 60% of consumers.<sup>3</sup> Gone are the days when the words 'vegetarian', 'vegan' or 'meat-free' were synonymous with compromise or bland flavours. To create products with real consumer appeal, producers need to deliver the authentic, complex and delicious tastes and textures associated with traditional meat products. This includes deep 'umami' flavours, caramelized and chargrilled sensory profiles, or the juicy, melt-in-the-mouth texture associated with animal fat.

Recreating these aspects in meat-free products can be a difficult balancing act. On one hand, formulators must manage the potential for unappealing flavour 'off-notes', which can be imparted by some plant-based proteins. At the same time, they also need to select a base ingredient capable of mimicking the fibrous texture of muscle. Finally, they face the issue of recreating fat and oil release in products intended to be grilled, fried or baked to create the signature 'sizzle' and juicy texture consumers expect. Leading plant-based burger producers have successfully added 'sizzle' to their plant-based burgers with red beet juice and other plant-based colourants which mimic the quintessential 'bleed' one would expect to see from a classic beef patty.

## Balancing sodium

Salt is an essential component in virtually every meat alternative formulation – helping to create the right flavor and texture for optimal appeal. However, an over-reliance on salt in processed foods has seen governments, health authorities and consumers alike take steps to tackle high salt content and decrease the prevalence of high-sodium diets.<sup>4</sup> With salt reduction now a critical

concern, vegetarian and vegan brands must find ways to manage sodium levels in their products, while still offering an attractive, craveable flavour profile and well-balanced end product.

## Boosting nutritional credentials

Plant-based producers are also facing mounting pressure from health-conscious consumers to improve the nutritional profile of their formulations. At a time when 60% of shoppers are looking for food options with added nutrients<sup>5</sup>, manufacturers face a challenge in creating plant-based products that either match, or improve upon, the protein- and nutritional profile of traditional meat. To counter the perception of meat alternatives as less nutritionally complete<sup>6</sup>, plant-based brands should seriously consider the benefits of fortification and how added vitamins and minerals can act as a valuable differentiator in an increasingly crowded market.

## Helping consumers to enjoy it all

With a wide range of science-backed, responsibly sourced ingredients solutions, DSM can help meat alternative producers solve their formulation challenges – sustainably. DSM aims to make plant-based meat alternatives accessible, affordable and appealing to a wider audience than ever before by delivering high-quality, nutritionally valuable protein products from planet-positive, plant-based sources.

## Finding authentic flavours

DSM's flavouring ingredients, functional hydrocolloids and nutritional ingredient solutions for plant-based applications provide a one-stop-shop for manufacturers. Yeast extracts like DSM's Maxarome®, Maxavor® and Multirome® for example, are invaluable for helping producers mask 'beany' off-flavours. What's more, they can contribute towards building a variety of rich,

umami flavours and a succulent, fatty mouthfeel – without the need for added salt. These pure, concentrated flavour solutions can help manufacturers achieve the authentic, meaty taste profiles consumers increasingly expect from plant-based alternatives. Plus, with DSM's recently expanded Maxavor® portfolio, food producers can take advantage of three high-quality flavour solutions to meet a variety of taste demands in meat alternative products. These include Maxavor® Plant Masker EU which helps mask undesirable flavours, like green, beany notes of plant-based protein and Maxavor® Prime Beef & Maxarome® Grilled Chicken which create authentic meaty taste with tunable levels of intensity and roasted-ness.

### Enhancing vitamin content

To help plant-based food manufacturers improve the nutritional value of their meat alternatives products, DSM also offers nutritional solutions like Quali® vitamins, DSM Premix Solutions and life'sTMOMEGA plant-based omega-3. These solutions support the development of premium plant-based product ranges with an appealing nutritional profile, so that products can be delicious and nutritious. DSM's innovative Fortifull™ Nutrition Guide tool also gives brands complete insight into their products' nutritional profiles and can highlight missing micronutrients in plant-based offerings. The system compares plant-based alternatives to their meat counterparts, while taking into account any naturally occurring micronutrients present in the plant base. With this tailored oversight, DSM's guide allows formulators to efficiently fill any gaps in their products, for plant-based options with a healthier, well-rounded nutritional profile.

### Talking texture

Product consistency is just as important for consumer acceptance as flavour or appearance. Here, hydrocolloids play an essential role – helping to create a tenable texture and the chewy, juicy texture consumers expect. DSM's leading hydrocolloid solution, GELLANEER™ gellan gum, enhances a product mouthfeel by improving water binding capacity, while also helping to create an authentic meaty texture and bite.

### Joining forces

Just as a successful recipe requires a balance of complimentary ingredients, DSM's varied portfolio gives producers all the resources they need to formulate truly exceptional plant-based products. Through recent acquisitions and partnerships, DSM has further expanded its capabilities to support this mission. These include the acquisition of Vestkorn Milling, a supplier of pea- and bean-derived proteins, starches and dietary fibers, along with industry partnerships with prominent players like Olatein to further bolster DSM's sustainable plant-based protein offering. Through its collaboration with Avril, DSM is also launching CanolaPRO®, a highly soluble and functional alternative protein isolate. Derived from non-GMO canola (rapeseed) using a patented processing technology, CanolaPRO® is dairy-free, gluten-free, soy-free and solvent-free, enabling food and beverage manufacturers to differentiate their offering and deliver satisfying protein alternatives to an increasingly discerning consumer base. In addition to the new launch, DSM is also investing in scaling up its canola-based protein capabilities to enhance a wider range of vegan and vegetarian products – from on-the-go snacks, to cleaner, greener beverages.



### Committed to a brighter tomorrow

The same spirit of innovation that drives healthier, more satisfying plant-based proteins must be applied to improving sustainability across the global food supply chain. To help realize this goal, DSM has set ambitious targets for optimizing its own food production processes, while fully committing to furthering the United Nations' Sustainable Development Goals (SDGs).

With concrete, measurable targets, DSM is dedicated to enacting real change through its Food System Commitments. By 2030, the company aims to reach 150 million people with nutritious, delicious, sustainable foods, through a continuous process of innovation in the plant-based foods and beverages category. DSM has also set a target to support the immunity of a further 500 million people by supplying essential vitamins and minerals to consumers worldwide through high-performance dietary supplements. As part of this accelerated solutions program, DSM will provide more consumers with tasty and nutritious alternatives to meat, fish or dairy, so they can truly enjoy it all.

### Streamlining complete-package solutions

From ingredient sourcing to recipe formulation, product positioning and regulatory compliance, plant-based protein brands must navigate a host of complex processes to bring successful products to market. In such a dynamic space, it is crucial that food and beverage manufacturers continuously innovate, improve and grow to keep ahead of the curve.

To help create a better, more complete service package tailored to the needs of the food and beverage industry, DSM has recently simplified its operating structure to establish a fully integrated Food & Beverage business group. This new set-up brings together DSM's Food Specialties, Hydrocolloids and part of the Nutritional Products business groups, to provide everything food producers need, all in one place. Not only will this new structure ensure a more streamlined product development experience, but it will also place the health of people and planet at the heart of food and beverage innovation like never before.

With the combined power of an expanded sensory solutions offering, decades of formulation expertise and an operating structure built for maximum efficiency, DSM will empower producers to push the boundaries of what is possible with plant-based solutions.

### Planting strong roots for a healthier future

Consumers, producers and ingredients suppliers alike are excited to see what the future holds for the meat alternatives sector. With a cutting-edge ingredients portfolio and a newly optimized operating structure, DSM can help food and beverage producers take their place at the forefront of this endlessly exciting plant-based revolution. Leveraging consumer insights and support from DSM's plant-based experts to finetune their plant-based recipes from start to finish, producers can turn challenges into opportunities, and create products that appeal to consumers and stand out in the market.

From a niche category only a few years ago, to a multi-billion dollar space firmly in the mainstream – there is no doubt that the plant-based proteins category will continue its stratospheric upward growth in the years to come.

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For more information, visit  
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## Tomato science from Lycored helping prepared foods industry combat tomato shortage

**L**ycored, a global leader in natural lycopene-based colour and taste-enhancing ingredients from tomatoes has stepped up with ready solutions to help the prepared foods industry meet supply and cost issues as a result of ongoing tomato shortages.

As we approach the 2022 growing season, California's ongoing draught will continue to have a tremendous impact on crop yields and the tomato shortage is threatening to raise the cost of processed tomatoes for paste.

According to the Washington Post California grows more than 90% of America's canned tomatoes and supplies fully a third to the rest of the world. Noting processing tomato's "water-hungry" nature, California's ongoing clear skies and low crop yields will likely prompt prices to burst far more than they already have.

Further, continued damage from California's "Tornado" notes the Washington Post, threatens to disrupt the cost structures associated with prices of some of the world's favorite tomato-based foods with the price of pizza sauce, marinara, tomato paste, stewed tomatoes and ketchup hanging in the balance.

Lycored tomato science has the answer:

Lycofibers and CTC (Clear Tomato Concentrate), two of Lycored's versatile ingredient solutions that help extend tomato paste supplies by reducing solids and naturally boosting texture and taste while reducing carbohydrates in crust.

"With tomatoes in short supply for the foreseeable future," explains Lycored's Senior Vice President of Food, Tammi Higgins, "tomato sauce processors and prepared food makers can rely on these ingredients to help manage the shortfall and extend their tomato paste supply to meet consumer product demands."

For prepared sauce recipes reducing key "structural" ingredients like tomato paste can be especially challenging. Lycored research and customer experience has shown that with Lycofibers, manufacturers can extend tomato paste supply by up to 25%, deliver a smooth texture to sauces and eliminate less attractive ingredients such as starches and emulsifiers in most applications.

Lycored's supply will sustain operations and customer orders in 2022 with plenty of product that will help the pizza industry manage tomato paste supply shortages with natural tomato products that are clean label and align with consumer expectations.

## Probi completes first production batches of dairy-free BLIS K12

**P**robi® has completed the first commercial production batches of a dairy-free *Streptococcus salivarius* BLIS K12 at its US manufacturing site. The new BLIS® strains will shortly be offered to customers around the world.

Probi entered a strategic partnership with New Zealand based Blis Technologies Ltd. as part of a long-term strategic collaboration in July, 2021. As part of this partnership, Probi® and Blis signed a licensing and distribution agreement. Probi is now manufacturing BLIS® strains at its recently upgraded fermentation facility in Redmond, WA and will shortly be offering these new strains to Probi's customers around the world. In addition, the two companies are continuing to collaborate on additional research and development.

*Streptococcus salivarius* BLIS K12 is part of a portfolio of clinically documented bacterial strains for supporting our natural immune defense and preventing infections of the mouth and throat. The BLIS strains also contribute to a healthy set of teeth and gums. Blis Technologies' clinically documented strains have a successful history of use in New Zealand, Australia and Asia, as well as in Europe and in North America.

Steve Preston, Probi's Head of Fermentation stated: "The technology transfer of BLIS strains to Probi has gone smoothly and we have been able to make very rapid progress due to our sizable investments in fermentation technology and upgrades to our analytical capability. Furthermore, as part of our high throughput screening program for culture media optimization, we have been able to completely eliminate the need for dairy (milk) products in the formulation. We believe this is very helpful for customers seeking to produce allergen free probiotic products."

## Kemin Food Technologies offers interactive digital bakery and snack guide

**K**emin Industries, a global ingredient manufacturer that strives to sustainably transform the quality of life every day for 80% of the world with its products and services, recently added Kemin Food Technologies – North America's new interactive guide, "Baking a difference today and tomorrow", to its website. The guide for bakery and snack producers helps users learn more about clean label solutions to ensure products stay fresher, longer and succeed in the dynamic and competitive marketplace.

According to Mintel's Packaged Bread U.S., March 2021, consumers seek food products that do not contain unwanted ingredients and carry all-natural claims on the product label.<sup>1</sup> Taste, however, remains a critical component to brand success, as flavour, texture and freshness outrank clean label in importance. These consumer priorities challenge bakery and snack manufacturers to balance a label that appeals to consumers with a high-quality sensory experience that delivers the crispiness, crunchiness or chewiness consumers seek in snack and bakery products.

"In the snack and bakery category, products that are formulated with fewer ingredients but still offer high nutritional value, such as reduced fat and increased proteins and fiber content, continue to grow in popularity," said Courtney Schwartz, Marketing Director, Kemin Food Technologies – North America. "Fats and oils are key components in many baking and snack formulations and finding clean-label solutions to protect product quality and shelf life is critical to manufacturers. Kemin's new interactive guide highlights a variety of ways producers can replace undesirable ingredients with effective clean-label solutions to ensure products

stay as fresh as possible for as long as possible."

The Kemin interactive bakery and snack guide demonstrates how the right clean label solution can provide stability while meeting a brand's goals for clean, simple labels. These benefits include:

- Retaining the fresh appearance and sensory qualities of snack foods by delaying oxidation and extending shelf life with Kemin plant extract blends
- Extending the shelf life and maintaining the texture of baked goods while reducing microbes and mold, with Kemin mold inhibitors and food safety ingredients
- Maintaining the texture and quality of tortillas, with Kemin's full range of label-friendly dough conditioners, enzyme blends and batch packs to create products that stay soft, moist and pliable throughout their shelf life

The Kemin team understands how different factors—including mixing procedures, processing and storage temperatures, water activity and pH levels—affect the shelf life and consumer appeal of customers' products. Kemin's formulation experts help manufacturers solve formulation challenges—from the simple to the complex—to ensure products stay fresher and safer for longer so consumers can enjoy them at every stage of shelf life. With formulation expertise and an extensive portfolio of shelf-life solutions, Kemin helps manufacturers achieve 'claimability' with label claims that meet consumers' demands without sacrificing shelf life or sensory appeal.

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## Bartek announces construction of the world's largest malic and fumaric acid facility

**B**artek Ingredients has commenced construction of a state-of-the-art, vertically integrated facility that will become the world's largest malic and food-grade fumaric acid production plant. When completed in Q4 2023, the \$160 million project will double Bartek's capacity and cement the company's position as the global leader in malic and fumaric acid.

Bartek anticipates continued market expansion, and this added capacity will support malic and fumaric growth for many years to come. The new facility will also be expandable to produce new products such as buffer and fortification salts and additional volumes of malic and fumaric acid.



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# Firing up the barbecue for vegans



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Vegan chorizo sausage is a variant that can be implemented on the basis of wheat

Experts at Loryma have developed a variety of application concepts that exploit the functionality of wheat texturates and binding agents to help manufacturers deliver grill-friendly meat alternatives.

**L**ighting the barbecue is a familiar and often social event for many people. And, for the increasing number of consumers who want to see meat-free alternatives on the grill, there is now a growing selection of delicacies. “Flexitarians in particular can be quite demanding,” says Norbert Klein, Head of Product Development at Loryma: “They want to consume less meat but, at the same time, they want a high-quality eating experience. Barbecuing is associated with positive memories and emotions. Therefore, giving up meat should not feel like giving up pleasure.”

Barbecues traditionally comprise a wide range of foods and dishes that cater to a broad array of preferences and cultures. And although, historically, it's normally been a meat fest, change is afoot. Even if you've opted out of eating meat, for the short- or long-term, there is still a multitude of different products and flavourings to tempt your taste buds. As with all substitute products, Loryma understands that an authentic mouthfeel and taste is crucial — especially for flexitarians who supplement their diet with vegan products (but still know meat products very well).

According to Statista, sales of meat alternatives will continue on an upward trend and reach a value of approximately \$140 billion by 2030, with flexitarians being the driving force. To convince them, the choice of a vegetable base is essential. As such, ingredient specialist Loryma has developed combinations of wheat ingredients that can be used to create vegan versions of grilled classics such as steaks, sausages, burger patties and fish fillets, as well as new creations and variations.

#### Bringing fresh thinking to market

For reasons of sustainability alone, wheat is a future-facing raw material. It scores well in terms of multifunctionality and regionality as almost 99% of each grain can be recycled through the production of co-products, thus ensuring a resource-saving approach to the environment. From a food technology perspective, wheat offers technical advantages as a basis for meat alternatives: extruded wheat gluten forms fibres that, compared with soy or pea protein, have a higher elasticity and therefore ideally replicate the feel and texture of meat.

Loryma has been concentrating on this raw

material for more than 40 years. Not only is the company active as a classic supplier to the food industry, it's also constantly developing new application concepts in its own technical centre on the basis of its extensive ingredients portfolio. In terms of taste, which plays an important role for consumers, there are no restrictions. The basis for “grillable” meat alternatives is the use of extruded wheat proteins and wheat-based binding components, which are neutral in taste and smell. This gives manufacturers the opportunity to flavour or aromatise their product according to their own ideas. In this way, the production of various meatless sausage specialities such as chipolata or a merguez is also possible — using the same meat processing equipment.

The various wheat-based ingredients from the Loryma portfolio work together to ensure easy handling, optimal texture, appearance and binding. Both the textured wheat proteins of the Lory® Tex range and the functional wheat-based binding system Lory® Bind are odourless and tasteless. For manufacturers, this is the ideal premise for individual seasoning.



### Getting the look, feel and taste right

Extruded ingredients have emerged in recent years as a key element in the production of meat substitutes. Extrusion describes a process in which a raw material — in the form of cereal flour, for example — is formed using heat and pressure from screw conveyors and forced through a die. The extrudate that emerges is then cut to the desired length. The result is a product with unparalleled properties that can be further enhanced by composition and gluten content. And, something that's especially important for the meat alternative market, a fibre structure develops when hydrated that's disconcertingly similar to that of meat.

Whether it's replicating muscle meat or ground mince, the great advantage of the extrusion process is its flexibility. From both a design and desired properties perspective, the possibilities are manifold. For instance, long, light strips that mimic chicken breast can be produced and subsequently marinated or, using a special coating system, given a vegan "chicken skin" that even becomes crispy when grilled. And, as well as uncoloured wheat textures, darker versions are also available; light brown, coloured and treated with a natural malt extract, "cooked pork" and sugar caramel coloured versions of "cooked beef" are also "on the menu." For other vegan applications, smaller extrudates may be more suitable; extruded granulates, for example, are suitable for fine white or coarse sausages. As a dry product, the texturates can be transported unrefrigerated, easily stored and individually rehydrated.

Furthermore, thanks to the addition of water, there is also additional scope to enhance the texture even more; the degree of hydration determines the bite strength. For a typical American "home-style" burger patty, for instance, not only can different shapes and sizes be combined, but also firmer ones with softer ones. An authentic replica of the original animal product is achieved by combining the texturates with the appropriate functional mixture of wheat gluten and starches.

The choice of binding system depends on the specific processing procedures being used and the desired product properties. The correct binding of



© Crespel & Deiters

As if it were made of meat: the mixture of different-size wheat textures looks and feels very similar to the original

the meat and its adhesion to, say, a sausage casing are essential quality characteristics. The typical mouthfeel is created by the vegan casing and by the vegetable sausage meat ingredients bonding optimally with each other. The bond is irreversible, so that even when packaged in a vacuum or the heat applied during preparation have no negative influence.

### Beyond the white meat

To mention an example, one of the latest innovations from ingredient specialist Loryma is a combination of wheat-based components for a vegan version of chicken thighs, which perfectly replicates this classic dish in both appearance and texture. The creation of an authentic, vegetable "chicken skin," as described previously, has been achieved with the help of a specially developed coating system and a two-step-process. First, the vegan chicken meat is replicated using long chunky texturates and a corresponding binder, which is then formed into the shape of the aforementioned chicken leg. After that, a functional mixture

of wheat proteins, starches and gelling agent (Lory® Stab) creates an elastic, irreversible, thin surface coating. It's applied as a flowable oil-in-water emulsion by means of conventional coating technology to the shaped imitation meat. By frying, deep-frying or grilling, the outer shell becomes crispy while the inside remains juicy and tender.

Klein says: "Recreating crispy chicken skin with purely vegetable ingredients was a real challenge; yet, we are more than satisfied with the final concept. It's perfect for everyone who wants to give up meat ... but not this classic treat."

### Fish alternatives

Perhaps not as popular as burgers and sausages on the barbecue, Loryma is also working on vegan fish alternatives. Not yet as widespread as meat alternatives, the need for industry action is, however, growing. In the long-term, owing to factors such as population growth, overfishing and the increasing demand for macronutrients such as protein, carbohydrates and omega-3 fatty acids, fish may well be in short supply in the future. Klein comments: "Thankfully, even segmented fish muscle meat can be imitated with the help of a specially adapted mixture of wheat proteins and starches. The modularity of our concept provides sensory flexibility in terms of taste, colour and texture, which means we can produce vegan white fish meat, such as halibut and cod, salmon fillets and even tuna."

"From bite-sized pieces to fillets, the size and shape of our products is also very flexible. To imitate the rather firm flesh of tuna, for example, extruded wheat proteins from the Lory® Tex range can be incorporated. Wheat-based fish applications can easily be enriched with vital substances, such as omega-3-rich oils from microalgae. And although high-quality proteins are a natural part of wheat's make-up, the content can be further increased by adding our Lory® protein component."

### Taking a closer look at the label

Increasingly, consumers are taking the ingredient list of any product into account when shopping, and meat alternatives are always under scrutiny in this regard. When the trend emerged and momentum started to gather, long lists of chemical-sounding contents and additives that consumers didn't like the look or sound of were



© Loryma

Honey mustard or Caribbean spice mix? Meat-free barbecue items can be marinated in the same way as those with meat





Sausages belong on every barbecue and plant-based variants are now available for flexitarians

the order of the day. Nowadays, as a result of progressive development work, these are no longer necessary. Wheat ingredients can be declared as such and clean-label products are also possible. Furthermore, if desired, a high-protein positioning is within the realms of possibility, which can be achieved with the help of additional components such as hydrolysed wheat protein.

To meet the needs of consumers who want to prepare their own vegan meat alternatives at home, Loryma has developed a new application concept. For this purpose, the company has designed special wheat-based premixes that form an authentic texture in the end product after the addition of water. They provide numerous opportunities for manufacturers to respond to the trend for vegan meat alternatives with quick and fail-safe convenience products. The clean label and

optimised nutritional values are particularly appealing for a health-conscious target group and open up many creative culinary possibilities.

The premixes are the ideal starting point for the creation of numerous vegan applications, from plant-based burger patties to cevapcici, breaded cutlets and nuggets. Preparation is simple: the consumer only needs a bowl to combine the premix with water. The resulting mixture can then be kneaded and shaped into the desired form. Fresh ingredients such as diced vegetables or herbs can also be added if desired.

#### Looking to the future

With a view to the growing world population, plant proteins will play an important role in the future. Our resources are limited, and in this awareness, more sustainable foods are enjoying great

popularity. Loryma processes only EU wheat, which minimises both transport emissions and the risk of supply bottlenecks. The use of wheat-based ingredients is another step towards future-oriented end products that encourage consumers to make repeat purchases at the veggie barbecue counter.

Klein concludes: "Our do-it-yourself solution addresses a target group that is keen on creative cooking and wants to know all about the ingredients involved. With our product, we help manufacturers to meet the high demands of conscious consumers who want clean label, optimised nutritional values, along with creative freedom in preparation and, of course, a convincing mouthfeel."

"Having been working with wheat as a natural raw material for more than 160 years, the value of sustainable ingredients is nothing new to us at the Crespel & Deiters Group. However, it's great to see how the industry has changed in the last decade as a result of consumer demand. Let's continue to develop more natural and responsibly sourced meat alternative solutions for now and the future!"



[www.loryma.de](http://www.loryma.de)

## Prebiotic gummies poised for significant market growth, says Clasado

**C**lasado Biosciences, a global leader in the development of clinically proven prebiotic ingredient and product solutions for the human gut microbiome, has outlined the potential growth ahead of the functional gummy sector, along with the exciting potential for prebiotics in this product segment.

Reflecting the category's robust projected compound annual growth rate of 10.2% to 2027 according to intelligence firm Ameco Research, Clasado has observed a significant increase in global demand for gummy supplements and sees strong commercial potential for prebiotic gummies.

David Mharakurwa, Director of Sales APAC & MEA at Clasado Biosciences, explains: "In conversation with our customers, we are seeing functional gummies becoming a much more common sight in the global market, with Europe and North America being particularly pronounced. Consumer demand is clearly there, and with gummy formats able to command a price premium over capsule and tablet counterparts in markets such as Europe and Asia, formulators in the health and nutrition space

are certainly taking notice.

"In terms of what's driving this growth, one strong possibility is the surging overall interest in health and wellbeing on the back of the Covid-19 pandemic. As consumers, we have a changing relationship with what it means to be healthy and, for many of us, that means carrying out simple everyday actions as 'preventive maintenance' for the body. Gummies fit this role perfectly, so it's easy to see why they're gathering such momentum.

"We have seen vitamin gummies growing for some time becoming an established market segment, but what's next? It's clear that prebiotics, probiotics and fibre are set to dominate the conversation in new functional gummy development, particularly with the rapid advance and awareness of gut health science."

Clasado is the developer and manufacturer of the multi award-winning Bimuno®, a prebiotic galactooligosaccharide (GOS) ingredient designed to add real value for formulators. The stable and versatile prebiotic fibre is the most studied of its kind, supported by over 100 scientific publications,

including more than 20 clinical trials.

The business is delivering an ambitious global expansion strategy, bringing its pioneering prebiotic ingredient to partners and distributors in Europe, North America, Asia, EMEA, Australia and New Zealand.

David added: "There's strong commercial opportunity right here and right now. As well as standalone products, for formulators already developing their vitamin and mineral gummies, prebiotic ingredients such as Bimuno are a way to instantly uplift formulations and provide a stronger complete nutritional profile. In fact, Bimuno is ideal for this application thanks to its extremely low effective dose of just 1.8 grams.

"The gummy market is clearly moving from strength to strength and it's a pattern being seen across the globe. Looking towards the next step in the format's evolution, we are expecting to see gummies pivot towards more targeted and specific health applications, in areas such as immune defence, gut health and cognition."

[www.clasado.com](http://www.clasado.com)



# Innovative ingredients platform perfectly taps into booming better-for-you market

GELITA technology offers solution for collagen peptide fortification, protein enrichment and sugar reduction in gummy applications



© Adobestock



What do consumers need, what do they want and what drives their purchasing decisions? At GELITA, these are all vital questions that must be

addressed in order for product concepts and ingredient solutions to be optimized to best meet end-user requirements.

And while it's an ever-evolving process, the sharing of insights, knowledge, ideas and creativity can help manufacturers with the development of innovative products that will appeal to specific target groups.

As the leading manufacturer of collagen proteins — with a particular focus on gelatins — and specific Bioactive Collagen Peptides (BCP®), GELITA has a long history of providing high-quality

ingredients with proven nutritional benefits. Furthermore, it also offers unrivalled service in terms of support, technical expertise, market know-how and application-driven innovations.

## Opportunities for innovative, added-value products

Its HST (Hybrid Smart Technology) platform offers numerous opportunities and benefits for consumer-centric new product development. It does so by enabling better-for-you products through collagen peptide fortification, protein enrichment and sugar reduction.

Healthier, fortified food options have great potential but in order for products to be successful, they must deliver on taste, texture and indulgence. GELITA's HST platform plays a key role

in satisfying these demands, while unlocking the potential of innovative, added-value product ideas.

## Clamour for collagen

An area that is currently attracting a great deal of consumer interest is foods and beverages that positively impact well-being. Health concerns influence a variety of dietary decisions and shoppers are increasingly looking to boost their immunity, mobility and overall wellness with foods and supplements with added vitamins, minerals, nutrients and, in particular, collagen.

Collagen is the most abundant protein in the human body. As well as being the primary structural and most important protein in our connective tissues, it plays a key role in joint mobility, bone stability, skin smoothness and even



the health of hair and fingernails.

Unfortunately, the amount of collagen that the body produces starts to decline from about the age of 30. And, as we grow older, it continues to diminish. A lack of collagen can cause a variety of problems, from impaired joint mobility and poor bone health to sagging and uneven skin. However, through the consumption of collagen in supplemental form, the body's supplies of this vital nutrient can be replenished.

### Beauty-from-within boom

The most traditional and best-known application area for collagen is skin health. During the last few years, it has become an increasingly important topic and so-called beauty-from-within concepts are creating new opportunities.

Topical solutions containing collagen or collagen peptides have been around for a while now, but there have been some doubts over their effectiveness. The problem is that they only affect the epidermis — the outer layer of the skin — and can therefore only deliver temporary effects. As a result, new-generation skin health ingredients — such as hyaluronic acid and collagen peptides — are now outpacing vitamins and minerals.

VERISOL® HST contains all you need to make collagen-rich products a reality. It's an ingredient solution for highly effective beauty-from-within products that's scientifically proven to benefit skin health. VERISOL® contains natural BCP® that have been specifically developed to provide the highest possible efficacy in human skin. With their special amino acid composition, they positively influence the skin's collagen metabolism from the inside out. VERISOL® enters the bloodstream and reaches the fibroblasts in the dermis. In a completely natural process, it stimulates collagen metabolism and helps strengthen the skin's connective tissue. This means improved elasticity, fewer wrinkles and a younger, healthier appearance.

Scientific research confirms that a daily oral intake of just 2.5g of VERISOL® leads to beneficial effects. From a technological perspective, VERISOL® HST allows for the incorporation of high levels of protein in confectionery products such as gummies, marshmallows or hard-boiled candies — all while safeguarding indulgence, texture and taste. This means that the recommended daily intake can be achieved with just three gummies with a VERISOL® HST content of 33% each.

With GELITA's Bioactive Collagen Peptides (BCP®) and gelatin know-how, high collagen protein gummies can be developed and tailored to the needs of end consumers. There are a lot of concepts available, for example, that can be used to provide the required daily dosage of VERISOL® in gummies or combine VERISOL® with vitamins in fruit gummies.

### High-protein possibilities

Consumer thinking about protein has moved out of the gym and into mainstream grocery stores, which means products with protein claims are on the rise. Although consumers who engage in physical activity remain a core audience for the protein/sports nutrition market, its mainstream evolution is being driven by people who are both active and looking for a convenient health boost. They tend to take a proactive rather than reactive approach to health, and are striving to stay fit and mobile well into later life.

Data from Innova Market Insights shows that consumer demand is driving high protein product launches. Between 2016 and 2020, the number of annual product launches with "high/source of



Natalie Leuwer  
Category Manager  
Food Specialties  
GELITA

protein" claims increased by 2.1 percentage points globally.

A successful solution to meet this demand is GELITA's SOLUFORM™ PE: It provides countless possibilities for the development of products with a high protein content, from gummies, marshmallows and candies to extruded snacks, table jellies, desserts and cream fillings. Fruit gummies made with SOLUFORM™ PE can boast a protein content of 35%, for example. This, in turn, means that the protein provides 37% of the total calorific value of the finished product — thus allowing for a high-protein claim. These gummies can also be made on a standard mogul production line, which is currently not possible with conventional powder products.

### Addressing technical challenges

Quite often, enriching an existing product with protein leads to a change in quality, with issues frequently encountered including turbidity (flocculation), textural changes and altered production processes. This is as a result of the properties of the protein powder itself and its interactions with other components — especially the water content of the food matrix.

To change their sensory and technofunctional

profile means it is now easier than ever to create high-protein solutions.

As the particles quickly sink to the bottom of the dissolution vessel, fewer clumps form and, because of a lower air input, less undesired foaming occurs. This leads to fewer rejects and a much smoother process.

### Great taste, less sugar

When it comes to sweet treats, consumers want a feeling of indulgence and comfort — but not necessarily a high calorie content. That's why sugar reduction is particularly prevalent in the confectionery category. The segment grew at a CAGR of around 5% during 2015-2020, and is expected to grow moderately during the next five years¹.

With that in mind, the food industry has been challenged with developing sweet products that have a lower sugar content than their traditional counterparts, but are still tasty and enjoyable. That may sound like a contradiction but it's a goal that's easy to achieve with SOLUFORM™ SR. By substituting regular gelatin in your recipe with SOLUFORM™ SR, you can easily reduce sugar content without compromising on either texture or taste. At the same time, you will reduce the amount of carbohydrates and calories in the end product while simultaneously increasing protein content. And if you are looking to manufacture sugar-free concepts, SOLUFORM™ SR can help you do that too.

Technologically speaking, sugar reduction can be challenging. Sucrose is a sweet bulk ingredient that has long been used in confectionery and influences the texture of the end product, as a result of its crystallization and solubility behaviour. In other words, every time sugar is taken out of the food matrix, the whole system can become



properties, proteins can be modified thermally, physically, enzymatically, chemically or by fermentation. With SOLUFORM™ PE gelatin, the particle properties of collagen, for example, are modified by thermal and/or mechanical processes, making it suitable for the production of highly concentrated protein solutions without affecting the quality of the end product or process.

SOLUFORM™ PE also produces less dust during production, transportation and storage. This makes for easier, cleaner handling, which results in time and cost savings. It also has improved dissolution properties. Furthermore, adjustable particle size, higher bulk density and an improved wettability

unbalanced in terms of taste and technological characteristics.

There are, however, several different options available to replace sugar or its associated sweetness in a food system. For example, artificial or high-intensity sweeteners such as aspartame, sucralose, saccharine, acesulfame K and cyclamate provide several thousand times more sweetness than sugar — but no bulk.

Reducing or even replacing household sugar (sucrose) with natural sweetening products such as honey or maple syrup might also represent healthier alternatives for confectionery products such as gummies and jellies. However, the result-

ing products don't actually benefit from a meaningful change in nutritional value or total carbohydrate content.

Sometimes, reducing the sucrose content of foods leads to an increase in the moisture content, potentially increasing the risk of microbiological growth and contamination. Plus, applying a reduced sugar claim is almost impossible, as the end product will deliver the same number of calories as the original version.

Polyols, so-called sugar alcohols, can replace sugar in a 1:1 ratio and even allow for the production of sugar-free alternatives. Delivering on sweetness and bulk, these polyols have less influence on blood sugar levels than sucrose because they are metabolized independently of insulin. Examples of well-known polyols are sorbitol, mannitol, xylitol, maltitol and isomalt. The disadvantage of sugar alcohols is that they can impair the digestive system and impact consumer well-being. As sugar alcohols are largely indigestible, they draw water into the digestive tract and — if consumed in large amounts — can have a laxative effect. In addition, their indigestibility can cause them to ferment in the intestines, resulting in flatulence.

SOLJFORM™ SR, however, is highly suitable for various sugar-reduced and sugar-free formulations. For sugar-free products, it can provide the necessary bulk when using sweeteners such as stevia. In sugar-reduced applications such as fruit gummies or bars, it allows for a reduction in sucrose without significantly changing sweetness. In most cases, the sweetening power of the remaining sugar is still strong and the texture is similar to reference products. If necessary, the taste can be optimized by adding minimal amounts of sweeteners. To sum up, SOLJFORM™ SR helps to keep texture and taste at the desired level, and is easy to process using standard equipment.

#### Safeguarding sensorial pleasure

In 2020, Innova Market Insights asked consumers around the world to choose the factors that most influence their purchasing decisions when buying food and beverage products. The responses revealed that indulgence claims, as well as texture and flavor, are among the most important considerations.

When it comes to perfect textures, GELITA's HST platform provides all the tools needed to



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tailor product innovations to the demands of various consumer groups. Take gummy candies as an example: by using different HST solutions with varying bloom values, or by working with different concentrations, a product's elasticity and firmness can be adjusted to achieve specific results. This allows manufacturers to design textures according to the preferences of individual target groups.

The HST platform is also ideal for producing foaming and stabilizing aerated confectionery such as nougat, sponge candy, fruit chews and marshmallows. Foam formation and stabilization are complex procedures, as less sugar or more protein changes the balance of the food matrix. With its special technological properties, HST offers the perfect solution for aerated confectionery — safeguarding indulgent textures and the sensorial pleasure that consumers are looking for.

#### Guidance and expertise

Bringing successful new products to market can be a challenge and so to get it right, manufacturers must quickly and accurately assess factors such as key growth drivers, the competition and the needs of constantly changing target groups.

As a result, the role of the ingredient supplier has become progressively more important too, especially regarding ingredient know-how, time-

to-market, quality and service. GELITA is aware of the current changes and challenges affecting the sector, and therefore continuously monitors global markets and consumer trends to help customers develop innovative approaches to creating new products. From technical support, recipe or concept development to nutritional and regulatory advice, GELITA offers guidance and expertise throughout the entire value chain.

The HST platform provides customers with tailored positioning, better processing and optimized performance levels. This means improved production, enhanced machinability and the ability to expedite the development of new and exciting products with proven benefits.

#### Reference:

1 <https://www.marketwatch.com/press-release/sugar-free-confectionery-market-size-share-trends-analysis-growth-and-forecast-2021-2026-2022-02-01>

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## Grupo Bimbo and Barry Callebaut extend strategic supply agreement



Mexican Grupo Bimbo S.A.B. de C.V., the a large baked goods company which is celebrating its 75th anniversary, and the Barry Callebaut Group, the world's leading manufacturer of high-quality chocolate and cocoa products, announced the renewal of their long-term agreement. The outsourcing agreement, originally signed in 2012, covers chocolate products for Bimbo's domestic market Mexico. The extended strategic supply agreement includes distribution to Grupo Bimbo in several countries in Central America, the US, Canada and Uruguay, and enables

both companies to continue to drive strategic, long-term growth globally.

David Hernandez, Chief Procurement Officer (CPO) for Grupo Bimbo, said: "We are pleased to extend our strategic relationship with Barry Callebaut, who has been a partner to our business for the last years, and we look forward to their support of continued sustainable growth and accomplish our mission of nourishing a better world."

Steve Woolley, President & CEO Americas of Barry Callebaut, said: "I extend a warm congratula-

tions to Grupo Bimbo on its 75th anniversary. As we extend this long-term supply agreement, I am proud that Barry Callebaut remains one of its strategic partners by enabling their powerful vision for growth." Jesus Carlos Valencia, General Director Latin America North at Barry Callebaut, continued: "Barry Callebaut's reliability and chocolate expertise make it the partner of choice for leading industry players like Grupo Bimbo."

[www.barry-callebaut.com](http://www.barry-callebaut.com)



# Harness the psychology of clean label to deliver business value



Today's consumers are increasingly conscious about their health and wellbeing, taking control of their diets and making more informed, connected purchase decisions. In fact, 47% of consumers indicate that they are buying more packaged foods with natural ingredients versus the prior year.<sup>1</sup> By weighing the impact of their purchase — whether in relation to themselves, their family or the environment — the focus on overall wellbeing is undeniable and is projected to catapult the global clean label ingredient market from \$38.8bn in 2020 to a forecasted \$64.1bn by 2025.<sup>2</sup> By shifting to clean label, businesses have the capability to move forward and accelerate their position within the market, therefore unlocking their path to brand preference over competitors.

Daniel Haley, Global Platform Leader, Clean & Simple Ingredients, Ingredion, reveals the findings of new research carried out by Ingredion on how consumers are prioritizing clean label in 2022 — and beyond.

## The journey to clean label success

The first step in any journey is understanding where you are starting from, and clean label is no different. Businesses must examine what clean label means for them and their customers, and the degree to which clean label is emphasized within their organization from a resource and budget perspective. With growing demand for cleaner labels from consumers, 'natural' and 'naturally-sourced' are the first and third most popular packaging claims, with 43% and 38% of companies, respectively, indicating that they prioritized these when selecting ingredients for their products. Food and beverage products that feature these and other clean label claims, such as no additives, high in protein, GMO-free, sugar-free and minimally processed, signal to consumers that they are safe, healthier and more 'natural' than those that do not.

When undertaking the clean label journey, companies can find solution-oriented alternatives that deliver the same shelf life, stability and product quality that their consumers expect. These cover markets such as sweeteners, nutritional ingredients and artificial flavors, with expected growth in demand in the next 2-3 years for markets such as preservatives, emulsifiers and modified starches.<sup>3</sup>

With this in mind, what exactly is the clean label journey and where does one begin? Based on its global research, Ingredion's Insights Center of Excellence determined that businesses fall into three distinct stages of transformation along this path: Clean Label Advocate, Explorer or Newcomer.

A Clean Label Advocate is an early adopter, a leader in brand preference that considers clean label from a product's inception. Clean Label

Explorers are progressive and see opportunity in adopting some basic claims. Finally, a Clean Label Newcomer is often slower to adopt and prefers to pursue established trends.

Each stage of transformation on the progressive journey to unlocking the value in the psychology of clean label has its own key characteristics, business opportunities and challenges. Determining their starting point can help a business identify the steps they need to progress.

## Becoming an Advocate

The Clean Label Advocate is the most experienced of travelers along the clean label journey, but the opportunity for growth is far from over. More than three-fourths of manufacturers consider clean label an important part of their business strategy, with 36% of manufacturers viewing clean label as extremely important for their business strategy.<sup>2</sup> What sets the Advocates apart from the Explorers and Newcomers is their commitment to making 'natural' or organic claims, while also carefully selecting ingredients that fit within regulations and connect with consumers' wants and needs.

Advocate companies encourage their brand managers and product developers to be proactive and innovative, and they are excited to build trust with their consumers. However, while a large percentage of these organizations' products are clean label and feature shorter ingredient statements with recognized ingredients, the competition is never far behind. Continuous innovation is the key to create authentic differentiation from other brands, and formulating products that can carry 'natural' and sustainability claims will help keep Advocate businesses at the forefront of the clean label journey.

## Finding opportunity as an Explorer

A Clean Label Explorer has a good grasp of the principles and application but may still be hesitant to truly push forward and innovate. These businesses have begun their journey, but their core is still aligned with older trends based in artificial ingredients. Claims such as 'no additives' and 'non-GMO' have only just begun to crest their product line.

At this stage of the journey, organizations are typically driven by existing legislation and regulations surrounding clean label. There is often an emphasis within product development on achieving required compliance with minimal investment, an approach that can have lasting implications for product quality and brand perception. Often, one of the biggest challenges at this stage is the speed of the product development process, which is key to an organization's ability to establish loyalty before their competitors can do so.

However, there's more to the process than simply getting to market. By devoting the time and resources to the clean label journey, these organizations can take their brand preference to a higher level. When they understand what consumers are asking for and work with an experienced partner who can help them identify segments ripe for success, Clean Label Explorers can uncover new opportunities and drive deeper integration of clean label across the business. This results in more seamless entry into new categories and better overall brand cohesiveness, which enables companies to reap greater rewards.

## Finding footing as a Newcomer

Businesses that classify as Clean Label Newcomers may have a reluctance to pursue this area due to concerns about the impact to their bottom line or lack the clarity around how the trend fits within the broader business strategy. Possibly, they may be interested in entering the clean label space but have yet to act due to competing priorities or limited resources.

Many manufacturers at the forefront of clean label reported higher quality products (57%), 'healthier' products (47%) and more positive brand reputation (46%) as their top reasons for pursuing this journey.<sup>3</sup> Clean Label Newcomers tend to watch what the competition does first, but this strategy doesn't explore their full potential. By taking a reactive rather than proactive approach, important facets of business such as market share, revenue and consumer perception could be sacrificed. By smartly applying strategies that shake up the market norms and meet consumer demands, Newcomers can progress along the clean label journey to the next stage of Explorer.

As these businesses move forward in crafting their clean label strategy, ensuring that they meet new market demands will provide them with a strong competitive advantage. It's with this new breadth of experience that they will be able to propel into the next phase of their market growth.

## Exploring business in clean label

No matter where a business exists on its clean label journey, the time to act is now. Consumers are driving the market and by tapping into the psychology of clean label, organizations can deliver both brand preference and innovation. Assessing a business' clean label stage is the first step in an important journey towards meeting both consumer needs and their commercial goals.

### References:

1 Atlas Proprietary Research, 2020

2 Global Clean Label Ingredients Market, Market Data Forecast, 2020

3 Clean Label Manufacturers Presentation, 2021

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# Fake Mineral Salts – Great Find or Great Fraud?



ass media is threatened by “fake news”, but there is also another topic arising in the food industry to worry about: “fake Minerals”.

This is a form of food fraud and more specially: “ingredient fraud”, which is essentially the fraudulent replacement of an original (more expensive) raw material with a less expensive one, without the purchaser’s knowledge, for economic profits or competitiveness in the market. Adulteration and fraudulence of ingredients are global concerns for stakeholders, industries, risk assessors and consumers.

The issue of food fraudulence is a current world-wide concern. There has been a massive increase in the number of cases that range from horsemeat in lasagne to melamine in infant formula. Less well known, is the fact that individual ingredients in foods or dietary supplements, that claim to be in the product for beneficial health reasons, can also be “faked”. In the world of food fraud, Mineral Salt adulteration is one act of defrauding buyers, product developers and in the end consumers for economic gain.

Mainly organic Mineral Salts such as Citrates, Lactates, Gluconates, Bisglycinates and many more are adulterated and in focus to be replaced by using all kinds of substances – mainly cheap and inactive. Instead of using fully reacted pure Mineral Salts, food or food supplement producers end up in processing unreacted compounds of inorganic substances such as Oxides, Carbonates or others. This can lead to uncontrolled impurity profiles, formulation stability problems or misbranded and

finally adulterated products without the positive effect of fully reacted Mineral Salts like a good bioavailability and less side effects.

Fully reacted Mineral Salts have genuine health benefits. The practice of substituting fully reacted organic Mineral Salts with unreacted blends has the potential to prevent individuals consuming these products for health reasons and from receiving the benefits they are in fact seeking. Fraudulent products that have been adulterated from their pure form will not show the same functionality in the body and would not show the same positive attributes as evidenced in scientific studies. Meanwhile, unknown reactions in the body may take place. The body is used as reaction vessel as the reaction of e.g. Magnesium Carbonate in combination with citric acid leads to the formation of Magnesium Citrate in the stomach. The absorption of valuable components might be strongly reduced.

Any product subject to adulteration does not meet health requirements beneficial to customers and certainly will not withstand the standards of the manufacturer distributing final products. Moreover, uncontrolled impurity profiles due to raw materials that are contaminated with e.g. heavy metals might occur. In the case of chemically synthetically manufactured products that are fully reacted, purification processes are used to remove any undesirable substances.

Fully reacted Mineral Salts

- ✓ high purity
- ✓ genuine health benefits
- ✓ high bioavailability

✓ less side effects

Fake Mineral Salts

- ✓ uncontrolled impurity profiles
- ✓ low absorption
- ✓ formulation stability problems
- ✓ misbranded and adulterated final products

## Regulatory status

The regulation of Mineral Salts for the use in food supplements is one of the most complex topics in food law. In Europe, in the United States as well as in Asia compliance with food law provisions is monitored by competent supervisory authorities. Although final products must be registered with local authorities, they are only checked at random. The manufacturers are responsible for the safety and the correct declaration of their products; but the lack of published monographs of many widely used Mineral Salts leaves buyers, product developers and quality departments wondering if the products they buy are indeed safe. These unreliable practices continue to create uncertainty about the chemical manufacturing process, and too many doubting if the desired product is in fact a fully reacted organic Mineral Salt.

## Process of manufacturing

High purity fully reacted organic Mineral Salts are known to be highly bioavailable for the human body. They are typically manufactured by a chemical reaction, wherein an acid and an alkaline Mineral source react in an aqueous solution. The result of a complete reaction is the formation of a



Salt compound that is highly pure and fully reacted. This process is a so-called neutralization reaction, where a strong acid and a strong base counteract each other and a neutral solution with a pH-value of 7 is obtained. This is why most fully reacted Mineral Salts have a fairly neutral pH-value. This, on the other hand, stands in contrast to a dry blend of ingredients that show an acidic or alkaline pH-value. (see table 1)

Another example is a “chelated taste free Iron Salt”, which sounds like the perfect solution for any application where taste and bioavailability are required. Unfortunately, this is not possible. Chelated Mineral Salts are fully reacted complex molecules. In the case of Bisglycinates they are Salts of the endogenous amino acid glycine. They bind the glycine directly through a highly sophisticated chemical manufacturing process in the

and without any magnetic characteristics. This would rather be a blend of Iron(III) Oxide and Iron powder and the amino acid glycine. Analysis is tricky in this case because it is possible to find Fe(II) when doing a wet-chemical analysis even though the ingredients of the blend are entirely unreactive.

Another example could be Magnesium Taurinate that has been used rather rarely so far. It is permitted for the use in food supplements in Europe.<sup>4</sup> It features a bioavailable source of Magnesium combined with the natural body constituent taurate, which most customers know as core ingredient in “energy drinks” (taurine, a naturally occurring beta-amino acid). However, there are products on the market which are only dry blends of Magnesium Oxide and taurine. Apart from the fact that the alleged fully reacted material is not soluble a more detailed examination, for example with a complementing combination of two methods like an elemental and structural analysis (by using XRD and EDX on the electron microscope), can be used to identify the material.

In the qualitative analysis of the surface of solid or powdery materials, the Energy Dispersive spectroscopy by X-rays (EDX) is used to identify the elements.

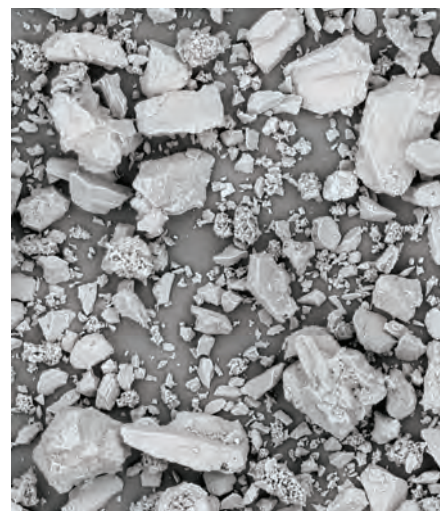


Figure 2

In SEM (Scanning Electron Microscope) pictures a heterogeneous structure provides the first hint on an unreacted compound. The SEM picture (see fig.2) of the fake Mineral shows smooth, large taurine crystals and then the small, composite Magnesium Oxide particles. The fake taurinate does not have a uniform crystal structure, which also affects its physical properties such as solubility. The taurine can go into solution, while the Magnesium Oxide remains undissolved.

A fully reacted Magnesium Taurinate in turn would show a homogeneous structure due to the wet-chemical production process that is necessary.

Furthermore, the X-Ray Diffraction (XRD) gives information on the identity of a crystalline substance. Compared with the X-ray diffraction patterns of single ingredients one will see if the material is a compound of pure taurine and e.g. Magnesium oxide or a fully reacted Magnesium Taurinate.

There are several other ways to differentiate between a fully reacted Mineral Salt and a blend of reactants or fraudulent Mineral Salts. Precise analytical detection methods like chemo metric data analysis as well as simple sensory evaluations, electron microscopy for crystal structure

Organic Acid	Product Name	Mineral Content	pH (in 1% solution)
Ascorbate	Magnesium L-Ascorbate	5.5 - 6.2%	approx. 7
Citrate	Trimagnesium Dicitrate, anhydrous	14.5 - 16.4%	approx. 7
Bisglycinate	Ferrous Bisglycinate	21.6 - 23.0%	approx. 8
Malate	Magnesium DL-Malate 3-hydrate	11.3 - 11.8%	approx. 7

Tab. 1: Examples for Mineral content of fully reacted organic Salts and their pH-value

The possibility of purification within the production process as well as clearly defined structures for the final organic salt can only be ensured by using sophisticated manufacturing processes. In this case the purification process includes the elimination of impurities like heavy metals, residues from mining, foreign matter and others. For each element individual impurities are characteristic: Magnesium is typically accompanied by nickel, whereas Zinc occurs with lead and cadmium. Furthermore, Iron Salts are often accompanied by various heavy metals and a purification step is crucial.

#### Examples and deficiencies of Mineral Salt “Fakes”

A fully reacted Trimagnesium Dicitrate for example shows an almost neutral pH-value. A simple way to demonstrate the presence of unreacted mineral base is the addition of acid. A product blended with Carbonate or Oxide, will create an effervescence reaction. Many Oxides contain Carbonate residues by nature. These alkaline ingredients for example can react with any acidic ingredients and produce CO<sub>2</sub>. The unreacted blend can cause additional uncontrollable and unforeseeable reactions. A blend of unreacted salts might be unstable due to slow but ongoing reactions in the formula of the final product.

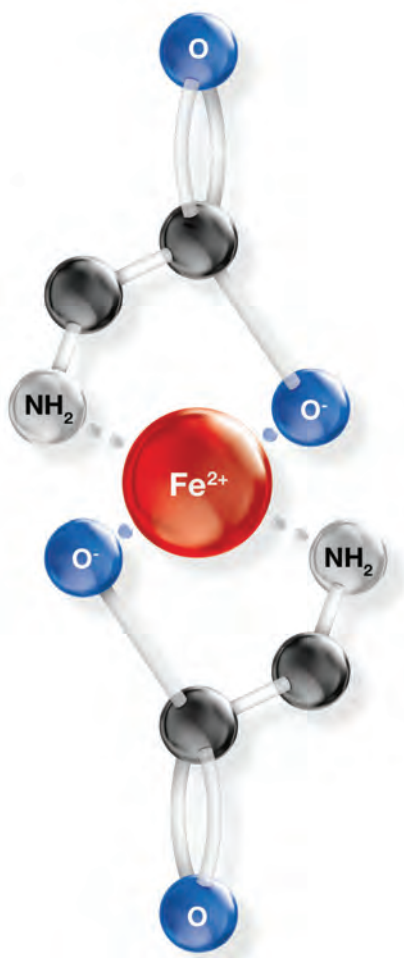
This reaction can also result in hardened powder formulas or popped/burst blister packs with tablets that are disintegrated. Those alkaline substances can also react with other substances in the formulation, e.g. vitamin C or cause unforeseeable exothermic reactions. Decomposed mixtures could even comprise hazardous, corrosive substances.

In liquid applications, like beverages, an adulterated/blended product might not show the solubility of a fully reacted Mineral Salt. It might dissolve in an inappropriate time or even become sedimentary, thereby damaging the integrity of the final product being sold and consumed.

Formulations that contain blends of mineral ingredients may have inappropriate or misleading ingredient labelling. In the case of Trimagnesium Dicitrate, one should become conscientious when purchasing a product with a content of 20% Magnesium. Due to the stoichiometry of a fully reacted Magnesium Citrate it can only offer a maximum of 16% Magnesium in the anhydrous form. Even with the best drying capabilities, a higher Magnesium content cannot be achieved. Therefore, products claiming a higher mineral content are blends and should be labelled in the ingredients lists accordingly e.g. Magnesium Citrate and Magnesium Oxide/Magnesium Carbonate.

presence of citric acid until they are fully reacted: meaning that a bonding has been formed in the complex between the mineral ion and its ligands. The chelate structure has a positive effect on the solubility, which improves the bioavailability of this organic compound.<sup>1,2</sup> Moreover, the amino acid chelate is only digested in the intestine, which optimizes the absorption.<sup>3</sup> Most chelated Minerals have a strong (often negative) taste impression. In case of chelated Iron they even leave a metallic taste in the mouth.

It is apparent that products claiming to be tasteless like a “taste free Iron Bisglycinate” are blends of unreactive salts. When taking a closer look to those products one can recognize that, a reddish material, which shows high magnetic properties, cannot be a fully reacted Ferrous Bisglycinate with a typically greenish-brown colour



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analysis, thermogravimetric analysis or even x-ray diffraction can help to detect fraudulent Mineral Salts.

#### Further detection methods

A simple and very revealing method for identification, characterization and structure elucidation is the InfraRed spectroscopy. To differentiate between a fully reacted Mineral Salt and a blend of reactants infrared rays (wavelength approx. 800nm-1mm) are inserted into the material to be tested and individual molecules are made to vibrate. Some wavelengths are absorbed by the material; this in turn is imaged as absorption bands. The infrared spectrum is, like a molecular "fingerprint", characteristic for the investigated molecule. This method can ensure that fully reacted Mineral Salts have the correct molecular structure.

NMR (nuclear magnetic resonance) spectroscopy is a very powerful method for the analysis and identification of substances, as well as for the structural characterization of mostly organic compounds. It is based on the different behaviour of magnetically active atomic nuclei under the influence of an external strong magnetic field.

NMR spectroscopy is used, for example, to ensure that the compound shown is in fact the

	<sup>13</sup> C NMR (D <sub>2</sub> O): δ (ppm) of C-1	<sup>13</sup> C NMR (D <sub>2</sub> O): δ (ppm) of C-2
Lysine HCl	175	55
Mg bislysinate HCl	181	55

Tab. 2 NMR profile of Lysine HCl in comparison to Magnesium Bislysinate HCl

	<sup>13</sup> C NMR (D <sub>2</sub> O): δ (ppm) of C-1	<sup>13</sup> C NMR (D <sub>2</sub> O): δ (ppm) of C-2
Glycine	179	42
Mg Bisglycinate	173	42

Tab. 3 NMR profile of Glycine in comparison to Magnesium Bisglycinate

substance of interest. NMR spectroscopy maps the "fingerprint" of a molecule.

The NMR profile of Lysine HCl in comparison to Magnesium Bislysinate HCl show a shift of approx. 6 ppm the first C atom from 175 ppm for the free amino acid Lysine HCl to 181 ppm for the fully reacted Magnesium Bislysinate. The same observation can be made for the comparison of Glycine vs. Magnesium Bisglycinate. The shift is from 179 ppm for the free amino acid Glycine to 173 ppm for the fully reacted Magnesium Bisglycinate. In both cases the second C atom remains unaffected.

#### Comparable products

Meticulous inspection of labels and packaging is another way to uncover fraud. If anything seems to be unclear or misleading, food business owners should ask questions and if there are no reassurances, they should not purchase the ingredients.

Legitimate Mineral Salts that are permitted for the use in food or dietary supplements, will have been approved by local authorities based on extensive studies, including proof of bioavailability and toxicological characteristics. In Europe e.g. the EFSA (European Food Safety Authority) carries out safety assessments to evaluate the safety of a raw material for consumers. The Mineral Salts are usually clearly defined by relevant quality descriptions such as pharmacopoeias or E-Numbers. These parameters should be found in the manufacturers' product specifications (often parameters such as "identity", "assay", "pH" are listed among others): the parameters listed in the

specifications should have been analysed accordingly for each production batch. Anything out of the normal range should be suspicious.

Still in some cases, if the parameters "identity" or "assay" fit to the desired material, experts find it hard to examine whether it is a fake or not – the best way to proof if it is indeed a fully reacted organic Mineral Salt would depend on the analytical methods used (as described above). Very helpful can be the comparison of a product with a reliable product that is already sold on the market.

#### Price

All buyers along the food chain should also be conscientious when purchasing ingredients and may be right to be suspicious if they are offered a product that is well below the normal cost price. Even if they were quite sure about the selection of their current suppliers they should not hesitate to critically and systematically question the legitimacy of products being sold to them. The buyer, should refrain from buying inferior or blended goods for a fixed price, in order to procure products as cheaply as possible.

#### Combating mineral salt adulteration

While there are public databases compiling reports for food fraud, there is no tool for ingredients like Mineral Salts.

Producers of food supplements should use good judgment when purchasing their raw materials. Unfortunately, there are no educational resources available and no guidance for industry to support the quality assurance and safety of these products.

The detection of food fraud is not easy, especially in the case of Mineral Salt adulteration. So what tools can deter fraudsters, or give early detection of fraudulent salts?

#### Partnership with specialized producers having established food standards

In order to maintain the integrity of a product, one should rely on partnerships with raw material manufacturers instead of pure trading activities. Producers with extensive specialized knowledge that process raw materials of trustworthy resources with the strategy to communicate openly and transparently about the production will distinguish themselves from the fraudsters in the industry.

Since the so-called Benchmarking Requirements of the GFSI (Global Food Safety Initiative) published in 2017 – there are clear requirements against food fraud which have to be included in all GFSI-approved food safety standards.<sup>5,6</sup> This applies to the IFS standards as well as BRC or FSSC 22000, a system used by food manufacturers to prevent food fraud. Oversight, information, and communication are essential to a productive and beneficial system to eliminate food fraud. The central element being a hazard analysis and risk assessment implementation.

#### Great Find or Great Fraud?

While existing product fraud initiatives have focused on food, food supplements and drugs in general, little attention has been devoted to defining the new, complex and interdisciplinary thread of ingredient fraud. The prevalence of Mineral Salts being adulterated serves as supporting evidence for the need to create for a proactive approach towards prevention and a greater focus on regulation and oversight. A comprehensive compilation of information about

known problematic Mineral Salts and detection methods does not currently exist. Therefore, the problem of adulteration will continue to persist for consumers, manufacturers, retailers, and authorities.

Due to globalisation and fragmentation of the flow of goods as well as creative forms of falsification and new methods of analytical proof, Mineral Salt adulteration remains an industry challenge, even as industry and consumer increasingly demand more transparency in sourcing and labelling. Unfortunately, as long as the food and food supplements industries continue to compete primarily on price points, certain companies will continue to undermine their product in order to undercut their competitors. Adulteration appears to be one approach to cutting cost for profit as it offers surprisingly cheap products and alternatives.

Adulteration poses many serious and long term risks and ramifications for suppliers and consumers. If not regulated, it has the potential of overrunning legitimate resources and eventually causing health and safety issues on a global scale.

Dr. Paul Lohmann® is the world's leading manufacturer and provider of high value Mineral Salts for the food, nutritional supplement and pharmaceutical industry. Since 1886, a high level of flexibility and an innovative spirit enables Dr. Paul Lohmann® to respond to changing needs. Customers can profit from the broadest available portfolio of high value Minerals, with more than 400 products in a range of qualities, designed to provide optimum performance across a wide range of applications.

In the GMP and FSSC 22000 certified facilities, Mineral Salts are produced at quality levels stipulated by pharmacopoeias, regulatory food guidelines or tailored according to customers' specifications. Dr. Paul Lohmann® also carries out product and application development in close cooperation with customers. This includes the adaptation of chemical and physical parameters such as bulk density, wettability, particle size, purity or pH-value.

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**Dr. Paul Lohmann GmbH & Co. KGaA**  
**Hauptstrasse 2**  
**31860 Emmerthal/Germany**  
**sales@lohmanna4minerals.com**  
**www.lohmanna4minerals.com**



# Vitafoods Europe returns in May 2022



Last October, 22,000 nutraceutical professionals came together virtually and in person to network, collaborate, and share knowledge from across the industry at Vitafoods Europe 2021. Now, Vitafoods Europe is back once again – at its usual May timeslot – combining an online platform and the in-person event in Geneva, to re-connect and inspire the nutraceutical community in an ever-changing, and increasingly health-conscious, post-COVID world.

By bringing together popular in-person attractions with a lively virtual programme, Vitafoods Europe is cementing its position as the leading global event to network, forge long-term collaborations, share ideas, source innovative ingredients and new suppliers, discover new product development solutions, and hear from technical experts and industry thought-leaders.

This year, visitors will be able to access the Vitafoods Europe online platform a week before the live event (2-13 May) to immerse themselves in exclusive insight-led content and use the data-driven matchmaking tool to conduct virtual meetings. Plus, the online platform and SMART technology enables them to plan their visit to Geneva and set up in-person meetings in advance to ultimately enhance their experience and maximise their time at the live event (10-12 May).

## Vitafoods Europe 2022 highlights

The comprehensive event agenda explores key market trends, plus regulatory complexities, packaging and labelling challenges, and more – including an enhanced focus on pressing industry issues, such as mental wellbeing, women in nutraceuticals and sustainability. Highlights of this year's event, across online and in person, include:

### Extensive industry expert insights

With online content and in person presenta-



tions taking place across 4 theatres – including the Main Stage powered by Vitafoods Insights, Life Stages, New Ingredients, and Probiotics theatres – visitors can explore over 90 hours of content across the whole event. Expect talks on everything from the regulatory landscape for probiotic ingredients, to innovative prenatal supplement ingredients for child mental health.

### Tailored networking opportunities

This year's SMART event format allows for global connectivity across both the in-person and online platforms. Visitors can find and connect with potential partners and suppliers before and during the show using Informa's intelligent data-driven matchmaking service. Facilitating efficient and effective networking, this connects visitors and exhibitors with shared goals, the right backgrounds and in-demand expertise.

### Discover the latest innovations

Visitors looking for inspiration for their next product can tour the New Product and Ingredient Zones to discover the very latest ingredient technologies, formulations and products, as well as exploring new research. Alternatively, the virtual Innovation Tour is available in video and audio format, to complement the live show experience.

### Deep dive into trending ingredients with themed Resource Centres

For those interested in Omega-3 fatty acids or probiotics and gut health, the tailor-made Resource Centres offer a deeper dive into these trending and expanding market areas via bespoke and exclusive expert content.

### Sustainability success stories

With sustainability moving up the priority list for many brands, Sustainability Corner enables visitors to explore some of the challenges and the

success stories, with expert-led sessions on how the industry can become more sustainable.

### Delve into mental wellbeing

Following the impact of the pandemic on consumers globally, as well as the fact that many of them have busy and stressful daily lives, mental wellbeing is a key focus for Vitafoods Europe 2022. This year, Informa is also hosting a new Vitafoods Europe Summit on the topic, offering an in-depth exploration of the important role of nutrition in mental wellbeing. Running the day before the exhibition, 9 May, at the Fairmont Grand Hotel in Geneva, the Summit will offer insights into the latest ingredient science and its practical application in mental health nutrition solutions. Ticket prices are available at an early bird rate of €349 until 8th April, and will provide visitors access to Vitafoods Europe 2022.

As the pace of innovation continues to pick up, and with consumer interest in nutrition and health at an all-time high, there's never been a better time to take an active role in the nutraceutical community. Vitafoods Europe 2022, which



will continue to run in accordance with the latest Informa AllSecure standards and local Swiss guidance, is once again set to connect the community, facilitate learning and discovery, and provide an opportunity to solve the biggest global health issues, together.

Registration for Vitafoods Europe 2022 is now open. Discover more about the show features and registration options at [www.vitafoods.eu.com/](http://www.vitafoods.eu.com/)

For further information on the Vitafoods Europe Summit, or to secure a place, visit <https://www.vitafoods.eu.com/en/summit.html>.

\*Developed in collaboration with industry partners, suppliers, government and local authorities, Informa AllSecure ensures enhanced event health and safety through 10 key commitments, outlined extensively in the Informa AllSecure guidebook.



The world's nutraceutical event

10-12 May 2022 Geneva

2-13 May 2022 Online

# Connect with nutraceutical experts

This year, Vitafoods Europe 2022 returns to its annual May slot in your diary. As it's a hybrid event you'll be able to join us in person and online to share ideas, see new products, source ingredients and innovate with an inspiring community of experts. This is your chance to connect with industry-leading buyers, suppliers and manufacturers from over 110 countries, so don't miss it.

## Register for your free badge now and save €160\*

Geneva: **10-12 May**

Online: **2-13 May**

For more details visit

**[vitafoods.eu.com](https://vitafoods.eu.com)**

\*Onsite visitor registration will cost €160



# Effective and sustainable: Natural astaxanthin meets consumer demands

Vitafoods Europe 2022, booth H100: AstaReal presents new solutions for health supplements focusing on plant-based and personalized nutrition

**P**reventive health measures and immune support continue to be of major importance for people worldwide, as these pandemic-driven trends continue to grow. The same applies to demand for plant-based and personalized diets. At Vitafoods Europe 2022, natural astaxanthin pioneer AstaReal will therefore be focusing on ingredient solutions that address these consumer concerns. With its AstaGummy Boost, which deliver the antioxidant in a gummy format particularly easy to swallow, and vegan softgel capsules, the company is tapping into new target groups in order to meet the needs of consumers.

Thanks to its properties, AstaReal® astaxanthin serves several current trends at the same time:



Derived from the microalga *Haematococcus pluvialis*, astaxanthin is both a natural carotenoid and sustainable nutrient that aligns with emerging, plant-based product trends. Almost at the bottom of the marine food chain, microalgae supply fish and krill with astaxanthin and omega-3 fatty acids, yet are a sustainable as well as vegan alternative to both.

In addition, AstaReal® astaxanthin with more than 70 human clinical studies demonstrates numerous benefits for the growing demography of healthy agers. Its unique structure enables natural astaxanthin to target free radicals in the inner and outer layers of cell membranes, thus protecting cells and their powerhouses (mitochondria) from oxidative stress. In doing so, astaxanthin can boost muscle endurance, counteract fatigue, reduce inflammation, improve



skin texture and enhance capillary blood flow in the eyes, as well as the brain.

Whether as algal biomass, a cold water-dispersible powder, or oil extract, AstaReal offers natural astaxanthin in many different forms. Diverse processing options and possibilities allow for the combination of astaxanthin with other ingredients, such as vitamins, minerals, pro- and prebiotics and plant extracts, in liquid shot, soft gummy, sachet or capsule format. With more than 30 years of experience and insights into

upcoming market changes and consumer demands, AstaReal can provide its customers with comprehensive product development support. Throughout the process, the company always keeps in mind specific customer needs and challenges, such as ingredient compatibility, rate of absorption, avoidance of unpleasant odours or tastes, product stability, regulatory framework, and manufacturing efficiency.

Peter Ahlm, Marketing & Sales Manager at AstaReal, says: "Stable immune health, plant-based or personalized nutrition are all topics that are driving consumers and thus our customers. People are more willing than ever to look closely at ingredients that help them achieve their holistic health goals. At the same time, they are demanding sustainable products as they are considered better and healthier. With natural astaxanthin in its many different delivery formats, we can meet these demands in the best possible way."



[www.astareal.se](http://www.astareal.se)

Discover  
the **POWER** of

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## BIOIBERICA Stand: F130

### Bioiberica to make its debut in two new health areas at Vitafoods

Bioiberica, a global Life Science company with more than 45 years of experience specialising in the identification and extraction of molecules of high biologic and therapeutic value for the pharmaceutical and nutraceutical industries, has announced it will be entering into two new health areas – digestive health and skin and beauty – at Vitafoods Europe 2022. As part of its exciting event programme, Bioiberica is also set to exclusively unveil a range of new functional food applications for its Collavant n2 native (undenatured) type II collagen ingredient for joint health. These initiatives mark a key milestone in the company's long-term strategy, which aims to harness scientific innovation to support its customers and partners in the development of market-leading solutions that meet consumers' evolving health needs.

#### Explore new ingredient innovations

Visitors to the New Product Zone can be the first to explore two of Bioiberica's newest ingredients, launching at the event. Leveraging the company's extensive scientific expertise in biologically derived ingredients, these solutions have been specially designed to support dietary supplement and functional food product innovation in two of the fastest growing markets – digestive health and skin and beauty.

#### Discover the power of three

Hyaluronic acid has been shown to provide benefits that span several health areas – from mobility to skin and beauty. For companies formulating with hyaluronic acid, Bioiberica will present the science behind its patented hyaluronic acid matrix ingredient, showcasing how its unique composition of three naturally-occurring components can help brands to leverage the growing opportunities for innovation in an increasingly busy marketplace. Attendees can join Bioiberica's experts at the New Ingredients Theatre on Wednesday 11 May at 11.30am CET to learn more.

#### Driving collagen NPD in functional foods

Over one third of consumers want to improve their joint health. As consumers of all ages take a proactive approach to their mobility, demand for functional foods with joint health-boosting ingredients is growing at a fast pace. In response to this rising consumer demand, Bioiberica will unveil a new functional food offering for its popular Collavant n2 native type II collagen. Visitors to the Vitafoods Tasting Bar and Bioiberica stand alike will have the chance to sample mango-flavoured Collavant n2 collagen gummies for themselves, as well as explore the latest R&D opportunities with this next generation collagen ingredient.

#### Empowering the health evolution

"There's never been a more exciting time to be working in the health and nutrition industry. Growing consumer health-consciousness is catapulting innovative ingredients and new product formats into the spotlight, while trends and consumer needs continue to evolve at high speed. For manufacturers, there's a lot to keep up with," says Jaume Reguant, Healthcare Director at Bioiberica.

"That's why, last year, we launched a new brand identity for our branded ingredients portfolio – to provide a stronger foundation with greater potential to build and expand into new areas – not just for Bioiberica, but our partners, too. And now, we're ready to make our move into the digestive health and skin and beauty markets. Driven



by a desire to help our customers grow their business with truly innovative products, we're very excited to finally showcase these new solutions at Vitafoods."

To discover more about the Bioiberica's innovative ingredients and ongoing partnership opportunities, visit: [www.bioiberica.com](http://www.bioiberica.com).

1 FMCG Gurus, 2021

## EUROMED Stand: C94

### Keep fit and into later life

At this year's Vitafoods Europe, Euromed will showcase its well-known standardised herbal extracts, the Earth Harmony Organic Extracts®, as well as a growing portfolio of natural ingredients inspired by the health-promoting properties of the Mediterranean diet. In addition to lemon, olive, fig, artichoke and pomegranate fruit extracts, the iconic botanical manufacturer will also showcase its recently launched sports nutrition ingredient, the spinach-derived Spisar®. Visitors to the Euromed booth will learn more about the latest research findings, health benefits and various applications of these high-quality extracts, suitable for inclusion in pharmaceutical, nutraceutical, cosmeceutical, food and beverage finished products.

An ever-increasing older population wishing to stay well into later life is driving demand for products that support an active and healthy lifestyle. Euromed's Wellemon®, Pomanox®, Mediteanox®, ABALife® and Cynamed® extracts perfectly tap into this trend, as they contain valuable nutrients that play a key role in the Mediterranean



diet and have been proven to support cardiovascular, metabolic, antioxidant, digestive, immune and skeletal muscle functions, all of which are critical for healthy ageing. Inspired by this nutritional model, Euromed will be highlighting its portfolio of extracts and presenting its new Spisar® spinach extract. Obtained from the nutrient-rich leaves of spinach cultivated in southern Spain, it is gently processed with the Pure-Hydro Process®, an eco-friendly, proprietary extraction technology that uses only purified water as a solvent. Spinach leaves have a naturally high content of phytoecdysteroids, plant secondary metabolites with a wide range of potential physiological and health benefits, such as improved physical performance and skeletal muscle fitness. Spisar® is standardized for 20-hydroxyecdysone (20E) – the major naturally-occurring ecdysteroid in plants.

Researchers from the Sports Physiology Department at the Universidad Católica San Antonio de Murcia (UCAM) in Spain, investigated the efficacy of daily consumption of Spisar® spinach extract compared to placebo in combination with moderate-intensity skeletal muscle strength training.

The results of the 12-week randomised, double-blind, placebo-controlled trial revealed that supplementation with Spisar® significantly improved muscle strength and muscle quality in subjects aged over 50 compared to a placebo. The published study also highlighted improvements in muscle mass and quality, as well as quality of life. The authors concluded that Spisar® in conjunction with physical exercise may exert overall "all-body strengthening" adaptogenic

activity, and may be beneficial for improving and maintaining muscle health and fitness, both of which are crucial for healthy ageing.

Andrea Zangara, Head of Scientific Communications & Marketing, says: "It's clear that the older generation wants to delay the decline in physical capacity that comes with age for as long as possible. Preventive and active measures will help promote mobility and strength. Both the newly launched and existing Mediterranean fruit and vegetable extracts™ will help our customers meet this market demand."

1 Pérez-Piñero, S.et.al (2021): A 12-Week Randomized Double-Blind Placebo-Controlled Clinical Trial, Evaluating the Effect of Supplementation with a Spinach Extract on Skeletal Muscle Fitness in Adults Older Than 50 Years of Age. *Nutrients* 2021, 13, 4373.

## GELITA Stand: C30

### GELITA presents Cutting-Edge solutions for Supplements

GELITA, the leading manufacturer of gelatin and collagen peptides, will be back at Vitafoods in Geneva presenting its latest solutions. SOLUFORM™ and VERISOL® HST are the new smart solutions to realize fortified gummies for a demanding and growing market. GELITA® EC is enabling enteric soft capsules safeguarding sensitive ingredients through the aggressive gastric environment. And GELITA Health provides turnkey products with scientifically proven BCP® ready to market for the customer in all sales channels. Join our educational sessions and accept the GELITA Wellness Challenge on site.

#### Healthy but tasty, please

GELITA developed three brand new products for fortified gummy solutions to deliver all the health benefits that consumers are requesting while ensuring great taste and texture. Beside all this it secures hassle free production.

#### SOLUFORM™ PE - the protein booster for your confectionery!

SOLUFORM™ PE is optimized for the production of fruit gummies with high protein content. By combining the performance of gelatin and the protein source in one functional ingredient, the manufacturing of protein enriched gummies gets as easy as possible.

#### SOLUFORM™ SR - next generation gelatin for sugar reduced confectionery!

SOLUFORM™ SR allows to reduce the sugar concentration of confectionery without affecting the texture. Thereby a sugar content of a fruit gummy can be cut down from 70% to 40%. Furthermore this leads to a reduced carbohydrate content. Even no-sugar concepts are possible using SOLUFORM™ SR.

#### VERISOL® HST for next generation beauty gummies!

VERISOL® HST is optimized for the production of collagen enriched fruit gummies.

It replaces both, gelatin and collagen peptides and enables a concentration of 15% BCP® in fruit gummies without affecting the taste and texture of the final product.

In this way VERISOL® HST is the perfect solution to cater fortified gummies of the beauty from within segment with the required high dosage of BCP®.

#### Safeguard sensitive active ingredients to the intestine

Consumers have been ingesting nutrients in soft capsules for decades due to their ease of swallowing and convenience. While for some fills it is important to be released as fast as possible, like analgesics, for other sensitive substances it is crucial they are transported safely through the aggressive stomach environment to be released only in the small intestine. In this way you also can avoid the nagging fishy burps caused by an early release of omega 3 in the stomach.

Instead of applying an acid-insoluble opaque coating to the capsule in a second time and cost-consuming production step, GELITA® EC allows production of crystal clear enteric soft caps in one single step using existing equipment.

#### Innovations for a life in motion

From concept to shelf, our goal is to provide customers with turn-key BCP® solutions to create innovative products in their selected application area from tailor-made recipes to individual packaging. Take advantage of the GELITA Health expertise, resources,



GELITA® EC  
Enteric Capsule Release

How to safeguard  
active ingredients to  
the intestinal flora.



and network to speed-up your go-to-market! Use your own brand or license one of the strong international GELITA HEALTH brands – it is up to you.

Life on stage

Visit join us for our educational sessions:

- “Enteric Capsules for New Application Opportunities”  
May 11, 11:30 in the Probiotics Theatre
- “Fortified Gummies – Pleasure meets health”  
May 11, 15:00 in the New Ingredients Theatre

Accept the GELITA Wellness Challenge on-site and win great prizes

## Givaudan Stand: H89

### “Breaking taboos in menopause and solutions to improve quality of life” presentation from Givaudan

Givaudan develops health and nutritional solutions that do good and feel good, for body, mind and planet. At Vitafoods 2022, Givaudan will feature solutions for women's health, including effective, natural, proven solutions for women of all ages. The company will also deliver a presentation called “Breaking taboos in menopause & solutions to improve quality of life.” Visit the Givaudan stand (H89) at Vitafoods to explore the company's comprehensive portfolio of products across flavours, taste, and functional and nutritional solutions, and learn more about Givaudan's latest consumer research on nutraceutical trends. [www.givaudan.com](http://www.givaudan.com)



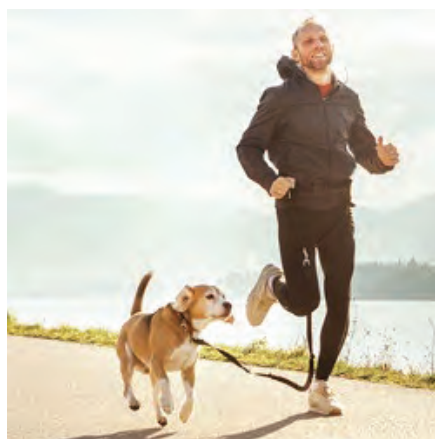
## Lehvos Nutrition Stand: F84

### Come and visit us at Vitafoods Europe 2022

We look forward to welcoming you once again at Vitafoods Europe (stand F84) where we are planning to bring you the latest updates and innovative applications for our well-known branded ingredients such as Longvida®, Bacognize®, WokVel®, Pureway-C®, PureSea®, Golden Omega®, OptiMSM®, EpiCor® and many more. We will have the pleasure again, after the pandemic period, to host some of our key principals, among them, One Innovation Labs, Verdure Sciences Inc, Seaweed & Co., and Golden Omega. Please Contact us to arrange a meeting with them.

Plus we will be pleased to introduce our new PlantNutra® range. These high quality, plant-based, innovative ingredients offer many benefits such as clean-label, traceable and sustainable approach. Also, find out more about our PHARMAGNESIA® high quality mineral range.

Why not book a meeting at Vitafoods where you can speak with our one of our experienced team members who can help bring your formulation ideas to life.



## Nektium Stand: H140

### Nektium's botanicals set to make debut in food and beverage sector

Nektium has expanded its botanical ingredient portfolio into the food and beverage sector for the first time. The move means its clinically researched, branded plant extracts are now available for use in a wide range of applications beyond supplements, including sports and energy drinks, dairy products, gummies, and cereal bars.

Spain-based Nektium's portfolio includes Zynamite®, a proprietary mango leaf extract (*Mangifera indica*) that is clinically proven to help boost the mental and physical aspects of sports performance. It also supplies the adaptogen Rhodioli®, a rhodiola plant extract (*Rhodiola rosea*) that has been shown to help improve cognitive health and enhance endurance.

Thomas Adler, Chief Business Officer at Nektium, said: “The health benefits of natural plant extracts are gaining wider recognition, which means there is an exciting opportunity to take them beyond the dietary supplement and nutraceutical categories and into the more mainstream food and beverage sector. Following significant investment in our research and manufacturing capabilities, we have now been able to adapt our botanical ingredients so that they are suitable for use in a wide range of food and beverage applications, opening a major new opportunity for brands that are looking to harness growing consumer demand for natural health benefits in everyday products.”

This year marks Nektium's 25th anniversary, having been



founded in Gran Canaria in 1997. As part of its celebrations, it has unveiled a new-look website at [www.nektium.com](http://www.nektium.com).

The company will exhibit on stand H140 at the forthcoming Vitafoods Europe (Geneva, 10-12 May 2022).

In another major development, Nektium has also recently announced that it is now a fully certified organic operator. Thomas Adler commented: “Increasing numbers of consumers are looking for natural health products that have been manufactured in a sustainable way. Organic is a great way to communicate the ethical values of a brand to shoppers, so we're excited that we can now offer our customers this option.”

## Romaco Kilian Stand: J236

### New R&D tablet press from Romaco Kilian

Romaco will take advantage of Vitafoods Europe 2022 to show its latest technologies for granulating and tableting nutraceuticals and pharmaceuticals. Visitors will also have a chance to see Romaco's paper blisters for sustainable packaging of nutraceuticals.

The Romaco portfolio covers the entire process chain for the development, manufacture and packaging of nutraceuticals and pharmaceuticals. The machinery supplier is now looking forward to showing its latest R&D tablet press – the KTP 1X by Romaco Kilian – and the VENTILUS® Pilot fluid bed processor by Romaco Innojet at this year's Vitafoods Europe. The two technologies are ideal for granulating and tableting algae products such as spirulina and other superfoods. These natural food supplements are processed without any chemical additives and with no added preservatives. Excellent results are guaranteed in terms of flow properties and granulate compressibility.

KTP 1X R&D tablet press from Romaco Kilian

The KTP 1X is the newest generation of Romaco Kilian's R&D tablet presses for laboratory use. This single-stroke press was designed as an all-in-one instrument for research and development activities. It is suitable for pressing mono-layer, bi-layer and triple-layer tablets as well as tab-in-tab formats. It achieves a maximum output of 1800 tablets per hour and compression forces of up to 80 kN. This versatile R&D press enables the various tableting parameters, such as compression force or the possible tableting





speed, to be determined automatically. The smart measurement system evaluates huge amounts of data in next to no time for this purpose. The KTP 1X is moreover capable of replicating any standard rotary press, making it much easier to conduct scale-up trials. In addition to the production of clinical samples, the technology also allows detailed troubleshooting and hence supports process optimisation. Thanks to the machine's very good rigidity, the punch position in particular can now be measured more precisely. This high measuring accuracy goes hand in hand with extremely low product consumption – so that the KTP 1X is not only cost-efficient but also sustainable. Only a few test series are required to obtain meaningful results because compression studies are highly automated. With its very small compaction area, Romaco Kilian's KTP 1X has a small footprint and is quick and easy to clean – for even bigger time and energy savings.

**VENTILUS<sup>®</sup>** Pilot fluid bed processor from Romaco Innojet

The VENTILUS<sup>®</sup> Pilot fluid bed processor from Romaco Innojet is a mobile all-rounder for pilot scale applications or small batches. The technology impresses with excellent results in terms of flow properties as well as powder and granulate compressibility. 100 percent natural granulation is now possible without any chemical additives. Mounted on four wheels, this compact machine fits through any standard door frame and is designed for plug & play installation. An all-in-one solution intended for batch sizes from 4 to 25 litres, it granulates, dries or coats particles of any size from 10 µm to 2 mm. The technology meets all the requirements for laboratory use as well as for GMP-compliant production of clinical samples. The spray liquid is applied with the central ROTOJET<sup>®</sup> nozzle using a bottom spray system or alternatively by means of the conventional top spray method. The cylindrical container featuring the ORBITER<sup>®</sup> booster permits controlled, gentle batch intermixing. The homogeneous flow conditions improve product quality and reduce the spray liquid consumption while simplifying scale-ups. In addition, the VENTILUS<sup>®</sup> Pilot is suited for hot melt coating processes, which merely requires connection of the patented Innojet IHD hot melt system. The processing time is consequently up to 85% shorter and the processor's carbon footprint is significantly lower.

On show at Vitafoods Europe in Geneva (Switzerland) from 10 to 12 May 2022 (Palexpo, Stand J236).

## Rousselot Stand: I114

### Rousselot<sup>®</sup> set to inspire at Vitafoods 2022 with new consumer study into its unique collagen matrix for joint care

Rousselot<sup>®</sup>, Darling Ingredients' health brand and the global leader of collagen-based solutions<sup>1</sup>, invites visitors to booth I114 at Vitafoods 2022 to discover its latest collagen and gelatin ingredient innovations. At this year's event, Rousselot's exhibition will reintroduce its all-in-one collagen matrix designed to provide joint care solutions for a wide range of consumer demographics. In addition, the company will spotlight the benefits of porcine collagen ingredients and its SiMoGel<sup>™</sup> gelatin solution for innovative nutraceutical gummies.

Visitors to Rousselot's booth can also make use of the Live Chat Corner, allowing them to connect and discuss with formulation experts and also explore tailored technical solutions for their specific formulation challenges.

Presenting a new perspective on senior joint care

In less than 30 years, the number of people aged 60 years and over is expected to double, reaching a total of 2.1 billion<sup>2</sup>. In parallel



to these demographic changes, the market value of dietary supplements aimed at supporting mobility is forecast to grow by 4.7% CAGR by 2026<sup>3</sup>. The stage is set for a new generation of nutritional solutions, formulated to support bone and joint health and help an aging global population keep fit into later life. On Tuesday 10 May at 2:30pm at the Life Stages Theatre, Dr. Sara De Pelsmaeker, Global Business Development Health & Nutrition at Rousselot will unveil the findings of a wide-ranging new study to help brands address these shifting consumer trends. Through her speech, entitled 'Joint care innovation with an all-in-one collagen matrix, fueled by new consumer-based science', attendees will discover the impact of Rousselot's collagen matrix on the real-world joint care of more than two-hundred people, all varying in age, gender, and activity level.

Broadening access to science-backed collagen solutions

The company's flagship collagen brand, Peptan<sup>®</sup> is a fully bioavailable collagen peptide ingredient which delivers a world of science-backed health benefits, from joint support and bone health, to enhanced skin and hair beauty. At this year's Vitafoods event, Rousselot will highlight the specific advantages of Peptan P, an accessible premium-quality collagen solution of porcine origin that offers a fast route to market. Event attendees can experience the functional and sensory properties of Peptan P on-stand, through specialized samples, including an oat-based breakfast solution tailored for the nutritional needs of seniors.

Innovative gelatin solutions for center-filled functional gummies

With an attractive appearance, taste and texture that makes them easy to swallow, the appeal of nutritional gummies is easy to understand. Manufacturing this type of delivery format however, can be a difficult task, as traditional starch molding techniques present a risk of active pharmaceutical ingredient (API) cross-contamination. Rousselot's innovative SiMoGel<sup>™</sup> gelatin solution means manufacturers can produce functional, liquid-center filled gummies using an inherently hygienic, starch-free molding technique. These innovative 'gummy caps' allow for higher and more accurate API dosing, with virtually no risk of interaction with the gelatin excipient.

SiMoGel's unique potential can be discovered in person at Rousselot's booth, where visitors can sample liquid-center gummies with Ibuprofen, along with other inspiring application prototypes for the all-in-one collagen matrix.

To learn more about how Rousselot can become your trusted partner for collagen and gelatin solutions, stop by booth I114 or visit: [www.rousselot.com](http://www.rousselot.com)

<sup>1</sup> Global Gelatin Market Insights Forecast to 2026, Calibre Research, 2020.

<sup>2</sup> The World Health Organisation, Aging and Health, October 2021, <https://www.who.int/news-room/fact-sheets/detail/ageing-and-health#:~:text=By%202050%2C%20the%20world's%20population,2050%20to%20reach%20426%20million>

<sup>3</sup> Euromonitor

<sup>4</sup> Global Gelatin Market Insights Forecast to 2026, Calibre Research, 2020.

## Royal DSM Stand: F80

### DSM brings purpose-led innovations for immunity, gut, brain and maternal health to Vitafoods Europe 2022

Royal DSM, a global science-based company active in Health, Nutrition & Bioscience, is to showcase its latest innovations at Vitafoods Europe 2022 – including purpose-led solutions for immunity, gut, brain health and more. On booth F80, visitors can discover DSM's science-backed and sustainable market-ready solutions that help to streamline product development; enabling customers to get to market faster with health benefit-driven solutions. Plus, visitors can explore DSM's broad ingredient portfolio for the maternal nutrition market through a series of new concepts.

With immunity remaining a top consumer health concern in 2022, DSM will introduce ampli-D<sup>®</sup> as it showcases its extensive portfolio of solutions and capabilities as an end-to-end partner. Currently pending approval from the European Commission as a novel food and source of vitamin D, ampli-D<sup>®</sup> is a bioavailable source of the biologically active metabolite of vitamin D and will be available as a market-ready solution. Through its more efficient action, ampli-D<sup>®</sup> will enable customers to support the health of the 88% of individuals globally reported to have suboptimal vitamin D levels.<sup>1</sup>

Another ingredient attracting attention in the health and nutrition market is cannabidiol (CBD). CBD is set to shake up the dietary supplements category, powered by rising consumer interest in its potential benefits across a number of areas related to brain health, including stress, mood and sleep. At the show, visitors can learn more about DSM's new customized premix and market-ready solutions for CBD, which are designed to enable customers to enter the market with speed and confidence as soon as the ingredient is authorized in the European Union.

Also in the spotlight will be DSM's gut health expertise. Visitors to Vitafoods Europe can explore how the company continues to support cutting-edge innovation in the gut space, including how it is helping customers navigate the developing science in the HMO market.

On booth F80, DSM will present its market-ready life's<sup>™</sup>OMEGA and Sprinkle It solutions too. A concentrated algal-derived omega-3 in its natural triglyceride form, life's<sup>™</sup>OMEGA delivers the health benefits of eicosapentaenoic acid (EPA) and docosahexaenoic acid (DHA) in one single, quality source. Visitors can discover more about life's<sup>™</sup>OMEGA and how it is creating exciting opportunities for brands to attract a new generation of health-conscious consumers seeking more sustainable ways to support a broad range of health benefits. Sprinkle It is another market-ready solution, specially designed to deliver vitamins and minerals in a convenient granule format, that consumers can take as is or mixed with food. Bringing its world-class premix capabilities, DSM is able to help customers tailor the solution to target specific health needs.

In addition, early life nutrition experts will be on stand to discuss and showcase DSM's maternal nutrition capabilities, and how it supports product development from conception to lactation.

At the show, new concepts including hero ingredients, such as *life'sDHA*® and *Metafolin*® will be presented. Sourced from algal oil, *life'sDHA*® is a sustainable, plant-based alternative to fish oil, proven to support infant brain and cognitive development and reduce the risk of preterm birth, whereas *Metafolin*® is a readily bioavailable form of folate that is easily absorbed by the body. Finally, visitors will also get the opportunity to meet with Hologram Sciences to explore partnerships related to personalized nutrition.

To join DSM at Vitafoods Europe, booth F80, and discover insight-led nutrition solutions that are inspired by people and delivered by experts, book an appointment.

1 Hilger et al. A systematic review of vitamin D status in populations worldwide. *Br J Nutr* 2014, 111, 23-45.

## Solabia-Algotech Nutrition Stand: I168

### Solabia-Algotech Nutrition to showcase its microalgae-based branded ingredients at Vitafoods

Solabia-Algotech Nutrition will showcase its microalgae-based branded ingredients, with concentrated active compounds.

AstaPure® is a natural astaxanthin, derived from the microalgae *Haematococcus pluvialis*. The AstaPure line includes astaxanthin in the forms of oleoresins and whole alga powder. Both forms are available as USDA organic-certified, beadlets, cold water-dispersible format (CWD), and softgels.

AstaPure MAX® is designed to reduce post-exercise muscle pain and fatigue. It is based on whole-algae complex of natural astaxanthin combined with magnesium glycerophosphate and vitamin B6.

Solabia-Algotech Nutrition is a renowned powerhouse for microalgae cultivation and a leading manufacturer of unique active ingredients proven to support wellbeing.



## SternLife Stand: K110

### SternLife presents vegan protein bars and innovative nutricosmetics concepts

SternLife, one of Germany's leading providers of private label solutions for functional foods, will be presenting four new vegan bars at Vitafoods Europe, taking place from 10-12 May 2022 in Geneva (booth K110). The new range is SternLife's response to growing consumer demand for sustainable products that are free from animal ingredients but promise maximum enjoyment. Also new in the portfolio are three powder-based all-in-one nutricosmetics concepts. All products are characterised by well-founded formulas with selected high-quality ingredients; the formulations can be individually customised. This gives companies the opportunity to tailor trendy finished products to their brands and target groups, and use associated health claims.

The days when vegan bars were dry, sandy and unconvincing in taste are now gone, thanks to SternLife's four new bar creations with outstanding sensory properties. Its product developers

have succeeded in developing vegan bars that do not leave a dry mouthfeel after consumption, but instead have an indulgent creamy, crunchy bite and soft texture – and impress with a protein



content of up to 28% and a sugar content of less than 0.5 per cent. The new vegan indulgence bars are available as samples, including the Deluxe Bar with a creamy centre, crunchy topping and melt-in-the-mouth dark chocolate coating in the flavours Cookies & Cream and Caramel Cookie. The recipes for this product line can be individually adapted, and soy- and allergen-free versions, as well organic quality bars, are also available on request.

Detox Booster for the inner cleansing process, skin care for a fresh skin complexion and hair care from within – with the innovative nutricosmetics concepts from SternLife, companies can react quickly to upcoming trends in the beauty sector. All concepts contain proven, innovative active ingredient complexes that allow for health claims. The active ingredient composition of each of the products can be individually adapted. The concepts presented are powder-based for dissolving in water, free of preservatives, dyes and alcohol, and can also be adapted according to taste. With these three concepts, SternLife offers opportunities for companies that want to create or expand a product portfolio in the beauty sector, either with ready-made complete beauty packages or as a basis for individual concepts.

"Our private label product innovations around the topics of beauty, lifestyle and vegan nutrition are produced on state-of-the-art equipment, which guarantees high and consistent quality. We also provide customers with expertise in packaging and marketing, and advise on food regulatory issues. We are pleased to be able to present all of our innovations at this year's Vitafoods," says Marc van Essen, Sales Manager at SternLife.

## Taiyo GmbH Stand: F90

### Taiyo presents innovative concepts for natural-based products

At Vitafoods Europe, functional ingredient expert Taiyo will present brand new concepts which address current consumer trends, such as healthy ageing, sports nutrition and clean label products. The company will showcase new additions to its Sunfiber® portfolio – an all-natural, 100% soluble dietary fiber – as well as its new Sunfiber® Water Concept, an optimum hydration offering with health-boosting properties. It will also present Sunphenon EC, known for its high polyphenol and catechin content with proven antioxidant effects. Other highlights at the Taiyo stand include functional ingredients such as concentrated Moringa seed extract and new Vegemeat concepts.

With Sunphenon EC, Taiyo offers a new variant in addition to existing green tea extracts. This product in the Sunphenon range is



Vitafoods  
Europe



rich in epicatechin, which is found predominantly in cocoa and green tea, and has a proven positive effect on the cardiovascular system. Furthermore, a decrease in morbidity and mortality from cardiovascular diseases is associated with the consumption of flavanols.<sup>1</sup> Therefore it is perfect for elderly people or other consumers who have problems with muscle health, such as muscle atrophy. The product has been specially developed for use in instant tea sticks, instant beverages or supplements.

Vitafoods visitors will also be able to learn more about Taiyo's Chia Protein XiaPure®. Chia seeds are a real health-booster: They contain essential amino acids necessary for good health and they are an excellent alternative source of protein for sports nutrition. With XiaPure®, a finely milled, high-quality vegan protein powder from Chile, Taiyo provides a new formulation for their Vegan Protein Shake. The chia protein makes the mouthfeel much smoother and Taiyo's ingredients: Sunfiber®, Raw Coffee Powder and SunActive® Zinc deliver added nutritional value. The concept can be used for ready-to-drink shakes or protein-enriched ice cream, and is available in three different flavours.

The third innovation Taiyo is presenting is the Sunfiber® Water Concept. With this novelty, Taiyo addresses different target groups, including the ageing population. This generation often does not consume enough water or vital nutrients. This unique concept, however, allows for the production of isotonic drinks that contain less sugar and additional dietary fibre, allowing for much higher bioavailability of minerals. It is also possible to customize such beverages by adding more active ingredients such as Q10 or curcumin, depending on the target group. For example, children or athletes could benefit from the Sunfiber® Water Concept, as these groups are dependent on a targeted nutrient intake.

Other highlights at the Taiyo stand include the various Sunfiber® Blends with different added health benefits, as well as Moringa, a standardised leaf powder with 1% glucanin that has anti-inflammatory properties, and new concepts surrounding the pea-based meat alternative Vegemeat for various consumer groups.

Dr Stefan Siebrecht, Managing Director at Taiyo's German subsidiary, says: "The Corona crisis has had a major impact on consumers interest in healthy eating. More and more people are questioning the ingredients in a product, and increasingly want natural and plant-based alternatives. Taiyo presents solutions and products with which the industry can meet these demands."

1 Heiss, C., C. L. Keen and M. Kelm (2010). "Flavanols and cardiovascular disease prevention." *Eur Heart J* 31(21): 2583-2592.



## Clasado expands EU market presence with NUTRAGROUP distribution deal

**C**lasado Biosciences, a leader in the development of clinically proven prebiotic ingredient and product solutions for the human gut microbiome, has strengthened its European presence through a new distribution agreement with French ingredient specialist, NUTRAGROUP.

The new agreement will see award-winning prebiotic galactooligosaccharide (GOS) ingredient, Bimuno®, available to health and wellbeing formulators in the French market.

The most studied prebiotic of its kind, Bimuno is supported by over 100 scientific publications, including more than 20 clinical trials. Establishing its ingredient in the global market, Clasado has increased its geographic reach with expansion into regions such as North America, Asia, EMEA, Australia and New Zealand.

Per Rehné, CEO of Clasado, explains the significance of the new agreement: "Europe is one of the largest markets for prebiotics and according to research firm Mordor Intelligence, the category is set to grow at a very robust 7.11% CAGR to 2025 in Europe, so it's clear to see that demand is still surging.

"We are continuing to transition from an exclusively science-focused business to one that makes the science commercially available and accessible. NUTRAGROUP is a highly established leader in the health & nutrition market, with a strong presence. We look forward to seeing Bimuno

make its mark in the region."

With gut health continuing to drive the consumer health agenda, Bimuno is designed to make complex microbiome science simple and easy to understand. The ingredient nourishes bifidobacteria, a beneficial bacterium in the gut that is understood to impact key areas of health, including digestive health, mental health, cognition and immune function.

The ingredient is available in powder or syrup form. Bimuno is highly stable under a wide range of heat and acidities, making it suitable for a broad range of applications, such as standalone supplements, including powders and gummies, as well as functional food applications.

Kevin Wilson, Business Development Director at NUTRAGROUP, adds: "In today's market, consumer demand is king. With better gut health high on the agenda, we're proud to add Bimuno to our ingredient range. Despite some of the strongest scientific backing for a prebiotic in the sector, it remains remarkably simple for formulators to use, with a low effective dose and stability that means it can be added to formulations at any point in the manufacturing process.

"France, like the wider European market, is acknowledging the potential of prebiotics - the time for formulators and nutrition brands to embrace the benefits is now. With Bimuno, the path forward is clear for businesses looking to connect with an engaged and proactive health audience.

## Givaudan unveils its new identity, 'Human by nature'

**G**ivaudan, over the past eight years, the Company has expanded its activity into adjacent spaces with 20 acquisitions, going beyond flavours and fragrances into nutrition, health and wellbeing, and beauty. At the same time, societal expectations have shifted with a movement towards more responsible means of consumption and increasing consumer demand for products that make them both feel, and do good.

"Our brand is evolving to fully reflect the Company we are today and our vision for the future. 'Human by nature' celebrates the beauty of the human experience and our connection to nature. We are proud of being a very human company, committed to creating for happier and healthier lives, and deeply invested in showing our love for nature in everything we do," says Gilles Andrier, Chief Executive Officer.

The Company's new brand identity was conceived taking into account the evolution towards a more purposeful society. By shaping the future of food with 'feel good' and 'do good' experiences that respect the planet and nourish body and mind; crafting fragrances to perfume the lives and memories of individuals all over the globe; and by offering innovative beauty and wellbeing solutions that make people feel, look, and do good.

## Chr. Hansen introduces new VEGA™ SAFEPRO® culture range for plant-based meat alternatives

**A**fter launching the VEGA™ Culture Kit for dairy alternatives in 2021, Chr. Hansen is stepping into the meat alternatives arena with the VEGA™ SAFEPRO® range – a new offering designed to keep plant-based alternative proteins safe and fresh for longer. The VEGA™ SAFEPRO® range consists of three cultures that can be applied alone or in combination to undergo fermentation, which helps stem the growth of yeast, mold and contaminants such as listeria.

### Consumer demand for healthy and sustainable foods is spurring growth in plant-based categories

"We are delighted to offer a solution that will help meet global demand for foods supporting the increasingly popular flexitarian lifestyle," says Zdenek Cech, Business Development Manager for Plant

Based Meat Alternatives at Chr. Hansen. "Flexitarians place a large emphasis on the consumption of plant-based foods, while incorporating meat and other animal products in moderation. A full 42% of global consumers reported avoiding certain animal-based products in 2021\*, and VEGA™ SAFEPRO® cultures will make it even easier for them to find options that satisfy their cravings without asking them to compromise on their values."

While plant-based meat alternatives are in greater demand than ever, flexitarian consumers have high standards, expecting great taste, healthy ingredients and minimal processing, all without the additives they prefer to avoid in their foods. Producers hoping to succeed in this space must tailor their recipes accordingly, balancing the need for shelf-life stability with the demand for simple ingredients whose names consumers recognize.

"Plant-based meat alternatives tend to have high levels of sodium, due to the addition of buffered vinegars or different salts used for food preservation, such as sodium acetate or sodium lactate," Cech continues. "With our new cultures, producers may be able to reduce the sodium content in their products, relying on the power of fermentation to support shelf stability so foods remain safe and fresh, naturally."

### Leverage the power of good bacteria to maximize safety and freshness

Fermentation has helped to feed communities and protect food stores for thousands of years. By

employing this ancient process to plant-based meat alternatives, the VEGA™ SAFEPRO® range offers producers the following benefits:

- Helps to control the growth of unwanted lactic acid bacteria strains, pathogens, yeast and molds
- Meets consumer demand for products with natural ingredients, potentially reducing overall sodium content in plant-based meat alternatives
- Contributes to a clean and fresh taste throughout shelf life
- Enhances the sustainability profile of food brands by reducing food waste

"We hope that with VEGA™ SAFEPRO®, our customers come to see us as a close partner as they innovate new offerings for plant-based meat alternatives," says Cech, "meeting the challenge of creating delicious products that are safe from the start and stay safe for a longer time."

The new range is the culmination of years of research and testing, featuring strains that have proven their ability to help stem the growth of contaminants and crowd out yeasts, molds and pathogens in plant-based chicken strips, or in cooked, ready-to-eat products.

"As we look ahead, we believe the plant-based trend is here to stay and will only continue to grow," Cech says. "With VEGA™ SAFEPRO® and the wider VEGA™ portfolio, we are honored to support our customers in creating the best possible plant-based alternatives for meat and dairy, helping them offer the tastiest, healthiest options to consumers around the world."



# TAIYO

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FOR MORE THAN  
70 YEARS

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- ✓ SunActive® Fe, Zn, Mg, Q10
- ✓ Suntheanine®  
(Synthetic L-Theanine)
- ✓ Vegemeat  
(Vegan Meat Alternative)
- ✓ Organic culinary /  
ceremonial Matcha
- ✓ Prebiotic Fruit Powders
- ✓ Moringa Extract
- ✓ Chia Protein
- ✓ Raw Coffee Powder

**TAIYO**

European Representative

TAIYO GmbH

Hagener Str. 20, D-58285 Gevelsberg

Phone: +49 2332 96788-0

Email: [info@taiyogmbh.com](mailto:info@taiyogmbh.com)

[www.taiyogmbh.com](http://www.taiyogmbh.com)

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# Plant-based: better for people and the planet



N

ot since Eve tempted Adam with an apple has a plant-based diet seemed more attractive. Vegetarian and vegan diets have moved from niche to mainstream, and more and more people are embracing a flexitarian lifestyle where meat is regularly absent from the table.

According to the EU-funded Smart Protein Project, 30% of European consumers now consider themselves to be flexitarian, and almost 40% intend to eat fewer meat-based products in the future.<sup>1</sup>

But it's not just the consumer who can see the advantages. Environmentalists, international health organisations and even politicians see the benefits of moving away from greenhouse gas-emitting food sources, such as meat and other animal products.

The European Alliance for Plant-Based Foods says predominantly plant-based diets should be a central part of strategies to address the climate crisis. And it points to research which shows that current food systems are responsible for more than a third of man-made greenhouse gas emissions.<sup>2</sup>

From a nutritional standpoint, there is another imperative for change. According to the 2021 UN Nutrition Global Nutrition Report, deaths attributable to poor diets have grown by 15% since 2010 – more rapidly than population growth.<sup>3</sup> Noting that the proportion of these premature deaths is highest in North America and Europe, the Report calls for action to “transform food systems, increase intake of health-promoting foods, and reduce animal-based foods, to ensure diets are healthy and sustainable for people and planet”.

There is increasing evidence that one of the most promising ways of achieving this is to turn to a plant-based food source that has its origins even further back than the Garden of Eden.

## It's time for microalgae

Microalgae first appeared on earth over a billion years ago. Today, they are an important part of food chains in aquatic ecosystems and are becoming increasingly recognised as an exciting source of healthy and sustainable nutrition.

“Microalgae protein yield can be four to 15 times higher compared to other plant crops such as wheat, pulse, legumes and soybean,” says the European-funded ProFuture research project. “It can be 10 to 50 times more effective in capturing CO<sub>2</sub> and sunlight for photosynthesis than other plants, and it produces about 75% of the global supply of oxygen.”<sup>4</sup>

In nutritional terms, microalgae are a remarkable but poorly explored natural resource. The authors of *Cultured Microalgae for the Food Industry: Current and Potential Applications*<sup>5</sup> describe microalgae as a “prosperous and sustainable” source of natural bioactive compounds with therapeutic properties, including polyunsaturated fatty acids, peptides, phytosterols, carotenoids, polyphenols and vitamins. Adding that they may possess “cardiovascular protective, anti-inflammatory, anti-hypertensive, antioxidant, anti-coagulant, anti-proliferative, and/or anti-diabetic activities”.

One of the largest European producers of microalgae, Portuguese company Allmicroalgae - Natural Products S.A. is committed to making the most of microalgae's potential. Part of the international biotech Greentech Group, it operates a beyond state-of-the-art production site where microalgae grow under unique, controlled conditions.

Already, Allmicroalgae has overcome some of the barriers to the inclusion of microalgae in daily



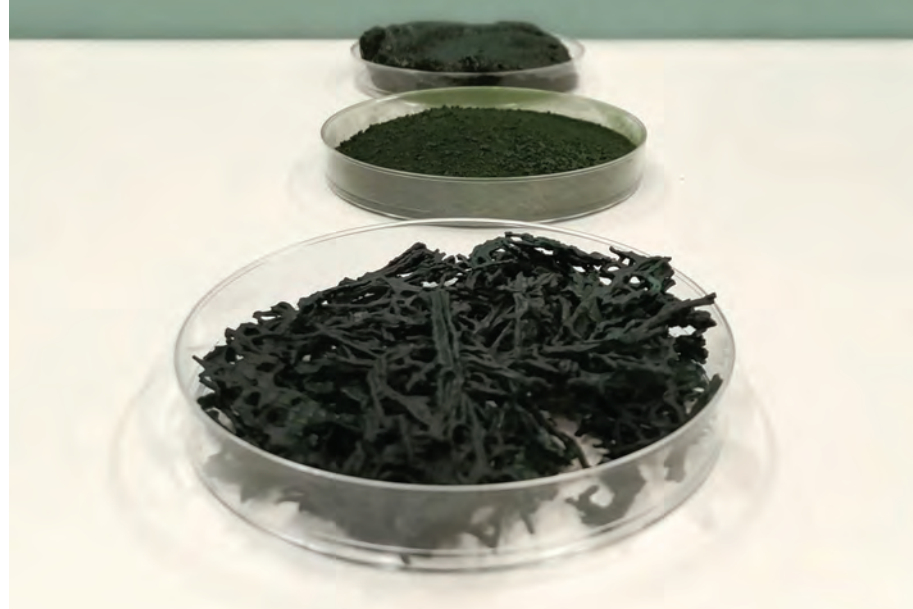


diets on a wide scale, such as colour, smell and taste. For instance, its innovative and unique white and yellow *Chlorella vulgaris* powders, which are EFSA and GRAS approved as food ingredients and food supplements, are neutral in appearance and have a discrete taste profile that allows them to be incorporated subtly into staple products like bread while still delivering full nutritional value.

In bakery and confectionery, ice cream, mayonnaise and snacks, Allmicroalgae's Yellow *Chlorella* works well. Its yellow colour makes it a perfect egg substitute with excellent organoleptic results, while White *Chlorella* can also be integrated into vegan fish formulations and plant-based dairy products.

Both ingredients are effective texturising and thickening agents and the yellow variant can be used as a natural food colouring too. Their detoxifying and antioxidant properties also make them ideal for products that support immune health. Both are available as powder and fresh or frozen pastes.

To develop these novel and unique products, Allmicroalgae is collaborating with Algarve University, where natural selection is used to



vitamins, including vitamins B2 and B12, zinc and phosphorus.

Their nutritional composition allows EU health claims, including maintenance of blood cholesterol levels, normal vision and bone health, reduction of

aroma make it ideal for savoury applications like sauces, pasties, pasta and sausages.

Smooth *Chlorella* has a 25% protein content, while Organic Premium *Chlorella vulgaris* (PT-BIO-03) has a >55% protein content and a chlorophyll content of >3 per cent.

Also in the Allmicroalgae portfolio is Organic *Spirulina* (PT-BIO-03). Derived from *Arthrospira platensis*, it is available in paste, powder, nibs and flakes. Rich in protein (>55-60%) and dietary fibre, it contains all essential amino acids, plus phycocyanin (18-45 per cent), iron, vitamin B12 and Omega 3 fatty acids. Its mild flavour suits a wide variety of foods and drinks, such as baked goods, pasta, juices, smoothies and fermented beverages. The nibs are a perfect topping for ice cream, yoghurt, salad and cheese.

Using gentle traditional processing techniques such as solar drying, Allmicroalgae maintains *Spirulina's* valuable nutritional profile and bioactive properties. These backed-by-science benefits include anti-fatigue effects<sup>6</sup> and support for type 2 diabetes treatments, anaemia, pulmonary diseases, muscle and skeletal health.<sup>7</sup> In children, an improvement of fine motor skills, concentration and cognition can also be expected.<sup>8</sup>

Keen to expand the reach of microalgae, Allmicroalgae recently collaborated with Algaplus, a Portugal-based pioneer in the production of macroalgae from seaweed, to combine the benefits of micro and macroalgae in one unique blended product – Algaessence®.

Algaessence is an Organic powder (PT-BIO-03) comprising *Chlorella vulgaris*, *Fucus vesiculosus* and *Ulva rigida*. Rich in protein and dietary fibre, high in vitamin B12, Omega 3, iodine, iron and magnesium, and low in saturated fats, it is ideal for fortification of milkshakes, juices, soups, sauces,

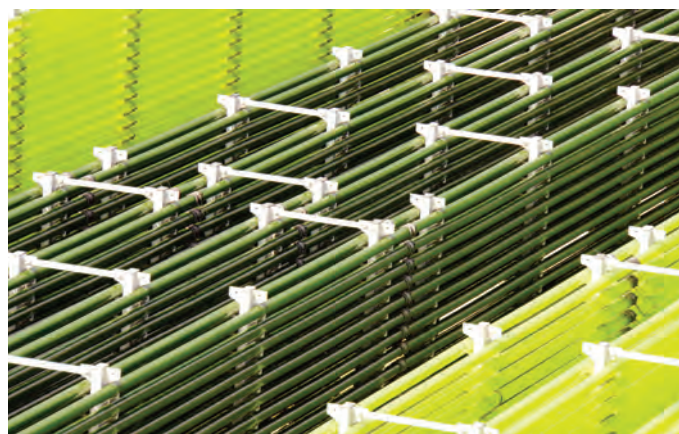


isolate microalgae strains with excellent nutritional and organoleptic profiles.

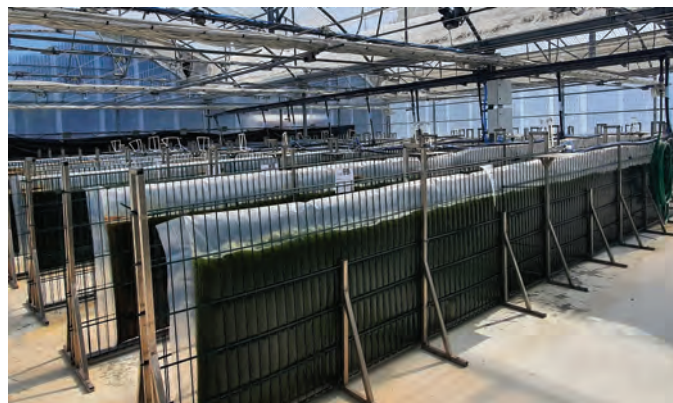
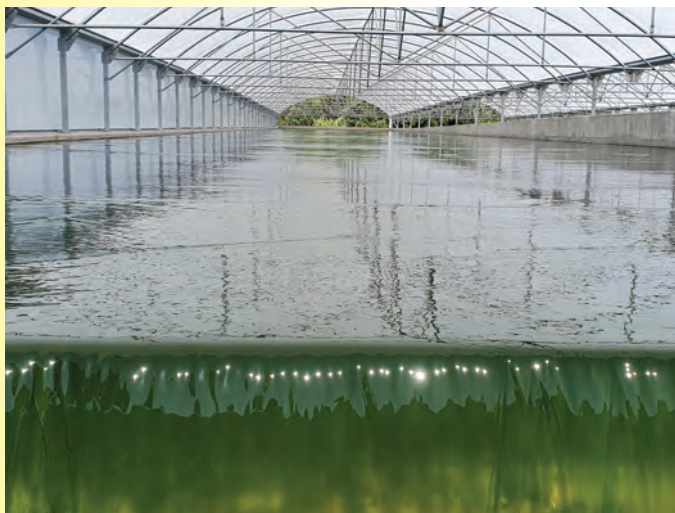
Yellow and White *Chlorella vulgaris* contain 35-45% protein and around 20% dietary fibre. They are a valuable source of Omega 3, 6 and 9 fatty acids, and contain a vast array of minerals and

fatigue, cell protection and immune system support.

Allmicroalgae also offers Smooth *Chlorella*, again specially developed to address the technical and organoleptic challenges of food formulation. Its light green appearance and mild algal taste and







yoghurts and fruit-based products.

#### Future proof

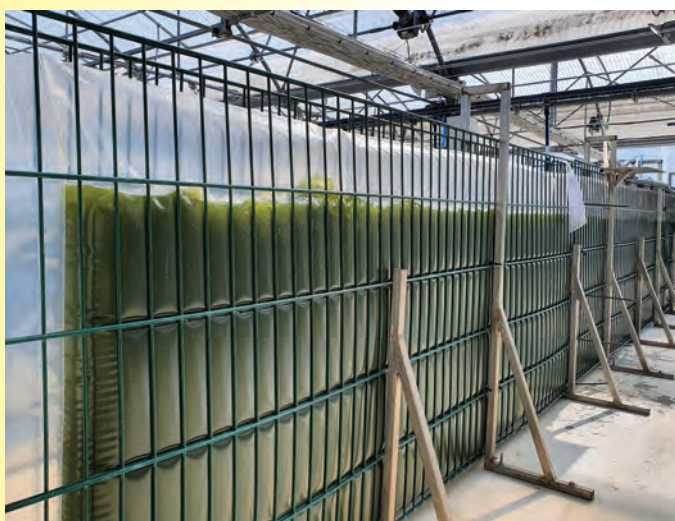
"We work on what we believe to be part of a global sustainable solution and continue to conduct research that will allow food producers around the world to unlock the full potential of microalgae biochemistry," says Joana Laranjeira, Allmicroalgae R&D and Plant Manager.

Allmicroalgae has one of the largest micro-algae production sites in Europe, where fermenters, green panels, photobioreactors and open raceways enable production on a large scale. All products are free from gluten, lactose, nuts, additives, soy and GMO, perchlorates, and pathogenic flora such as *Bacillus cereus*, and processed without the use of fertilisers, pesticides and irradiation.

With a commitment to transparent operations and the highest safety standards, Allmicroalgae is certified for GMP, GMP+, European Organic Production, Halal, Kosher, ISO 22000, ISO 9001 and ISO 14001.

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**ALLMICROALGAE – Natural Products, SA**

**Joana Laranjeira da Silva**

**Rua 25 de Abril, s/n, Pataias - Gare, 2445 - 413 PATAIAS, Portugal**

**Mob: +351 93 9966886**

**Tel: +351 300 010 873**

**Email: [info@allmicroalgae.com](mailto:info@allmicroalgae.com)**

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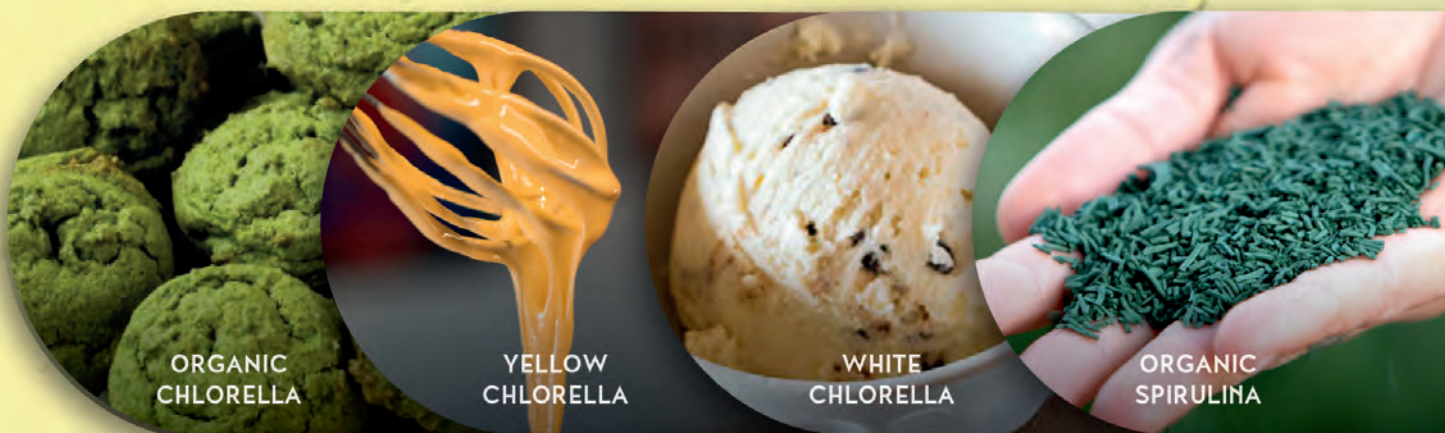
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# Rediscovering porcine collagen



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Throughout most of human history, pork, along with the collagen it contains, has been a central dietary staple. Despite its thousand-year-long journey with humanity, pork is still a relatively overlooked source of collagen peptides. This article takes a closer look at porcine collagen, its history, its comeback in the western world - and how it can help to meet the needs of today's health and nutrition consumers.

## What is collagen?

Before taking a closer look at porcine-sourced collagen, it is important to understand collagen in general. Collagen is a protein that can be found in all animals, including humans. It is the main structural protein and performs an essential function: it's the glue that holds everything in the body together, giving it structure. The highest concentrations of collagen are found in connective tissues, bones, and skin. This type of natural, unprocessed collagen found in the body is commonly known as 'native collagen'.

## Getting the benefits from collagen

The benefits of collagen have been well-known for centuries: from the 12th-century abbess, scholar, and composer Hildegard von Bingen recommending people to find relief from

joint pain by consuming a calve-feet broth, containing collagen, from its uses across Asia for skin beauty purposes, the multifunctional health, mobility, and beauty benefits are clear to see. However, as native collagen is hard to digest, it needs to be processed into a more bioavailable form before being used in supplements and nutritional products. By breaking down the molecular bonds between individual collagen strands, it is possible to create collagen peptides: smaller molecules that can be digested and absorbed by the body. These peptides can then be used in a range of beneficial supplements that contribute to the health of skin, bones, and joints.

## Porcine collagen: an undervalued staple

At present, pork is one of the most popular meats in the world, accounting for 36% of the world's meat intake. As porcine collagen is sourced directly from pigs, particularly the bones and skin, this form of collagen plays a central part in most consumers' diets, whether they realize it or not. While much of the population has probably not heard the term 'porcine collagen', most will have heard of 'pork gelatin', a common gelling agent found in confectionery, like sweets, gummy bears, and jelly. Of course, pork gelatin is derived from porcine collagen - and it's one of the ingredients that give jelly its unique, jelly-like texture. It can be

made as simply as slowly boiling a ham hock or pork shoulder in a stew or soup; the resulting liquid that turns into a jelly when cooled is gelatin. This gelatin is rich in porcine collagen and is more bioavailable than native pork collagen. However, its digestibility is still lower when compared to pure collagen peptides.

## Porcine collagen is baked into human history

Archeological evidence suggests that pigs were among the first domesticated animals in human history, a development that probably came about as a result of wild boar hunting. As porcine collagen is extracted and made more digestible by the cooking process, and humans have been cooking pork for tens of thousands of years, it's safe to say that porcine collagen has been a part of human diets since time immemorial. Early humans would have benefited greatly from the consumption of porcine collagen, as it contributed to optimum joint and bone health, giving them the kind of athletic boost needed to survive in the wild and establish civilizations all over the world.

## Transforming from survival staple into savory delights

Over the millennia, the struggle for survival meant has always driven people to avoid waste.

This means early humans would have used the whole pig, including trotters, bones, and connective tissues (such as cartilage), all of which contain high levels of collagen. These would have been boiled up to form nutrient-dense bone broths and stews. The collagen made the broths and stews thick and creamy, which would've given our ancestors added comfort on cold winter days. As civilization progressed, people discovered you could extract the collagen from the thickened broths and use it as an ingredient. Eventually, this evolved into aspic, a savory jelly used in the creation of all kinds of wonderful dishes found in cuisines worldwide. One of these is brawn. Brawn, is simply meat (typically pork head-flesh) that's set in aspic. It's then sliced and eaten, hence its other name, 'head cheese'. It originated in Europe before spreading around the world, and today variations of brawn can be found around the globe. The Vietnamese have *thịt nấu đông* and the Russians have *kholodets*, which are popular at Christmas time. Aspic is also found in other well-known dishes. In France and Britain, it is the jelly in *pâté en croute* and pork pie, respectively.

### Making a splash in Japan and Asia

The porcine collagen tradition is alive and growing across the world. Did you know, for instance, that in Japan – particularly among women – collagen peptides are in huge demand for the many health and beauty benefits they are associated with? Most Japanese drugstores stock a wide array of collagen supplements in different forms, ranging from specially formulated drinks to versatile powders that can be used in different ways. Much of this supplementation is derived from porcine collagen, which, owing to the prominence of pork in Japanese cuisine, is generally accepted as a fantastic source of collagen peptides.

All over eastern Asia, pork products are extremely popular, with porcine collagen being a regular part of many consumers' diets. Here are just a few examples:

- Okinawans stew their pork slowly, which gives them a healthy dose of collagen
- Ramen, a popular noodle broth in Japan, contains a lot of collagens due to the large number of pork bones used in its creation
- In China, collagen-packed pig trotters are very popular snacks

### And the resurgence continues . . .

Dietary collagen, in fact, is gaining popularity across the whole world. Take the recent trend for 'bone broth' as one example. Like early humans, more and more people today are enjoying collagen-rich broths as a way to improve their diets and experience wholesome, comforting taste sensations. This trend is helping to fuel the comeback of porcine collagen in the West because, when making their homemade broths and soups, people are turning to affordable staples, such as pig trotters, pig bones, and pig cheeks. More and more consumers are rediscovering just how tasty and nutritious these collagen-rich products are. All this indicates that pork collagen is here to stay, highlighting why porcine collagen peptides can be a vital solution to growing consumer demand for collagen.

In Britain, the porcine collagen resurgence is underway too. One example is the comeback of pig trotters, as reported by the BBC: a popular treat among working-class Brits until the mid-20th century, pig trotters fell out of favor due to their negative image as cheap cuts from undesirable

parts of the animal. Today, they are bouncing back. And, who can forget Brits' love of pork scratchings too, a popular snack made from pig skin

### How can manufacturers meet the rising demand for collagen solutions?

Consumer interest in collagen-based supplements is increasing around the world, with the category seeing a threefold increase in product launches from 2017 to 2021.<sup>1</sup> With this market growth, it is vital to offer consumers exactly what they are looking for: products that offer premium quality, a prestige reputation, are cost-effective, and have a positive consumer reception. While the supply of beef and fish collagen has met with massive success in recent years, there is a major opportunity for porcine collagen to take a more prominent role in the nutraceutical market.

From keto to better-for-you pork products, porcine collagen is quickly becoming a major force in the health and fitness markets. As a safe,

collagen peptide production facilities with a dedicated premium porcine collagen production facility in Ghent, Belgium. This IFS, FASFC, and HACCP certified site, has specialized in porcine collagen extraction since 1962, is one of the largest sites of this kind in the world, and now produces premium porcine collagen peptides according to the highest standards of quality and safety. Also housed alongside the new production line at the Ghent site is Rousselot's Global Expertise Center, where science and innovation teams harness R&D and application labs, a sensory program, and a pilot hall to drive the organization's innovation pipeline.

### Introducing Peptan P

For industry players looking for a source of high-quality porcine collagen, Rousselot offers an answer: Peptan P. Peptan P offers an accessible, effective, and adaptable ingredient as a source of high-quality collagen. The raw materials used to manufacture Peptan P are traceable to within four



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versatile, and premium ingredient that is cost-effective for both manufacturers and consumers, porcine collagen is quickly emerging as an ideal ingredient.

### Consumers want high-quality, safe, and traceable porcine collagen

When it comes to purchasing porcine collagen, guaranteeing the importance of quality, safety, and traceability cannot be emphasized enough. In order to get the best quality collagen peptides, the source-collagen needs to go through a rigorous quality control process. This means, among other things, that it must come from sources that are regulated under strict ethical and safety, and that the manufacturing processes need to meet the highest industry standards. One of the best places to source porcine collagen is the European Union. This is because of the strict rules that safeguard the welfare of pigs in the EU. These strict regulations ensure, for instance, that pig feed is nutritional and safe according to EU regulation. Demonstrable traceability is another essential factor in making sure that porcine-derived collagen peptides meet the highest standards.

### Meeting increased demand for porcine collagen at Rousselot Ghent

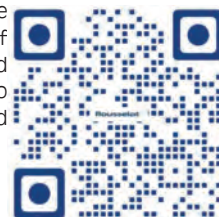
With the market booming, offering consumers a safe, premium, and cost-effective porcine collagen solution can get you results. To help nutraceutical manufacturers meet the increasing demand, Rousselot has increased its

hours of the supplier, consisting of GMO-free pork sourced exclusively from registered European facilities, audited by Rousselot. This commitment to complete traceability gives nutraceutical manufacturers valuable information on the origin species, quality, and safety of their collagen ingredients. Beyond offering producers complete peace of mind, Peptan P presents a versatile, cost-effective collagen peptide solution with a range of functional claims. By incorporating the ingredient into their offering, nutraceutical manufacturers can take advantage of the range of science-backed benefits the Peptan brand provides. Additionally, Peptan P is highly bioavailable, cold-water-soluble, and has a completely neutral sensory profile, so there are virtually no limits to its potential in food, beverage, and nutraceutical applications.

Want to learn more about the potential of porcine collagen and Peptan P? Register to our webinar on-demand now: QR code

Reference:

1 1 Source: Innova Market Insights



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# The ingredient trends shaping the future of sports recovery



Historically, there has always been a clear distinction between performance nutrition and that of everyday active consumers. These markets had different needs, different demographics and different marketing strategies. We are now in the middle of a seismic shift which is seeing the lines between these markets become more blurred.

This shift is driven by massively increased levels of consumer health awareness, leading to people paying closer attention to nutrition and exercise than ever before. This is partially due to the effects of COVID-19, with people working from home, juggling home schooling, prioritising mental wellness, as well as growing concerns around potential future health issues. To manage these physical and mental stresses of the pandemic, and to future proof their health, people are exercising more. In fact, 60% of consumers say they now exercise at least three times a week on average as a result of the pandemic.<sup>1</sup>

The result is that as these two traditionally distinct sectors merge, consumers are becoming more concerned with issues typically reserved for professional athletes, such as accelerating muscle recovery, nutrient absorption and preventative measures to protect against injury. At the same time, there is another shift in mindsets both in the elite and lifestyle fitness industries. Historically, fitness culture had been centred around pushing harder and exercising more. Now there is increased awareness of the importance of recovery and sustainable levels of activity. For example, a growing number of consumers no longer find it admirable to push through the pain, instead they are taking a more intuitive approach to health and fitness, listening to their body, knowing when to rest, and – crucially – seeking nutritional solutions to help them recover faster.

As a result, everyday food brands – as well as traditional nutrition manufacturers for the professional athlete market – are looking to target



Spokesperson:  
Vicky Davies,  
Global Marketing  
Director, Performance,  
Active and Medical  
Nutrition

the growing active nutrition demographic with solutions aimed at improving performance, aiding recovery and supporting overall well-being. This is creating opportunities for brands that traditionally served the professional sportspeople industry to reach the everyday consumers looking to make an active change to their health and lifestyle – and vice versa with more lifestyle fitness brands finding professional athletes are exploring options to support overall well-being.

To effectively reach consumers across these two demographics, brands must have a strong understanding of consumer needs, access to the latest developments in ingredients science and insights on the most popular formats to deliver specific nutritional requirements.

## Dairy's dominance in protein fortification

First of all, protein remains the top ingredient across all active categories. Proteins are the building blocks for our muscles so there's no surprise that it's a key consideration for anybody looking to improve their fitness.

However, there are many different sources of protein, and no two sources have identical benefits. When it comes to sports nutrition, dairy remains the gold standard in protein. Its role in muscle protein synthesis has been widely researched and verified. Furthermore, milk proteins contain approximately 20% whey and 80% casein on average.<sup>2</sup> Both are high quality proteins with excellent amino acid profiles that are easy to digest and absorb.

Whey protein and whey protein isolates are absorbed by the body almost instantly at a rate of 10g per hour.<sup>3</sup> This means that a 20g portion of whey protein isolate consumed immediately after exercise enables the body to start rebuilding and recovering within two hours.<sup>3</sup> This makes whey proteins an excellent choice for formulas designed to be taken post-workout. As such, whey remains a top choice for formulating active nutrition products – 60% of sports nutrition customers find whey proteins the most appealing.<sup>4</sup>

Dairy also lends itself to clean tasting products that consumers are already familiar with – like milky beverages or fortified yogurts. This is one of the reasons why dairy protein fortification is growing in popularity and accessibility. As part of the trend towards increasing health-consciousness, people are looking for easy ways to make healthier choices. In fact, 4 in 10 consumers want to increase the amount of protein in their diet.<sup>4</sup>

To help meet their protein ambitions, consumers are seeking out functional ingredients in more formats, such as bars and drinks, to support their overall well-being as well as their fitness goals. People also want nutritious products that fit easily within their lifestyle, such as on-the-go formats fortified with protein. And newer, more innovative formats are beginning to become mainstream – from hot, protein-packed takeaway coffees to clear protein waters, and high protein gels.

However, functional food and drinks don't just need to be effective and in the right format – they need to taste good too. With the rise of the active consumer, gone are the days where protein off-notes were tolerated in exchange for nutritional benefits.

To tap into this increased health-consciousness, manufacturers need to balance product positioning that includes other key health priorities, as well as muscle recovery, in a convenient format and with an appealing flavour. By formulating with other health-boosting

ingredients, and reflecting this in the product's flavour, brands can stand out in the busy sports nutrition market. For example, sweet and floral flavours are popular in products in the mood, stress and sleep categories, while fresh and fruity flavours fare well alongside claims associated with immunity. Both of which are trending areas alongside sports recovery.

#### **Creating high protein snacks that stand the test of time**

Consumers are routinely swapping out traditional sweet and savoury treats for protein-fortified alternatives. Half of global consumers have switched from traditional snack products like chocolate and confectionery to high protein alternatives such as protein bars, in the last year.<sup>5</sup>

Advances in ingredient science are making this easier. Bars, for example, are one of the fastest-growing formats and are projected to register a global CAGR of 7.2% between 2019 and 2024.<sup>6</sup> High-protein bars – those with at least 20% protein – make up a significant proportion of protein bar the market, representing more than one in three of all bars in the European market.<sup>7</sup> But palatability has been a major issue for many formulators as high protein bars have a tendency to harden over time. And with the protein bar market becoming increasingly competitive, a high protein content that doesn't compromise on taste and texture can help brands stand out.

This is why we developed Excellion® Textpro, using patent pending technology developed specifically for use in high protein bars. It contributes to a softer mouthfeel, reducing hardening throughout shelf life. Equipping manufacturers to not only achieve outstanding nutritional content and quality, but also overcome challenges around texture, flavour, shelf life and formulation.

#### **The growing opportunity for plant proteins**

Traditional dairy protein isn't the only area where formulators face texture and taste

challenges. Plant-based proteins have traditionally been difficult to formulate into tasty, convenient sports nutrition formats. But this is changing. Recent innovation in plant-based ingredients have improved functionality, taste, texture and overall consumer appeal. This innovation has been borne from the significantly increased consumer demand for plant-based products – it's predicted that plant sources will account for 7.7% of the global protein market by 2030.<sup>8</sup>

As the plant-based market comes into its own – the growing movement towards a flexitarian diet is taking plant proteins from a trend to a fully-fledged way of life. Global data suggests that a significant 42% of people consider themselves flexitarians. In comparison, only 4% and 6% consider themselves vegan and vegetarians, respectively.<sup>9</sup> And it's estimated that the value of the global plant protein market – which stood at \$29.4 billion in 2020 – could surpass \$162 billion by 2030. That's a 450% increase in 10 years.<sup>10</sup>

The time for innovation in plant protein for sports and muscle recovery is now – active consumers are as likely to choose plant-proteins as they are traditional dairy proteins. In one survey, where consumers were made to choose their preferred source of protein, the differences between the sources were minimal – 57% of active consumers chose plant proteins, while 55% chose whey as their go-to protein source.<sup>11</sup> Peas and pulses, in particular, provide some of the best, highest quality sources of plant protein, and offer an attractive avenue for creating sports nutrition products.

#### **Beyond functionality: taste and texture in plant protein formulations**

Flexitarians are discerning. When you have both animal and plant-based options to choose from, you're going to choose the ones that taste best and match your values. A huge 83% of global consumers say that a product's flavour is a key influence in their purchasing habits.<sup>12</sup>

While dairy protein innovation has gone from strength to strength, with new and improved

formats emerging like clear sports drinks and protein bars, plant protein formulation is still in its infancy by comparison. The category has made leaps and bounds in recent years but formulating with plant proteins remains a challenge. Ingredients like peas, while one of the most nutritious sources of plant protein, can leave consumers with an unappealing aftertaste if formulated into products without the right know-how.

To capture the attention of the growing flexitarian market and active nutrition customers with an interest in alternative proteins, formulators must innovate with the right ingredients to create a positive plant-based product experience. In-depth understanding of protein formulation and consumer expectations is key – that's why FrieslandCampina Ingredients recently collaborated with AGT Foods to launch Plantaris™. Plantaris™ is a new range of plant protein solutions using pulse ingredients, designed to overcome the common formulation challenges associated with plant protein innovation like the off-note often present when formulating with pea proteins.

#### **Holistic health: what's next for sports and active nutrition?**

Consumers being more physically active isn't the only symptom of the increased health-consciousness that we're witnessing following COVID-19. Overall, consumers are more and more aware of a need to achieve overall wellness and improve their health in multiple areas. In fact, globally, 60% of consumers say that improving their general health and wellness is their top priority in 2022.<sup>1</sup>

And 61% are interested in solutions for cognitive, digestive, heart, immune, skin and joint health, even when not suffering from health problems.<sup>13</sup> Exercise is a key part of this, influencing physical and mental well-being. But consumers are also increasingly aware that overall health and well-being is founded on good gut health. Awareness of the gut-brain axis is rapidly gaining traction among consumers. At the same time,





research is shedding light on the role of the gut in sports performance. Emerging studies now suggest a correlation between the gut microbiota, muscle function, athletic performance and body composition.<sup>14</sup> This is known as the gut-muscle axis.

### The role of a healthy gut in sports recovery

Exercise is one of the biggest environmental factors that can have a positive impact on gut microbiota,<sup>15</sup> however, over-exercising can result in imbalances in the gut.<sup>16</sup> This is especially true with people who are not used to strenuous exercise.

It is thought that athletes are significantly affected by poor gut health – one study suggests that up to 50% of athletes suffer from suffering from gastro-intestinal problems.<sup>17</sup> While another suggests that 86% of athletes suffer with gastro-intestinal problems associated with training and competition.<sup>18</sup> These gut problems can have adverse effects on sports performance and muscle recovery, with an unbalanced gut potentially even influencing the process of nutrient absorption and extraction, as well as having negative effects on skeletal muscle mass.<sup>19,20,21,22</sup> Therefore, targeting the gut-muscle axis could have significant appeal in applications across the performance and active nutrition categories.

Research regarding the gut-muscle axis has suggested that muscle recovery and athletic performance can be positively impacted by gut microbiota influencers such as prebiotics.<sup>23</sup> Prebiotics such as galacto-oligosaccharides (GOS) have been shown to stimulate growth of Bifidobacteria in the gut microbiome,<sup>24</sup> and regular consumption of this specific variety of prebiotic has been shown to improve gut comfort,<sup>25</sup> which could be particularly beneficial for athletes who suffer from digestive issues.

### Beyond protein: targeting the gut-muscle axis

While the general population is familiar with the digestive health benefits of probiotics, prebiotics are one emerging ingredient that is quickly gaining traction in healthy product formulations for their digestive health benefits. Prebiotics are a form of dietary fibre that feed the good bacteria in the gut, supporting the production of nutrients, like short-chain fatty acids, that can help support a healthier digestive system. Prebiotics such as galacto-oligosaccharides (GOS) have been shown to stimulate the growth of Bifidobacteria within the gut microbiota.<sup>24</sup>

Regular consumption of GOS has been shown to contribute to normal digestive function and improving gut comfort.<sup>26</sup> Which could have significant impact in supporting the recovery and performance of active consumers and athletes suffering from digestive health issues.

What's more, emerging research also suggests that GOS can positively impact mental well-being by reducing stress,<sup>27,28</sup> and anxiety,<sup>24,29</sup> via the gut-brain axis. Suggesting further potential benefits in sports nutrition applications that look beyond athletic performance, for example, supporting the mental well-being of professional athletes when training for key events.

### Matchmaking for muscle recovery: formulating with prebiotics and protein

In addition, with the increased focus on holistic health, active consumers are looking for products with multiple functionalities. This is

leading to a boom in products formulated to target more than one health benefit at a time – gut health and muscle strength, for example. FrieslandCampina Ingredients recently developed a prebiotic protein water which does both these things, formulated with Biotis™ GOS and Nutri Whey™ Isolate Clear – ideal for active consumers who also proactively want to support their gut health.

In addition to this, there is growing interest in combining gut health ingredients like prebiotics with enhanced protein ingredients, such as fermented proteins. Fermented whey, for example, has been suggested to generate health benefiting bioactive peptides resulting from the partial breakdown of the protein during the fermenting process – which may support overall health, as well as improve uptake efficiency and nutrient absorption.<sup>30,31</sup> Efficient protein uptake and nutrient absorption is key for muscle recovery after exercise making it an appealing solution for both professional athletes and broader consumer groups looking to take their nutrition to the next level.

### Two become one: how brands can capitalise on blending categories

Against the backdrop of COVID-19, there has been an acceleration in health and wellness trends. Consumers have increasingly turned to exercise to stay healthy, recognising that keeping active can support a whole host of health areas from immunity and cardiovascular health to mental health and improved sleep. At the same time, recovery has become a key issue for active consumers as they become more attuned to the needs of their body, thanks to this health-first mindset.

In 2022, the lines between professional sports nutrition and active nutrition continue to blur, as everyday consumers seek out healthy, fortified products to support their fitness and health goals and professional athletes look to improve stress levels and sleep quality. As such, there is a huge opportunity for both categories to learn from each other to develop new products that help more people reach their fitness goals as well as building resilience of the mind and body. And there is plenty of ground left to cover. Brands investigating NPD for both professional athlete and active consumer categories can make the most of dairy and plant proteins as well as a broad range of complementary protein plus ingredients that support well-being through a healthy gut. By pushing the boundaries of nutrition for muscle recovery – everybody wins!

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Stationsplein 4  
3818 LE Amersfoort  
The Netherlands  
Tel: +31 (0)33 713 33 33  
<https://www.frieslandcampinaingredients.com>

# Not your average joint venture: Kraft Heinz and TheNotCompany create partnership to accelerate AI-driven plant-based innovation globally

**T**he Kraft Heinz Company and leading food tech start-up TheNotCompany, Inc. have announced a joint venture designed to reimagine global food production and advance toward a more sustainable future.

The joint venture, which will operate under the control of Kraft Heinz as The Kraft Heinz Not Company LLC, will leverage the inherent strengths of both companies. NotCo brings its patented, first-of-its-kind technology and proven artificial intelligence (AI) solutions, while Kraft Heinz offers its iconic brand portfolio and scale, to develop superior plant-based versions of co-branded products at a level of speed, taste, quality, and scale yet to be seen in the industry.

Both Kraft Heinz and NotCo share a desire to change the world for the better and believe that working together they can and will accelerate adoption of plant-based foods. While interest for plant-based foods is surging, barriers in taste, variety, and availability remain. Utilizing technology and an agile approach to innovation, NotCo has made significant progress in addressing these consumer needs, developing plant-based replacements for animal products with simpler ingredients that don't sacrifice taste, functionality, or consumption experience.

"The joint venture with TheNotCompany is a critical step in the transformation of our product portfolio and a tremendous addition to our brand design-to-value capabilities," said Miguel Patricio, CEO of Kraft Heinz. "It helps deliver on our vision to offer more clean, green, and delicious products for consumers. We believe the technology that NotCo brings is revolutionizing the creation of delicious plant-based foods with simpler ingredients."

"When we started NotCo, it was our goal to make our technology a catalyst for a more sustainable food system not only for us, but for other brands and manufacturers who share the same ambition," said Matias Muchnick, co-founder and CEO of NotCo. "Today is an exciting milestone for the plant-based industry and shows the power of technology's role in driving mainstream adoption. We're thrilled to partner with Kraft Heinz and their iconic brands and work hand-in-hand on building a more sustainable food system."

The Kraft Heinz Not Company will be headquartered in Chicago with research and development facilities in San Francisco and will focus on plant-based innovation across numerous Kraft Heinz product categories. Lucho Lopez-May, who is currently CEO, North America of NotCo, will become CEO of The Kraft Heinz Not Company. Mr. Lopez-May was previously CEO of Garland Food, and prior to that, President of Strategic Growth Channels at Danone North America.

In partnering with NotCo, Kraft Heinz aims to leverage its manufacturing and commercial capabilities, with the scale of some of the most loved global food brands, to reshape the food landscape and set a new standard for plant-based innovation.



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Miguel Patricio, CEO at Kraft Heinz (left) and Matias Muchnick, Co-Founder and CEO at NotCo (right)

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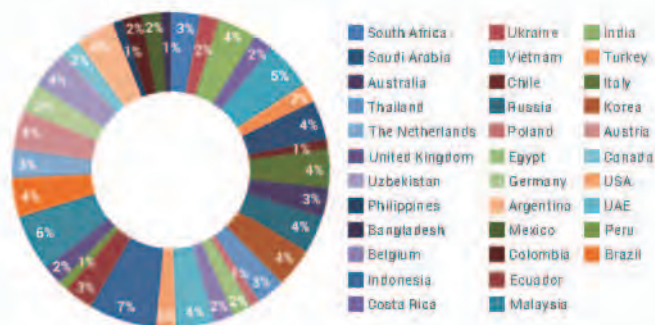
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# Finnish startup Onego Bio Ltd raises Eur 10 million in seed funding to commercialize a breakthrough technology to produce egg white without chickens



The Finnish biotech startup Onego Bio Ltd has announced the successful closure of Eur 10 million seed round with participation from venture capital investors Agronomics Limited and Maki VC. Onego Bio's technology, developed and researched at VTT, enables production of bioalbumen with cellular agriculture means.

Bioalbumen is an animal-free egg protein, produced with a specific precision fermentation process that creates identical egg white protein without the need for animals.

The company believes that the demand for animal-free egg white protein will be growing globally, because intensive animal farming causes many environmental hazards, such as excessive use of land, greenhouse gas emissions, water scarcity, and the risk of global pandemics.

"We want to thank VTT and our investors for supporting a technology that is part of a bigger wave of changing people's perspective on alternative ways of producing food. The time is right to spin out this technology and start manufacturing our product, as consumers are more open to try products that are not animal-derived," says Maija Itkonen, CEO of Onego Bio Ltd.

Global egg production has almost doubled its volumes during the past 20 years and is forecasted to reach 138 million tonnes by 2030. At VTT, the team has developed a safe, sustainable and cost-effective cellular agriculture method for



Egg white produced without chickens

producing ovalbumin, the most abundant egg white protein. This biotech process, based on harnessing the microflora *Trichoderma reesei* for protein production, with the help of water, sugar and certain minerals, can provide significant environmental improvements to the egg white production. The team believes the chosen technology is superior because of its efficiency and productivity.

Cellular agriculture uses microorganisms and bioreactors instead of traditional animal farming. The method can be compared to beer production, in which microorganism is fed sugar to produce alcohol.

"VTT's laboratories and technical teams have cutting-edge know-how to develop truly new innovations. We will continue working together with them on the scientific aspects, and together with our investors we simultaneously focus on commercializing the technology," Itkonen continues.

Onego Bio Ltd will focus on building its pilot production in Finland during the coming years and acquiring the necessary commercial approvals for its first product, animal-free bioalbumen powder. The product will be first marketed in the United States, where the regulatory landscape allows for faster market entry.

Onego Bio Ltd is planning to market the product as a food ingredient for the bakery and confectionary industry, as well as a protein supplement for fitness products, and later enter the consumer market with its own branded products for baking and cooking.

"We have a big mission: We want to rethink eggs and give people access to a delicious healthy

animal-free alternative. Egg white is a smart starting point for the next level proteins. Because of its unique functional properties like gelling, foaming, binding and emulsifying, the egg white is extremely difficult to replace with alternative ingredients. In many applications, egg is the last frontier before entirely animal-free end products can be manufactured", says Itkonen.

"We are highly impressed with the Onego team's capabilities, background, and their vision for the company. With their technology, they have the potential to produce bioalbumen at an industrial scale and at a price point that is competitive with conventional egg production which has major implications

for the environment and animal welfare. Egg white production has a huge total addressable market and there is a necessity to utilize precision fermentation tools to meet the demand in a sustainable manner. We look forward to seeing what they can accomplish", says Jim Mellon, Executive Director of Agronomics.

It is forecasted that food production based on cellular agriculture will lead to a disruptive change in the entire food system. The technology would not just have a positive impact on environmental issues but also reduce exposure to antibiotics, and contribute to global health by preventing infectious diseases, such as bird flu, from transferring to humans.

"VTT has world-class knowhow in the field of cellular agriculture and microbial based protein production," says Tua Huomo, Executive Vice President, VTT. "In Finland there are great companies working on other areas of cellular agriculture, and now it's time to set the bar high and have a position also for proteins that are traditionally sourced from animals. This action will be hopefully remembered as one of the great milestones towards the more sustainable and healthy food system," Huomo concludes.

The project has been part of VTT LaunchPad, a science-based spin-off incubator, where VTT researchers and technology are brought together with the best business minds and investors out there to renew industries. VTT LaunchPad supports incubator teams to develop VTT owned IPR into fundable spin-off companies.

[www.vtt.com](http://www.vtt.com)



Christopher Landowski, Maija Itkonen and Jussi Joensuu from Onego Bio Ltd

## IFFA – the sector highlight for innovations, trends and encounters



The sector is set to meet at IFFA in Frankfurt am Main from 14 to 19 May. Around 900 exhibitors from more than 40 countries will be showing their latest products and solutions for processing, packaging and selling meat and alternative sources of protein. The companies are looking forward to personal encounters with their customers and to presenting the complete spectrum of their innovations from the last three years.

The expectations of the global meat and protein industry on their leading international trade fair – IFFA, Technology for Meat and Alternative Proteins – are high. From 14 to 19 May, the who's who of the sector will meet in Frankfurt am Main to present the latest innovations, to gather information and to network. Around 900 exhibitors from over 40 countries have registered to show their developments from the last three years including technology for processing and packaging meat and alternative protein products, ingredients and additives for modern foodstuffs, as well as new sales products. Everything and everyone of note will be spread over some 116,000 square metres of exhibition space (gross) in Halls 8, 9, 11 and 12 of Frankfurt Fair and Exhibition Centre. The traditionally high level of internationality of IFFA is also guaranteed this year with over 60% of registered companies coming from outside Germany, especially Italy, Spain, the Netherlands, Austria, Switzerland and Poland.

### The meat and protein industry will meet at IFFA 2022 in Frankfurt

Trade visitors are also looking forward to this year's IFFA in Frankfurt. They come from the food industry, the butchers' trade, the retail trade, the hospitality industry and suppliers, and hold the fair in high regard as the best source of information for the latest innovations and trends. Wolfgang Marzin, President and Chief Executive Officer of Messe Frankfurt, says, "We are ready to welcome important players from the German and international meat and protein industry to IFFA 2022. Around 900 companies, including the market leaders, will be there and show the latest innovations on their impressive exhibition stands. The breadth and depth of the products and services to be seen is unrivalled and, this year, will once again generate a multitude of innovative impulses. With the new theme of alternative sources of protein, IFFA, the world's leading trade fair for the industry, not only sets the trend but also reflects current consumer behaviour."

### The sector banking on personal encounters

Preliminary data indicates that the production of food and packaging machinery in Germany increased in 2021 and sector sales almost reached

the pre-crisis level of 2019. This positive background will also impact on the coming IFFA with the exhibitors looking forward to personal encounters with their national and international customers. Richard Clemens, Managing Director of the VDMA Food Processing and Packaging Machinery Association, says, "Leading international trade fairs in Germany represent a home match and are very important for the mechanical-engineering sector. As we have seen clearly over the last two years, nothing can replace trade fairs as platforms for innovations, the exchange of ideas and information and progress. Our member companies are looking forward to this opportunity to present their solutions in the fields of automation, digitalisation and sustainability, as well as, naturally, to personal encounters, conversations and discussions with experts from all over the world". The butchers' trade, one of the most important groups of visitors to IFFA is also looking forward to the fair with great anticipation. A poll of members of the German Butchers' Association (DFV) revealed that slightly more than 50% of artisanal butchers are planning above-average investments for 2022, particularly in production, sales and energy efficiency. DFV president Herbert Dohrmann says, "All in all, our polls indicate that the sector has come through the crisis very well and, as the figures clearly show, butchers are currently distinguished by a high propensity to invest. We are a personnel-intensive business and are hoping that IFFA will generate a host of important impulses, especially in the fields of automation and digitalisation."

For the first time in its history of over 70 years, IFFA has expanded its product nomenclature and now includes technologies and solutions for vegetable-based meat substitutes and alternative proteins. At least 200 IFFA exhibitors offer products for the production of meat alternatives. They are spread across the whole fair and can be found via the IFFA Contactor, the fair's exhibitor and product search engine. Additionally, the complementary programme of events will provide further information about this future-oriented subject. New IFFA partners, such as the German Association for Alternative Sources of Protein (BALPro), the Good Food Institute Europe and the ProVeg nutritional organisation, will also be contributing their expertise and their networks.

### The programme of events: inspiration, product information, expert knowledge and insights

The IFFA programme of events will give participants the opportunity to see and experience innovations, to take part in lectures and discussions and to gain inspiration for new products and solutions. Throughout the fair, the IFFA Forum will be the setting for expert talks and product presentations. Every day, the spotlight will be on a

different top theme, i.e., automation, digitalisation, food safety, sustainability, food trends and individualisation in artisanal businesses. New and also live daily, vegan and meat-based bratwurst will be produced on the genuine production line of the IFFA Factory while experts explain the production methods and provide information about recipes, ingredients and processes. Also new are the guided tours to selected exhibitors. Each of these Discovery Tours will focus on a specific theme. The choice ranges from packaging trends and process innovations to meat substitutes (presented by the Good Food Institute Europe), ingredients and 'Trends in the Butchers' Trade' (presented by the DFV).

Great product inspiration will once again be offered by the international product competitions and competitions for young members of the German Butchers' Association. The National Butchers' Trade Team will also be represented and there will be exciting insights to be gleaned from the 'Artisanal Art' special show.

The VDMA is joining forces with the Fraunhofer Institute for Process Engineering and Packaging to present future-oriented themes and solutions on its exhibition stand. Visitors will be able to see a virtual cleaning assistant for safe and efficient manual cleaning with the aid of augmented reality technology. The second main theme revolves around alternative proteins and focuses on processes for the fully automatic production of insect protein and plant-based protein. The complete IFFA event programme can be found online at [www.iffa.com/events](http://www.iffa.com/events).

### New: IFFA Digital Extension

For the first time, IFFA will be held with a digital extension and thus open up new dimensions for visitors to make their trade-fair experience even more individual or to participate when it is impossible to travel to Frankfurt. The new digital platform includes a variety of exciting options before, during and after the fair. For example, visitors can make contact with potential business partners and arrange mutually convenient appointments in advance via the matchmaking system. Detailed product information and corporate profiles of the exhibitors in word, photos and video offer a good impression of the product ranges while chat functions and video calls mean making direct contact is easy. Further information about the IFFA Digital Extension can be found at [www.iffa.com/digital-extension](http://www.iffa.com/digital-extension).

Messe Frankfurt accompanies the dynamic process of growth of the global food industry with six trade fairs on four continents. Further information about the events in the 'Food Technologies' portfolio can be found at

[www.food-technologies.messefrankfurt.com](http://www.food-technologies.messefrankfurt.com)



## **Busch Vacuum Solutions** **Hall: 11.0 Stand: B21**

### **Energy-efficient and sustainable vacuum solutions for the meat industry**

Busch Vacuum Solutions will be showcasing its latest vacuum solutions for the processing and packaging of meat and alternative proteins at IFFA in Frankfurt am Main. For the first time, the meeting place for the global meat industry is once again focusing on the face-to-face encounter of the industry, and Busch will welcome visitors to its booth with energy-efficient, sustainable and innovative vacuum solutions. Vacuum systems from Busch enable energy savings of up to 70%.

In addition to modular solutions, Busch primarily offers individual vacuum supplies. These are optimally adapted to the customer's needs. In combination with customized service packages, an efficient and safe vacuum supply can thus be ensured. Rising energy prices in particular are placing an ever greater financial burden on processing companies. As a result, the requirements placed on vacuum technology are also changing in the long term.

The use of energy-efficient vacuum technology in food processing and packaging can be associated with high potential savings and is even subsidized by the German Federal Office of Economics and Export Control (BAFA). Centralizing the vacuum supply enables additional savings potential in the food industry, as the high energy costs for cooling production can be reduced by reducing waste heat, for example. At IFFA, Busch will be demonstrating its efficient solutions, which can achieve energy savings of up to 70%. There will be a presentation on this topic by Busch's vacuum experts at the IFFA Forum 2022 on May 18, 2022 at 4:00 pm.

Technology is constantly evolving and so Busch is also always working on the future of vacuum. The COBRA PLUS will be on display at IFFA, an intelligent low-maintenance screw vacuum pump that is ready for Industry 4.0 with remote control, status monitoring and communication protocols. The OTTO digital service innovation will be presented for the first time at IFFA. These intelligent IoT solutions combine condition monitoring of vacuum pumps with attractive service packages, ensuring that production downtimes can be sustainably reduced.

Dry vacuum technologies stand out as being particularly low-maintenance. The dry and contact-free operating principle enables virtually maintenance-free operation. Above all, the use of these vacuum generators enables low life cycle costs, as the expenditure for regular maintenance is very low. With MINK claw vacuum pumps and COBRA screw vacuum pumps, Busch has two technologies in its portfolio that are ideally suited for use in the food industry.

The vacuum experts from Busch are looking forward to a personal exchange at IFFA in hall 11.0 at booth B21.



## **CSB-System** **Hall: 11.1 Stand: C30**

### **CSB-System to demonstrate ERP optimisation opportunities in challenging times**

At this year's IFFA, industry ERP specialist CSB-System will present a multitude of technology solutions to help meat companies optimise their business processes and meet the growing challenges faced by the industry, including global competition, complex supply chains,



rising prices and the need for detailed traceability.

CSB's Meat Management Matrix will demonstrate the opportunities of introducing an ERP system that is tailor-made for the meat industry, making it easy to reconcile the specific requirements of a business with the multifaceted capabilities of a comprehensive solution. Various system configurations and special features are available for the different areas in the meat industry, with solutions tailored to individual requirements using the company's BASIC ERP for small businesses, FACTORY ERP for single production facilities, or comprehensive INDUSTRY ERP for an entire group.

CSB says the introduction of an ERP system with specific functionality for the meat industry is vitally important to allow businesses to keep a firm grip on their entire value chain. Alongside competitive markets and more complex supply chains, retailers are placing further requirements on supply capability and quality. Increasing material prices are adding to pressures on profit margins. Meat businesses also need to open up new sales channels while ensuring compliance with stringent legal requirements.

An effective ERP system will help companies maximise the potential of the Smart Meat Factory, but effective optimisation often has to satisfy divergent requirements and varying starting conditions.

Typical entry points to the Smart Meat Factory include detailed data to meet both legal regulations and consumer demand for traceability back to the producers. Accurate decision making is also based on data and the ability to create fast evaluations. Functions such as smart production scheduling, reporting on defined KPIs, information from finance and controlling, or the optimisation of inventory management are therefore important requirements.

To meet the challenges of rising costs in the supply chain and the volatile export market necessitates a fast response, accurate planning, the efficient use of resources, and reducing losses in supply chains. Businesses also need to be able to adapt their product range to consumer demands, such as regional and natural products, while enhancing vertical integration in the areas of convenience foods and snack products.

Automating production is also key with the primary focus being the integration of ERP, MES, and CIM. Predictive maintenance and robotics will further enhance processes. The smart design of operations will open up new optimisation opportunities.

In addition, equipment that enables M2M communication, OEE reporting, and the integration of online stores is the prerequisite for an integrated information and materials flow. By harmonising the data all the way from the slaughter process to consumers, companies can make their operations more resilient and more competitive to initiate further growth.

While meeting such varying requirements will not be possible without investments, CSB says these do pay off if they are tailored to the needs of a meat processing business. The company's experts will be on hand on Stand C30 in Hall 11.1 to discuss each visitor's specific

requirements.

## **Cleansmke Coalition** **Hall: ?? Stand:**

### **Sustainability is a catalyst for innovation in the meat industry**

The question of how the meat industry can become more sustainable and climate-friendly is currently the strongest catalyst for change and innovation. At least, that's how the organizers of this year's IFFA meat trade fair see it for the energy-intensive industry. Among other things, this also applies to heating water and its consumption for cleaning plant premises.

The CleanSmoke smoking process is one of the innovations

that can significantly save both energy and water compared to conventional smoking. Because of its special environmental compatibility, this modern process has already been awarded the title of "Best Available Technique" by the European Union.

CleanSmoke is a stable smoke freshly produced with compressed air from primary smoke condensate - free of harmful substances such as tar and ash and the contamination with polycyclic aromatic hydrocarbons (PAH) is largely eliminated.

Also, the Consumers want more sustainable food and therefore reward innovative and climate-friendly products with greater willingness to buy. But currently, a lack of labeling makes it difficult to tell which products are truly environmentally friendly. "Innovations for more sustainability deserve the support of customers and should be recognizable with a label like the CleanSmoke seal," says Uwe Vogel, chairman of the CleanSmoke Coalition, a joint initiative of primary smoke product manufacturers, food producers and retailers. The effect of such labels has also been proven by a study conducted by the University of Cambridge. The CO<sub>2</sub> labeling on meals in the university cafeteria and the comparability it provides made students choose meals with a low carbon footprint significantly more often. As a result, the average carbon footprint of all portions served was reduced by five percent.

The eco-balance speaks for CleanSmoke

According to a study by the German Institute of Food Technologies (DIL), CleanSmoke technology, based on the German market for smoked products, can save around 50% energy and, at the current energy mix, around 30% greenhouse gas emissions. Currently, CleanSmoke is only used in about one-tenth of smoked foods, which allows a reduction of 72% in energy consumption and eight percent in climate gases. Overall, the potential savings in Germany alone amount to around 600 million kilowatt hours (kWh) of energy.

In addition, CleanSmoke consumes less than one-seventh of the water used in conventional smoking. If all smokehouses in Germany, for example, were to work with CleanSmoke, consumption would be around 66,000 cubic meters (m<sup>3</sup>) of water for cleaning the smoking facilities, according to the DIL, a good 15% of which is used for raw material production. Indirect consumption for watering the trees for the smoked wood, on the other hand, is relatively low at 6,800 m<sup>3</sup>. In conventional smoking, both direct consumption for cleaning and indirect consumption for plant irrigation are significantly greater, at 545,000 and just under 357,000 m<sup>3</sup>, respectively. According to DIL, 479,000 m<sup>3</sup> of water could therefore be saved in the cleaning of the smoking plants alone. This corresponds to the annual consumption of large cities such as Kiel or Gelsenkirchen. In addition, another 350,000 m<sup>3</sup> of water could be saved within the supply chain.

Products smoked with CleanSmoke are thus made for the new sustainable demands of the meat industry. "Smokehouses, as well as retailers and consumers, can easily reduce water and energy consumption with CleanSmoke," says Vogel. "In this way, we protect resources and make our contribution to climate protection."

For further information on the topic, the association or membership, please contact the CleanSmoke Coalition, based in Brussels, at [info@clean-smoke-coalition.eu](mailto:info@clean-smoke-coalition.eu) or by phone at +32 (0) 2-739 62 62.

## **Fraunhofer Institute for Process Engineering and Packaging IVV** **Hall: 11.1 Stand: B70**

### **Quality and process reliability as well as alternative proteins: Fraunhofer IVV at IFFA 2022**

The Fraunhofer Institute for Process Engineering and Packaging IVV will present solutions to the challenges currently faced by the food industry at the IFFA between May 14 and May 19, 2022 (Hall 11.1, Stand B70). The intelligent, sensor-based CleanAssist cleaning lance has been developed for manual cleaning processes, making consistent reproducibility and reliable quality possible for the first time. In the field of food safety, Co-Control, a customer-specific adaptable sensor for detecting organic contamination in particularly hygiene-critical environments, is being presented. With regard to meat alternatives, Fraunhofer IVV will show how plant-based



protein sources can be used to make custom food ingredients and marketable products. The holistic concepts respond to the diverse requirements that Industrie 4.0, climate protection and skill shortage pose to businesses: from resource use to individual solutions for secure, automated processes, including hygienic design consulting and the development of sustainable packaging made from recyclable materials.

Virtual cleaning assistant "CleanAssist" for consistent quality assurance and documentation

In order to guarantee a secure and reproducible cleaning process for manual cleaning for the first time, Fraunhofer IVV researchers have developed the first intelligent cleaning lance as part of a joint project funded by the Central Innovation Program for SMEs (ZIM).

Sensors integrated within the lance enable cleaning parameters to be logged and the lance position and pose to be tracked. The data is subsequently transferred to an AR device (glasses, tablets or smartphones), projecting a real-time "digital twin" onto the physical cleaning environment. The cleaning lance user can see which areas have been successfully cleaned and which areas still need cleaning. CleanAssist also provides support in selecting the appropriate cleaning process. In such a way, it can be guaranteed on-site that all surfaces have been cleaned with the required amount of effort.

As well as reliable and consistent quality assurance and documentation of cleaning, CleanAssist also allows for guided optimization of cleaning procedures while helping to avoid cleaning errors that reduce the quality of a product. For this reason, staff are not only supported with cleaning, but can also receive targeted training by means of special practice exercises.

"Co-Control" - mobile quality assurance through imaging detection of organic contaminants

At Fraunhofer IVV, the Co-Control optical detection system has been developed on the basis of the extensive expertise in sensor technologies and the application-oriented design of camera-based measuring devices. The system is based on fluorescence analysis using UV radiation and allows for spatially-resolved detection of organic contaminants on two- and three-dimensional components. It can be used as a customer-specific adaptable inline system as well as a mobile photo chamber. Contaminants can therefore be quantified directly during production or as an online or offline solution, meaning that the causes for quality issues can be remedied.

High-grade proteins for meat alternatives

The continuing trend toward giving up meat has led to a steep increase in the demand for high-grade protein alternatives. Using their longstanding experience of producing protein ingredients and characterizing their technological properties, Fraunhofer IVV is working on steadily improving the sensory qualities of meat alternatives. This is because few consumers are ready to give up the dietary patterns they are used to.

Through their research into worthwhile plant- and insect-based protein sources, Fraunhofer IVV has been able to satisfy this high demand for meat alternatives. All of the process steps - from raw materials to developing new meat-like textures and hygienically producing marketable meat alternatives - can be reproduced on a laboratory and pilot scale. Especially in the production cultivation and processing of insect proteins, innovative automation and sensor solutions, coupled with AI-based process controls, are at the center of the research work. New product ideas are directly developed at their own food pilot plant facilities before being analytically examined. Custom food ingredients with a focus on holistic use of raw materials and individual solutions for automated processes provide answers to the challenges faced by the meat processing food industry and retail of tomorrow - especially for small- and mid-sized enterprises.

**GEA**

**Hall: 8.0**

**Stand: G20**

## GEA launches new freezing system ProEdge Drive at IFFA

From May 14 to 19, GEA will launch the new spiral freezer GEA ProEdge Drive at IFFA (Hall 8, booth G20), the leading international trade fair for the meat industry. The GEA ProEdge Drive features a drum-free design using fewer components for a more hygienic and sustainable solution. Its innovative spiral drive with robust patented sprockets ensures that the belt runs smoothly and extends the service life. This freezer fits perfectly for the processing of protein or products in the area new food as it particularly meets the desired requirements for high product yield.

Drum-free design for more flexibility and sustainability

Standard ProEdge Drive Series models are suitable for 400mm-, 600mm- and 750mm-wide lines and offer freezing capacities of 460 to 3,600 kg/h of fully cooked products. This new alternative to traditional freezing systems with a drum-free design also offers more flexibility in adding tiers, increasing freezing capacity up to 12% for the same footprint. The reduction of the number of structural parts combined with external drives makes it easier to clean and maintain, resulting in enhanced hygiene and a lower total cost of ownership. Another important aspect is that the drum-free design also makes production more sustainable, as the consumption of resources such as steel and other components is greatly reduced.

Patented sprocket drive offers top operating performance

The GEA ProEdge Drive is also an intelligent freezer system that provides perfect synchronization of the drives in all operating environments. The innovative and patented sprocket construction is a top performer, even under the most demanding cooling, chilling, and freezing conditions. The positive-edge drive limits belt tension and allows less product movement on the belt. This helps to preserve the product shape and ensures safe product handling with smooth, continuous product flow. Multiple belt width and layout options offer a seamless integration into the customer's processing line.

The GEA ProEdge Drive integrates GEA's latest freezer innovations: continuous monitoring and control of product frozenness with Callifreeze®, optimizing and control of the air temperature in the freezers with the dynamic IVS (Intelligent Valve System), and up to 14 days of operation without stopping to defrost with Sequential Defrost (SD) combined with Static Pressure Control System (SPCS) automated air balance.



**GoodMills Innovation**

**Hall: 12.1**

**Stand: C24**

## Deliciously simple: meat alternatives with VITATEX®

The easy way to plant-based meat alternatives: At IFFA, GoodMills Innovation presents its new range of VITATEX® plant textures which can be used to authentically replicate various meat concepts. And when it comes to processing, the same machines can be used to produce both meat and meat-alternative products.

Visitors to the GoodMills Innovation booth at IFFA will at first feel as if they are in a familiar "meat" environment. However, the



company is showcasing its offerings with a plant-based butcher store: Peas, soy and wheat, the raw materials for VITATEX® texturate, hang from the butcher's hooks. They can be used to produce a wide range of vegan and vegetarian applications that faithfully replicate conventional products based on pork, beef and poultry.

Easy processing

There are great parallels in the processing of VITATEX® texturates, too, as manufacturers can use the same machines for the production of vegetable mince, patties, nuggets or schnitzel as for meat processing, with no major investments necessary. Texturates pre-swell and are then further processed in a cutter or grinder in the same way as ground meat.

This means that vegetable product lines can also be produced with VITATEX® using existing meat processing equipment - no major investments are required.

Texture is key

From a sensory point of view, VITATEX® products impress with their meaty, fibrous texture and, from a nutritional point of view, with their high protein content. Jutta Schock, Head of Marketing at GoodMills Innovation: "Texture is the key to an authentic meat alternative and a decisive factor in whether a product is a hit or miss with the end consumer - if the texture is not right, the decision is made: The product will not be perceived as authentic and will certainly not end up in the shopping cart next time. So no compromises should be made here." Thanks to their good water-binding properties, the new texturates can also be used to create individual consistencies.

On show at Vitafoods Europe in Geneva (Switzerland) from 10 to 12 May 2022 (Palexpo, Stand J236).

**Hydrosol & Planteneers**

**Hall: 12.1**

**Stand: B81**

## Complete solutions for meat, sausage and plant-based alternatives

The meat industry is in a transition. Many companies face the question: Do we continue to focus entirely on meat products, or do we expand our range with plant-based alternatives? The answer isn't easy, since worldwide meat consumption will continue to grow. On the other hand, in the western industrialised countries plant-based alternatives are increasingly in demand. Hydrosol and Planteneers, sister companies within the Stern-Wywiol Gruppe, support the meat industry with exciting product concepts that open up new potential in many different markets. Whether all-meat, less meat or all-plant, these concepts let manufacturers react to current challenges, trends and consumer wishes.

Hydrosol: Meat meets vegetables

Reducing the meat content in burger patties, nuggets or sausages, and replacing it with vegetables, legumes and fibre, results in products that are a perfect match with the ongoing consumer demand for healthy indulgence. The new PLUSmulson series stabilising system compensates for the function of the missing meat proteins. It's suitable for making many different products, and is simple to use and easy to integrate into existing production processes. "Free from" is another major trend. In the meat category, that primarily means less salt and less phosphate. Here again, Hydrosol has developed new concepts, for example for making phosphate-free sausages. Likewise new are clean label solutions for meat products that use natural ingredients for effective freshness preservation, appealing colour and phosphate-free brine substitutes.

At the companies' joint booth Hydrosol is presenting economical solutions for a variety of applications, like meat, ham, convenience products and sausage products. Economical produc-



tion calls for solutions to counter rising raw material prices; with the drastic price increases for some ingredients, replacing raw materials is currently a hot topic, and one the Hydrosol R&D team is continuously developing new solutions for. The objective of raw material substitution is to maintain the consistent quality of the final product within its existing price category.

## Planteneers: Discovering new possibilities

At the IFFA Planteneers is showing new possibilities that meat and convenience manufacturers have in addition to their core business. With the company's systems, vendors can extend their product lines with a broad spectrum of plant-based alternatives. Planteneers assists its customers throughout the entire process, from the initial idea to upscaling for large scale production. The resulting plant-based products can be made on existing machines, reducing the need to invest in new equipment.

Among the new product ideas that Planteneers is showing at the IFFA are alternatives to chicken strips, kebab and steaks. For creative variety and additional sales boosts there are cheese alternatives, for example as filling in vegan sausages, or in plant-based convenience products like cordon bleu. A plant-based burger sauce and vegan dressings for deli salads produced cold add to the possibilities. Plant-based fish and seafoods can also open up interesting new market opportunities for meat producers. From raw fish alternatives to filets and fish fingers to calamari, Planteneers has a broad selection.

The new hybrid concepts are a special highlight, and close the gap between flexitarians and meat eaters. For this category Planteneers has developed a stabilising system that already contains the plant protein component. This gives meat producers a simple way to significantly reduce the animal component of their final products, without adversely affecting the desired meat flavour. With Planteneers' compounds meat manufacturers can implement new ideas alongside their core business, and enter new market segments. Depending on the recipe, protein-rich pulses like lentils or chickpeas are used, along with vegetables with the right flavour.

With their new product concepts Hydrosol and Planteneers are addressing the issues of the future – international trends, food safety and sustainability. Planteneers is also a market pioneer in digitalisation, with its new Plantbaser. This takes new product devel-



opment to the next level. From idea to finished product in just two weeks is the idea, because by using this digital configurator meat producers can develop plant-based foods right on a computer to save time. Based on criteria they define, they can select the product they want to make from a comprehensive portfolio of solutions. Within two weeks Planteneers then sends a prototype of the configured product for testing. IFFA attendees can see exactly how it works in a live demo daily, and also learn what possibilities these sister companies offer, at the joint Planteneers and Hydrosol booth – Hall 12.1, Booth B 81.

## MANE

**Hall 12.1: Stand: D47**

### MANE to spotlight its position as the preferred supplier of flavour solutions for protein-based products during the IFFA tradeshow

The IFFA trade fair in Frankfurt, which will be held from May 14-19, will be an opportunity for visitors looking for flavoring solutions to come visit the MANE stand, showcasing its taste expertise as well as its extensive knowledge of different protein bases, whether animal, vegetable or hybrid.

The IFFA trade fair – the international trade fair for meat professionals worldwide – is now also aimed at players in the segment of plant-based alternatives to meat, as the latter continues to develop throughout Europe.

This is a unique opportunity to come (re)discover the solutions MANE offers to all manufacturers of products made from proteins, whether animal- or plant-based.

Taste being a key purchasing criterion both for consumers of meat and plant-based alternatives to meat, benefiting from MANE's indisputable expertise in tastes and flavours will be an excellent addition to the programme. The company, which ranks in the top five worldwide in flavour and fragrance manufacturers and celebrated its 150th anniversary in 2021, will present its latest innovations in the sector:

- The use of bouillons and TCP<sup>1</sup> to flavour cooked hams in order to respond to the growing needs for premiumisation and simplification of ingredients lists in the sector;
- Its spice extracts with freshly ground profiles obtained thanks to a new-generation plating process;
- Its latest collection of concentrated flavours, enabling optimisation and flexibility in the use of ingredients in a complete blend;
- Its bestselling marinades: dry as well as water- and oil-based.

The company has been innovatively formulating complete blends using plant proteins for more than 40 years. For example, it was the first to introduce soy protein to meat manufacturers in France and South Africa in the 1980s. MANE's expertise in the plant protein segment has been logically and gradually extended to new regions, new types of application and new plant sources.

MANE is an undisputed expert in plant proteins: in the ingredients themselves, the various related technologies, and the production processes, as well as in the interactions between the ingredients once these proteins are integrated into the same matrix – and of course, in the flavouring within a protein application.

And it is for all types of protein-based applications that the company wants to maintain its leadership. Whether the base is meat, plant-based or hybrid, various concepts will be presented on the MANE stand to demonstrate this expertise, such as:

- A plant-based burger, the company's preferred segment due to its history;
- Meat-free cold cuts to respond to the needs of consumers for more and more plant-based alternatives in their daily lives;
- Plant-based ready meals to meet flexitarian needs on the shelves, too.

This is a great opportunity to explore the wide range of flavouring solutions dedicated to this type of application: they will talk about masking solutions and solutions preventing the binding that takes place between proteins and aromas, as well as solutions such as natural flavourings, seasonings and marinades, stocks and bouillons, spice extracts, oleoresins and essential oils, and even concentrated vegetable juices.

Last but not least, the company will also use the event to spotlight the added values of its backward integration. With various acquisitions and partnerships in the last few years, mainly in the field of spices<sup>2</sup> and vegetables<sup>3</sup>, MANE solutions offer excellent progress in terms of traceability, sustainability and transparency.

MANE is eagerly awaiting the show and looking forward to seeing you May 14-19 in Frankfurt at its stand (Hall 12.1 Stand D37) to discuss your current or future projects.

<sup>1</sup> Traditional Culinary Preparations

<sup>2</sup> In 2014, MANE took a majority stake in KANCOR, one of India's most prominent extractors, manufacturers and suppliers of innovative natural food colours, ingredients, essential oils and spice extracts.

<sup>3</sup> In 2018, MANE reinforced its strategic partnership with AGRIVAL, a French producer specialising in vegetable processing and a key partner to locally source high quality vegetables.

## Müllers Mühle

**Hall: 12.0 Stand: C62**

### Müller's Mühle presents functional legume flours

The focus of Müller's Mühle Business Solution's trade fair presentation at this year's IFFA will be on the natural, allergen-free legume flours of the SMART® Pulses Pro range. Thanks to an innovative production process, the functional flour concentrates have a high protein content of up to 65%. This makes them an ideal raw material for meat alternative texturates that help optimise the nutritional profile of both plant-based concepts and hybrid applica-



tions with reduced meat content.

Thanks to their impressive protein content and structure-forming properties, SMART® Pulses Pro concentrates are ideal for further processing into high-quality texturates that serve as the basis for vegetable-based meat substitutes. In addition to vegetable protein, Müller's Mühle pulses provide fibre and minerals, B vitamins and trace elements – and are far superior to protein isolates in this respect.

The concentrates are produced in a new air separation plant: this technology separates the protein-rich fractions of the ground pulses, and the resulting high-protein flours are then further processed into textured vegetable proteins. For this purpose, the flours are converted into a fibrous structure by wet or dry extrusion in order to achieve a meat-like texture.

Depending on customer requirements and product concept, customised complete solutions including colouring and seasoning can be produced. Müller's Mühle supports food manufacturers with comprehensive application knowledge along the entire value chain.

Uwe Walter, Managing Director at Müller's Mühle, summarises: "Pulses are true all-rounders: resource-saving in cultivation, clean label, and rich in nutrients and protein. Meat alternatives with our SMART® Pulses Pro thus serve several major trends of our time, such as sustainability, naturalness and vegetable proteins – with excellent technological and sensory properties."

## MULTIVAC

**hall: 11.1**

**Stand: B11**

### Integrated processing and packaging solutions for the meat industry

MULTIVAC will be exhibiting its wide range of innovative processing and packaging solutions at this year's IFFA in Frankfurt. The focus will be on integrated lines, which enable meat products and alternative proteins to be processed and packaged cost-effectively and sustainably. Other highlights will be a presentation of the company's digital products, as well as its services in the areas of packaging consultancy and after-sales care.

Some of the lines to be shown at the trade fair will be networked, so that they can be used with the digital MULTIVAC Smart Services, as well as being completely controlled from one point via MULTIVAC Line Control."

As regards the food services sector, a compact thermoforming packaging machine in the entry-level range will be shown, which includes a filler and produces flexible vacuum packs for goulash or soups. The line is aimed at small to medium-sized companies, which are expanding and looking to increase their capacity, while at the same time focusing on reduced personnel costs.

At IFFA MULTIVAC will also be presenting a new conveyor belt labeller, which not only provides attractive full wrap labelling of packs, but now also enables weigh price marking to be performed in one process on the same machine. The labelling system features a very precise level of calibrated weight measurement, and it can be used as a stand-alone solution or in automated lines.

And last but not least, the specialist packaging company will be presenting its MULTIVAC Retrofit modernisation service, using a thermoforming packaging machine from a previous generation, which has been converted to the current technology and equipped with additional functions to meet the tasks and market demands of today. This means that the service life of an existing machine can be extended and its efficiency increased.

By visiting a tent in the outside grounds, customers will be able to convince themselves of the benefits of the new TVI portioning machine, which was designed primarily for medium-sized butcher's



shops, industrial-scale meat processors with smaller lines, and wholesale suppliers. In addition to this, a MULTIVAC slicer for processed meat products and alternative proteins will also be shown in live operation.

## Sealpac Hall: 11.0 Stand: D11

### "GO sustainable!" with SEALPAC at IFFA 2022: powerful, flexible and efficient traysealers and thermoformers for resource-saving packaging concepts

As one of the first leading trade fairs, IFFA 2022, the world's largest event for everything to do with meat and alternative proteins, will open its doors again from May 14th to 19th in Frankfurt am Main, Germany. SEALPAC made optimal use of the break caused by the Corona pandemic to further develop its traysealers and thermoformers, as well as modern packaging solutions. Under its motto "GO sustainable!", the company presents a whole range of innovative technologies and concepts for food packaging, which address the global contemporary requirements for more sustainability at retail.

Sustainable packaging, reliably processed

At the SEALPAC stand, trade fair visitors can experience the latest packaging solutions based on three traysealers and two thermoformers. These solutions increasingly rely on mono materials for improved recycling, are characterized by reduced film consumption, and process alternative materials such as paper into safe and attractive packaging.

Among other things, SEALPAC will present a complete line for the production of the resource-saving FlatMap® packaging concept for sliced products, based on a minimum amount of plastic and a high proportion of cardboard. The company will also demonstrate a thermoforming solution for high-speed packaging of burgers in recyclable film, as well as its brand-new, extremely modular PRO thermoformer. Another highlight at the SEALPAC stand will be the ability to take a journey along international packaging trends. At its "Supermarket of innovations", SEALPAC and its scouts have tracked down the latest trends around the world that will inspire trade fair guests with creative packaging ideas.

SEALPAC Amax traysealer

With the launch of the Amax-series, SEALPAC is setting new standards in terms of performance in tray-sealing. These traysealers, which can be operated intuitively and have a particularly low-wear and low-maintenance design, are driven by high-quality servomotors that ensure an extremely smooth packaging process. Depending on the application, the output of these machines can now be up to 50% higher. The integrated EnergyManager ensures minimum energy usage, whilst applying servo technology reduces the air consumption by up to 90%.

Each model within the SEALPAC Amax-series demonstrates maximum flexibility and is capable of producing a wide variety of packaging concepts, including particularly innovative solutions that stand for more resource conservation. They reliably process new types of film made from sustainable materials, as well as hybrid packaging concepts with a reduced plastic and high cardboard content, such as eTray® or FlatMap®. Last but not least, the Amax traysealers are perfectly suitable for handling ultra-light trays, the weight of which has been reduced by 25% compared to conventional trays.

The intelligent drive management of the SEALPAC Amax tray-sealer reduces the maintenance effort and thus ensures optimal

availability at all times. All in all, the new series stands for particular efficiency and economical energy consumption, whilst producing highly attractive primary packaging that will boost sales.

SEALPAC PRO thermoformer

Also within SEALPAC's portfolio of highly flexible thermoformers, the focus will be on improved sustainability and resource conservation. These innovative machines reliably process all standard materials, including the new, recyclable rigid and flexible films made from mono PP, as well as innovations such as paper-based film. Each thermoformer stands for first-class properties in packaging design, hermetic sealing and user-friendly opening behavior.

At IFFA 2022, the expert audience will be able to witness the launch of the new PRO thermoformer, which offers unmatched compactness, flexibility, modularity, and efficiency. This thermoformer can be easily configured to the customer's specific needs.

It starts with the basic PRO machine, which is suitable to run flexible and rigid film for vacuum packaging and sealing only applications. Depending on the customer's wishes, various modules can be added to run other packaging solutions, such as the MAP module for modified atmosphere packaging, the ThermoSkin® module for skin packaging and the ShrinkStyle® module for shrink packaging. Add-ons are also available for heavy products and wet & crumbly products. If the customer plans to connect the PRO thermoformer to its factory software, the Connectivity module can be selected.

The PRO thermoformer is perfectly suited for a wide range of products in varying outputs. If desired, customers are able to run all different packaging systems, be it vacuum, skin, shrink or modified atmosphere packaging, on the same base machine.

Switching from one concept to another is made easy with a variety of exchange systems, such as the standard side exchange for the bottom tool in the forming and sealing station. If required, even the film width can be changed in the future.

## Trigea Hall: 12.1 Stand: J24

### Trigea presents versatile wheat texturates

Trigea, a specialist in wheat-based ingredients, will be demonstrating all the possible applications of Trigovit® Tex texturates at IFFA in Frankfurt. Rehydrated, these authentically replicate the texture of meat and can serve as the basis for vegan pet food or hybrid products with reduced meat content. The products are available in different shapes and sizes, making them suitable as meat substitutes in both wet and semi-moist applications, and as bite-size particles in treats. This year, the meat trade fair has a special focus on alternative proteins and innovations in the pet food sector, and therefore offers an ideal backdrop for the topic.

Vegetable protein sources are not only in demand in the food sector, but also in pet food. Through the physical process of



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extrusion, Trigea's wheat proteins become functional ingredients that improve both the texture and nutritional value of various applications. After a short soaking time, the so-called chunks, for example, adopt a fibrous structure very similar to that of meat. Smaller, granular particles can also be added directly to feed applications. The products are very well accepted by dogs and cats because the texturates themselves are sensory neutral and take on the taste of other ingredients.

Trigea and Loryma are both part of the Crespel & Deiters Group, and the textures of the Trigovit® Tex range will be presented

at the Loryma stand. Interested parties can also make an appointment in advance via [trigea@crespeldeitersgroup.com](mailto:trigea@crespeldeitersgroup.com).

Maximilian Hegge, Sales Manager Trigea: "The buyers of plant-based foods are also reaching for products with less or no meat on the pet food shelf. In terms of animal acceptance and ease of handling for manufacturing companies, wheat texturates offer decisive advantages."

## Vaess Stand: K34

### From an alginate casing that sticks to a vegan frankfurter, to nitrite-free bacon and vegan cheese that tastes like the real deal: Vaess presents the latest food innovations @ IFFA 2022

The food innovation sector will get together at Frankfurt am Main's famous IFFA trade show on May 14, 2022. Among the attendees, we will find Vaess (former Vaessen-Schoemaker), also known as the dutch food engineers, presenting the next generation of food innovation. From the first truly tasty vegan cheese to a vegan frankfurter with alginate casing that can be cooked twice.

According to the dutch food engineers, the bigger the challenge, the better. Here's a sneak peek of their latest inventions.

Vaess is continuously looking for new ways to improve food products and optimize processes. Market-aware as they are, they continually engineer innovative concepts that fit the ever-changing food habits and consumer needs, such as home delivery trends and a craving for more sustainable products.

This year, Vaess presents a few ground-breaking innovations that respond directly to these new consumer needs. They will deliver solutions such as nitrite-free bacon (healthier), phosphate-free chicken that stays juicy even after a 30-minute home delivery trip, and tasty vegan cheese in all shapes and sizes. And what about meat that has no drip loss when sent to retail under defrost?

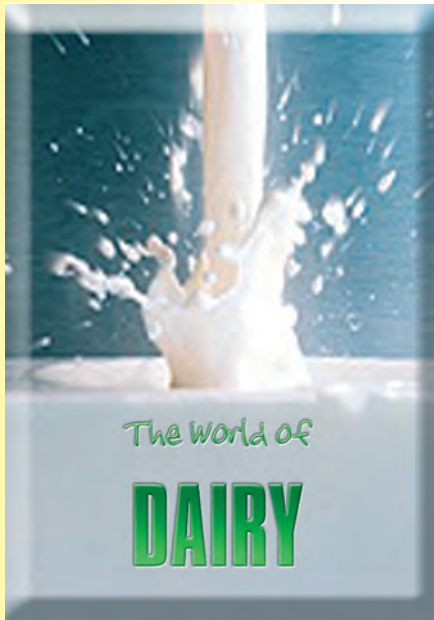
"At Vaess, we believe that meat and vegan can go hand in hand." Says Coen van Oorschot, Commercial Director at Vaess. "There's simply no other way: consumers want options. With 75 years of experience in the meat industry, Vaess knows better than anyone which properties a good vegan alternative needs. And besides that, we will be there to help the meat industry with their big challenges; especially the supply chain with home delivery and selling under defrost needs our help. At IFFA, you'll see us present the answer to that and a vegan variant of snack sticks with a long (ambient) shelf-life, for example. But we'll also looking further ahead and letting visitors taste insect burgers and challenge everyone to taste the difference between the 100% vegan Cordon bleu and the original!"

Vaessen-Schoemaker (1946) rebranded in 2021 to Vaess and is ready to take the IFFA stage with a brand-new branding. With over 75 years of experience in food tech and a young, ambitious and creative team, Vaess is able to surprise the industry each time they exhibit at IFFA. At least than eight revolutionary food innovations are to be presented this year. Visitors can expect a live demonstration of alginate casings on a vegan frankfurter and unique meat substitutes such as a high-protein insect burger.

And with a bit of luck, you'll get to taste the juiciest chicken ever.







## Arla Foods Ingredients receives positive EFSA opinion for Peptigen® IF-3080

**T**he European Food Safety Authority (EFSA) has published an opinion that Arla Foods Ingredients' Peptigen® IF3080 (protein hydrolysate) is safe and suitable for use in infant formula and follow-on formula products in the EU.

The news follows EU regulations, which state that from February 22, 2022, the nutritional safety and suitability of all protein hydrolysates used in the manufacture of infant milk formula and follow-on formula in the EU would need to be evaluated. To date, Arla Foods Ingredients' Peptigen® IF3080 is one of only a few milk protein hydrolysate ingredients to receive a positive EFSA opinion. Those which

are not approved are removed from the market.

The European Commission is expected to include Peptigen® IF3080 in the Commission Delegated Regulation (EU) 2016/17 within the coming 12 months. Thereby, Arla Foods Ingredients' Peptigen® IF3080 will be approved for use in infant and follow-on formulas sold in the EU. Until then, Arla Foods Ingredients can supply Peptigen® IF3080 to its EU customers for the development of infant formula brands, which can be prepared for launch.

Anders Steen Jørgensen, Head of SBU Pediatric, Arla Foods Ingredients, said: "We are delighted by this opinion, which supports our reputation for having the industry's highest levels of quality, innovation and food safety."

[www.arlafoodingredients.com](http://www.arlafoodingredients.com)



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## Cooperation for the production of animal-free milk protein

**B**RAIN Biotech AG and Formo Bio GmbH are launching a strategic collaboration to further advance the production of animal-free milk proteins.

Biotech companies BRAIN Biotech AG and Formo Bio GmbH want to drive forward the animal-free production of milk proteins as part of their strategic cooperation. Formo will scale up their bio-identical milk protein production with a genome editing technology, leveraging BRAIN Biotech's expertise and its proprietary BEC platform. The alliance aims to optimize the microorganisms to further expand novel and sustainable protein production for commercial use through precision fermentation.

### Reducing CO<sub>2</sub> emission with precision fermentation

Berlin based start-up Formo is introducing an entirely novel product category alongside both animal-derived products and plant-based alternatives by producing identical milk proteins with specialized microorganisms. As the first European company, Formo strives to revolutionize the \$700 billion dairy market while cutting down on gigatons of CO<sub>2</sub> emissions. Formo builds on the increasing demand for sustainable food among consumers: Recently, the company conducted a consumer survey confirming that 79% of consumers are willing to try animal-free cheese products.

"We are proud to be partnering with BRAIN; such a renowned company with which we share our

passion for biotechnology and the mission to foster sustainability: using precision fermentation, we can remove the cow from the dairy supply chain, reducing greenhouse gas emissions by 91 to 97%," said Dr. Britta Winterberg, Co-founder and Chief Scientific Officer at Formo. "With the expertise of top-notch scientists in our team and with a dedicated partner in strain engineering, our products can be the first of their kind produced on an industrial scale and offered at competitive prices. By partnering with BRAIN, we can establish our role as a global market leader at a more rapid pace", Winterberg stated.

According to the cooperation with the biotech start-up, Dr. Michal Krohn, Head R&D at BRAIN Biotech declared: "We are looking forward to providing Formo with our genome editing expertise and proprietary BEC nuclease to support their strain development for the production of animal-free cheese products." Krohn further said: "Precision fermentation is an example of how genome editing technology can be used to generate a protein that is nature-identical but can be produced more sustainably than animal protein."

Dr. Martin Langer, EVP and Head of Business Development at BRAIN Biotech AG, emphasized: "Formo is a pioneer in many respects. Their agile decision-making processes, their candid approach to negotiations and their clear ideas on how to market their products in Europe make Formo an ideal strategic partner for BRAIN. Combined with our technological expertise, this results in a unique partnership."

## Grassland Dairy acquires Medlee Foods

**G**rassland Dairy Products, Inc. has completed the acquisition of Medlee Foods, LLC. As part of the transaction, Grassland Specialty Brands, LLC (GSB) has been formed to continue the sales and marketing of Medlee products along with Grassland branded butter. Albert Valdes will assume the role of President and CEO of the reporting unit and report to Leon Gregorich, CEO of Grassland Dairy.

"I am happy to welcome the Medlee team to Grassland," said Leon Gregorich, CEO of Grassland. "With the creation of GSB, the brand and team will bring a dedicated focus to the Company's strategic initiative started two years ago." Trevor Wuethrich, President and fourth generation family member added, "I am excited to see the product innovation, go to market strategies and marketing efforts from GSB for the advancement of the brands."

"We are excited to have found in Grassland a partner that valued our vision and provide resources and support to further the growth of the brand," said Albert Valdes, President & CEO of Medlee Foods.

# DSM extends Delvo® Guard bioprotective culture range to combat food waste in yogurts while balancing taste and texture

**R**oyal DSM, a global, purpose-led, science-based company, today launches four new Delvo® Guard bioprotective cultures, enabling yogurt manufacturers to naturally extend shelf life while maintaining a great taste and texture. The new cultures contain naturally occurring dairy microflora and provide a cost-effective solution to improve the quality and safety of dairy products. The new culture range provides better control for dairy manufacturers over post-acidification, gas production and decolorization, as well as improvements to creaminess and mouth-feel while extending shelf life.

Rich in protein and calcium, yogurt is a staple food around the world. However, in Europe alone, 20% of dairy products are lost or wasted every year – totaling 29 million tonnes.<sup>1</sup> DSM research confirms that most yogurt waste, approximately 9%, happens after consumers have purchased the product.<sup>2</sup> Decreasing dairy loss and waste in the home can have a significant positive impact in the long-term, both environmentally and economically.

Extending the shelf life of popular dairy products is an effective way to cut down on food waste. A key contributor to yogurt spoilage during shelf life is microbial contamination, in particular mold and yeast contamination, and presents a complex challenge for manufacturers. At the same time, shelf life needs to be carefully balanced with taste, texture, pricing and labeling requirements, while not affecting existing manufacturing processes. Maintaining natural positioning is also crucial for manufacturers. Natural is the top claim for new yogurt launches globally and more than 30% of yogurt launches had “natural” claims in the last five years.<sup>3</sup>

DSM's new Delvo® Guard cultures were designed with these challenges in mind. The new additions to the range provide manufacturers with protective cultures that prevent yeast and mold growth in yogurt products resulting in a longer shelf life, without sacrificing taste or texture. The extended range includes Delvo® Guard 302 and Delvo® Guard 303 which offer protective properties that prevent or delay the growth of spoilage organisms by days or even weeks, even during challenging situations such as cold breaks in the supply chain. Also in the range, Delvo® Guard 304



and Delvo® Guard 305 have a lower post-acidification impact while still providing protection against microbial spoilage. All Delvo® Guard bioprotective cultures are easy to use and process – delivered as convenient 1-bag Direct Vat Cultures (DVC) they can be added into the production process at the same time as the starter culture.

“This is an extremely strong generation of bioprotective cultures,” comments Karoline Kjaerulf, Global Business Development Manager, Fresh Fermented Solutions at DSM Food & . “Evolving consumer tastes mean natural yogurts with reduced sugar, less fat, and no additives are leading the pack. At the same time, food waste is a priority across the industry. The new Delvo® Guard cultures help manufacturers enjoy the best of both worlds by keeping yogurts fresher for longer while maintaining a great taste and texture. This offers an exciting possibility for brands to improve their consumers’ experience while also taking meaningful sustainability steps to reduce waste throughout the supply chain.”

This latest launch is part of DSM's ongoing efforts to support the dairy industry in its journey to decarbonize their value chain, reduce food loss and waste and reach ambitious sustainability targets. This is achieved while improving the both the taste and the texture of products, so producers and consumers can enjoy it all. With its strong presence across the value chain, DSM takes a full ecosystem approach to making sustainable dairy a reality.

For more information on how DSM can help you extend the shelf life of your yogurts, visit: [DSM Delvo® Guard](#).

#### References:

- 1 FAO, 2020, <https://www.fao.org/3/i4807e/i4807e.pdf>
- 2 DSM interviews with European experts, 2019
- 3 Mintel GNPD, Aug 2021

# Feel Foods further extends shelf life of its Black Sheep Vegan Cheeze using all natural HPP process

**F**eel Foods Ltd. has announced it has further extended the shelf life of its wholly-owned Black Sheep Vegan Cheeze products using state-of-the-art High-Pressure Pasteurization (“HPP”) technology to naturally increase shelf life without the addition of any chemicals or preservatives.

The latest third-party testing of our vegan cheezes has significantly extended the previous shelf life by over 100% after undergoing the HPP process, increasing from five weeks to over ten weeks with ongoing stability testing continuing now. This not only allows end consumers to enjoy these dairy alternative products for longer but also allows for a variety of new distribution channels and the onboarding of additional food distributors that require a specific shelf life for products they carry. The longer shelf life provides key logistical advantages as the Company looks to scale production, continues its expansion across Canada, and looks to enter the US market.

Feel Foods Director and CEO David Greenway states: “We will continue testing to further extend the shelf life of our hand-crafted specialty vegan cheezes. Using HPP technology is a real game-changer, not only for product freshness and longevity, but also for the logistical benefits as Feel Foods continues to expand throughout Canada and looks to expand into the USA. We will continue to grow our distribution online as well as in stores, now available in over 70 grocery stores and food services locations throughout British Columbia.”

Feel Foods’ 100% owned Black Sheep Vegan Cheeze products are now available for purchase on multiple online marketplaces. We encourage Feel Foods Investors, Stakeholders and Customers to begin following Black Sheep at: [Instagram.com/blacksheepvegancheeze](#) and at any participating online marketplaces to try Black Sheep unique products.

# Emmi elects Ricarda Demarmels as CEO

**R**icarda Demarmels, Chief Financial Officer of the Emmi Group and member of Group Management, will succeed CEO

Urs Riedener on 1 January 2023. After leading Emmi for 14 years, Urs Riedener will be stepping down from his post at the end of the year as announced. He has been nominated by the Board of Directors as successor to Konrad Graber, Chairman of the Board of Directors, who will not be standing for election. With these appointments, the Emmi Board of Directors is underlining its commitment to continuity in the management and direction of the company and in its corporate culture.



# FrieslandCampina and DSM take major step to reduce greenhouse gas emissions from dairy cattle

**I**t's a European first by FrieslandCampina: a large-scale pilot project to gain practical experience with Bovaer®, DSM's innovative feed additive that consistently reduces methane emissions from cows by around 30%. Following EU approval for the additive's use in February 2022, the parties have decided to launch this pilot immediately. The Dutch feed supplier Agrifirm will supply the feed additive to the participating farmers. Through innovations like this, Dutch dairy farmers can build on sustainability improvements

over recent years and contribute to a sustainable food production system.

The Bovaer® pilot collaboration between the Dutch companies FrieslandCampina, DSM, and Agrifirm marks an important step forward in increasing the sustainability of the dairy sector. Some 200 FrieslandCampina dairy farms in the Netherlands will take part in the pilot in the second half of 2022. Providing the results are positive, the use of Bovaer® will be further upscaled from 2023.



# Emmi and Nestlé to launch a comprehensive climate protection initiative together with milk suppliers

**E**mmi and Nestlé have launched the “KlimaStaR Milk” initiative together with milk producer organisations aaremilch and the Central Switzerland Milk Producers Cooperative (ZMP). The cross-sectoral initiative pursues the goal of gaining scientifically based insights together, in order to make the Swiss dairy industry more competitive and sustainable with respect to climate protection and resource efficiency. With a tailored mix of measures, the aim is to reduce greenhouse gas emissions from agricultural milk production by 20% on average. The initiative is supported by the Federal Office for Agriculture (FOAG) and will include around 300 agricultural pilot operations. The School of Agricultural, Forest and Food Sciences at Bern University of Applied Sciences (HAFL) and ETH Zurich will be supporting the initiative as scientific partners.

In Switzerland, dairy cows are part of a sustainable agricultural sector that is adapted to local conditions. As part of a biological cycle, they convert grass that cannot be consumed by humans into nutritious milk for direct human consumption. At the same time, the question arises as to how the dairy industry can further reduce its impact on the climate and ruminants can also be part of a sustainable and land-appropriate agricultural sector in the long term.

According to estimates by the United Nations, the dairy industry is responsible for around 3% of total global CO<sub>2</sub> emissions. This does not make it one of the largest contributors to greenhouse gas emissions; however, solutions do need to be found for the harmful methane emissions produced by cows in particular.

Further progress with respect to climate protection is also in the fundamental interests of local agriculture and the milk processors. After all, according to scenarios by the Federal National Centre for Climate Services<sup>2</sup>, even in Switzerland, the climate is likely to become even dryer and hotter in future, and will be characterised by even more frequent heavy rainfall, with noticeable to strong corresponding negative impact, depending on the region.

## A pioneering role in sustainability

“KlimaStaR Milk” aims to create a common basis for a more sustainable, resource-saving and land-appropriate Swiss dairy industry and thus position it for long-term success.

To this end, Nestlé, Emmi, aaremilch and ZMP – four major players in the Swiss dairy industry – have joined forces. Because the initiative aims to improve sustainability in the use of natural resources and its findings promise benefits and impact through the project, this project is also supported with financial assistance by the Federal Office for Agriculture (FOAG) as part of the Resource Programme for Agriculture (AgricA Art. 77a).

By joining forces, the initiators want to contribute towards further reducing the environmental footprint of milk and thus also of dairy products, and, in turn, also to meet a growing need felt by consumers. To this end, the initiative also starts at the very beginning of the supply chain: milk production itself. Around 300 farms are to be involved in the project and supported by research

and milk processors.

## 20% less greenhouse gas emissions

With the help of various measures, the project partners aim to reduce greenhouse gas emissions from milk production by 20%. To achieve this goal, four key points are being addressed: feed, herd management, energy, and farmyard manure. To measure progress, scientifically based survey methods and specially developed analysis technologies will be used.

The project sponsors have also set ambitious reduction targets of 20% in the feed-food competition, i.e. the situation in which food that would also be suitable for human consumption is used to feed animals. This is the case, for example, when wheat is fed to cows. Land competition occurs when feed comes from cropland that could also be

pursuing further climate protection targets of their own.

Gabriele Schachermayr, Assistant Director of the FOAG, comments on the initiative: “With this project, solutions for a more climate-friendly dairy industry are to be tested in practice and developed further together with the partners involved in the value chain. The aim is to reduce greenhouse gas emissions in dairy production, and at the same time reduce land and food competition. We expect a very large increase in knowledge in this regard. This is important in order to achieve more sustainable, land-appropriate and productive agriculture.”

Marc Heim, Emmi Executive Vice President Switzerland, comments: “Only by working together will we be able to advance effective climate protection solutions. As Switzerland’s leading milk processor, we are aware of our responsibility to operate our business in a resource-efficient, socially and ecologically sustainable way. I am convinced that the partnership-based initiative will help us gain a better understanding of complex interrelationships and provide fact-based insights, so that together we can strengthen the tradition of a sustainably oriented Swiss dairy industry also for generations to come.”

Daniel Imhof, Head of Agricultural Affairs at Nestlé Switzerland, says: “Climate protection can only be achieved by joining forces. We are therefore pleased to be able to pull our weight here together with Emmi and make a contribution towards sustainable Swiss dairy farming. Cow’s milk has been an important resource for us since the birth of Nestlé and remains indispensable in the manufacture of infant nutrition and other products at our factory in Konolfingen. We don’t want to replace our cows, but rather help to improve their environmental footprint.”

Thomas Grüter, President of the ZMP, explains: “To reduce greenhouse gas emissions in agriculture, the entire value chain must play its part – from consumption to raw material production. Our milk is produced in and with nature – our dairy cows are part of it. It is therefore in our own fundamental interests to contribute to the climate targets. Milk production here is already grassland-based and land-appropriate. With KlimaStaR, we want to gain further scientifically sound knowledge on possible conflicting targets and for impactful measures to effectively align our milk production in a sustainable way.”

Rudolf Bigler, Chairman of the Board at aaremilch AG and an active milk producer: “Since 2014, aaremilch AG has been strongly committed to climate protection and has done some pioneering work. We do not shy away from tackling complex issues since we are convinced that Swiss milk is a very sustainable and healthy food staple.”



used to grow food. The aim is to reduce these undesirable interactions with the aid of resource-saving feed methods and roughage-based dairy farming.

## Positive incentives for dairy producers

Interested producers can now find out more about the initiative and register to take part via a specially set-up website (Klimastar-milch.ch). They receive a practical and farm-specific analysis of the carbon footprint for their milk. This is then used to develop individual, land-appropriate emission reduction strategies. Dairy producers are free to choose what measures they take and receive positive incentives for implementation via an impact-oriented bonus model.

The innovative initiative is intended to run for six years. From the scientifically supported results obtained in this way, all those involved hope to gain partnership-based insights that will allow for implementation of targeted measures beyond the scope of the project and thus help to further reduce the greenhouse gas emissions of the Swiss dairy industry, which are rather moderate by international standards.

The “KlimaStaR Milk” project contributes towards the respective climate ambitions of Emmi and Nestlé, which are both aiming to become climate-neutral by 2050. Both Emmi and Nestlé are

## References:

1 UN Food and Agriculture Organisation: Greenhouse Gas Emissions from Agriculture, Forestry and other Land Use 2014

2 NCSS National Centre for Climate Services: CH2018 Climate Change Scenarios

[www.emmi.com](http://www.emmi.com)  
[www.nestle.com](http://www.nestle.com)  
[www.aaremilch.ch](http://www.aaremilch.ch)  
[www.zmp.ch](http://www.zmp.ch)  
[www.agrocleantech.ch](http://www.agrocleantech.ch)

# Arla Foods Ingredients expands its organic offering

**A**rla Foods Ingredients has further strengthened its credentials in the organic sector, with two new products for early life nutrition, and a range of concepts for organic food.

## Quality guaranteed: New formula ingredients

More than six in ten Chinese parents say organic is very important to them when purchasing for their children, and organic formula products are expected to grow by 10% in the next five years.

With access to one of the largest pools of organic milk in the world, Arla Foods Ingredients can provide high volumes of consistently high-quality raw materials for organic formula. Meanwhile, the Arlagården® farm management programme ensures that its ingredients meet the highest standards of safety and animal welfare.

Arla Foods Ingredients has now added two new organic-certified products to its early life nutrition range: Lacprodan® IF7390 Organic, a whey protein concentrate produced from organic whey, and Premium Lactose Organic. Both will be showcased at Food Ingredients China (May 31st to June 2nd).

Niels Joakim Karlsen, Paediatric Sales Development Manager at Arla Foods Ingredients, said: "Having a child is often the trigger for interest in organic, and of course parents are particularly focused on safety and high standards. It's therefore especially important for formula manufacturers to use high-quality ingredients. As we expand our range, our vision is to become the most trusted supplier of organic ingredients for early life nutrition."

## Organic food: Different concepts for different markets

Despite global GDP decline, organic food sales grew in 2020, and the growth rate for organic packaged food was the highest among all health categories.

Arla Foods Ingredients offers a range of organic products for food, including organic versions of its Nutrilac® range of functional protein solutions.

It has now launched new concepts demonstrating their potential in different applications and different regions. They include Cast cheese: a natural and simple way of cheese making aimed at the growing Chinese cheese market and due to be showcased at Food Ingredients China. The process, which can be used to simulate cheese types such as cheddar and gouda, enables the production of both finished or semi-finished products. It also offers the option to develop new cheese products with a pleasant milky taste, as well as all the benefits of organic status.

Other concepts include an organic white cheese with a milky taste and optimal reaction to rennet. It offers an organic alternative to popular



white cheeses in a region such as MENA. In addition, the concept includes an organic cooking-stable cheese, which targets the growing number of consumers who are reducing their meat consumption.

Moreover, an organic convenient and nutritious RTD has been developed. It has been designed to appeal to health-conscious consumers and is expected to be attractive for different regions, such as the European and MENA markets. The key attributes of this RTD are its high protein and calcium content, together with a mild and milky taste, and pleasant drinkable viscosity.

These product examples are just small selection of the different organic applications Arla Foods Ingredients can support with its new range of organic ingredients. There is much more to offer.

Barbara Jensen, Sales Development Manager at Arla Foods Ingredients, said: "Demand for organic is high across the world, but interpretations of what it means can vary significantly. In China, for example, organic has powerful associations with health and food safety. In other markets, it's more about values like sustainability. As these concepts demonstrate, our ingredients can help manufacturers to create organic products that appeal to consumers in their target regions, while at the same time delivering functional benefits."

## Toolkit for organic success

The expansion marks the latest phase in Arla Foods Ingredients' organic journey, which began in August 2020 with the launch of MicelPure™ - an organic micellar casein isolate.

Today it has launched a toolkit to help create successful organic products. The Natural Organic Winners campaign advises manufacturers to deliver more than just the organic message, and to tell engaging stories about health, sustainability and clean labels.

It also highlights the value that Arla Foods Ingredients offers companies in the organic space, including security of supply and specialist application support.

[www.arlafoodingredients.com](http://www.arlafoodingredients.com)

# Royal Avebe launches new multifunctional starch for irresistible creamy clean label dairy products

**R**oyal Avebe has announced the launch of Etenia ES, a new multifunctional texturizing potato solution for creamy dairy products.

The product is perfectly tapping into the customer need to make dairy products clean label, delicious and guilt-free.

The challenge for dairy manufacturers lies in replacing milk protein, fat and label-unfriendly hydrocolloids whilst maintaining the same taste and texture.

And the alternative should be highly process tolerant, easy adaptable into current dairy processes. Etenia ES offers dairy producers the solution.

Features and benefits of Etenia ES include:

- Potato-based texture solution
- Process tolerant (including UHT)
- Improved stability
- Easy to dissolve and process
- Clean label
- Texture range; from spoonable to spreadable
- Free from allergen labelling
- Great mouthfeel

Alternative to milk protein and/fat in plant-based dairy applications.

"Etenia ES is our newest member of the Etenia family. It is a perfect clean label solution to replace modified starches & hydrocolloids or reduce fat and whey protein. With great solubility and so easy to process it is a nice addition to our Etenia product range of multifunctional texturizing solutions for Clean Label products," says Joseph Lombardi, Regional Sales Director at Avebe Americas



**Send your Dairy news to the  
Innovations newsdesk  
Email: [terryprior@innovationsfood.com](mailto:terryprior@innovationsfood.com)**



## Fazer completes the acquisition of Trensums Food AB

**F**azer Group has completed the acquisition of the Swedish food company Trensums Food AB. The transaction has been approved by the Swedish Competition Authority. Trensums Food is one of the leading producers of plant-based drinks in Europe, with a strategic focus on oat drinks. This acquisition is a further step in the implementation of Fazer's growth strategy and the ambition to become one of the leading players in non-dairy and plant-based markets in Northern Europe.

The global demand for oat drinks continues to grow due to the good taste as well as low environmental impact of the products. With its sizeable capacity, efficient operations, and state-of-the-art production Trensums is well positioned to meet the growing demand for oat drinks. Trensums Food is a growth company and has continuously invested in oat-drink production capacity in line with increasing demand.

Fazer Group has acquired 100% of Trensums Food. All employees currently employed by Trensums Food continue as employees of Fazer Group. The company will become part of the Fazer Lifestyle Foods Business Area, which focuses on oat-based non-dairy products, breakfast products, fruit-based snacks, plant-based meals and foodtech.

Christoph Vitzthum, President and CEO, Fazer Group says: "We are pleased to announce that the acquisition of Trensums Food AB has been completed. Trensums Food AB is a perfect match for Fazer in executing our growth strategy. The acquisition will multiply our oat drink production capacity, and it provides Fazer a platform for further growth and access to new non-dairy markets. With its long history in oat drinks, Trensums Food will also offer us extensive manufacturing and R&D expertise to further strengthen Fazer's already strong know-how in oats."

Over the last three years, Fazer has invested a total of approximately EUR 200 million in its home markets. Most of the investments have been made in developing the oats business of the company. Nutritionally rich and sustainable Nordic oats are considered the best in the world due to the special growing conditions found nowhere else in the world.

"We have great growth expectations for the non-dairy category, and we highly value the expertise of the Trensums team which will add to our already strong knowhow. Demand for oats is growing strongly, and we want to embrace a plant-based lifestyle to promote people's well-being and - at the same time - do good for the planet," Christoph Vitzthum continues.

## Innovative upcycling: Sustainable ingredients from brewer's yeast

**Y**eastup AG, pioneers in the field of sustainable use of spent brewer's yeast, provide nutritional proteins and dietary fibers for the food, beverage and cosmetics industries. Yeastin® is a top-quality, highly versatile protein source that is also natural and sustainable. Other products derived from the cell wall of yeast include beta-glucans and mannans, which are marketed under the UpFiber® brand. The goal of the founders is to make a real contribution to sustainability and the circular economy: Their vegan proteins and polysaccharides have the smallest possible carbon footprint and require neither arable land nor irrigation.

The brand Yeastin® comprises vegan proteins obtained by upcycling spent brewer's yeast. Using a newly developed process, the cell walls are gently disrupted to release the nutrients. The result is a high-quality protein with an excellent nutritional profile that is as valuable as that of animal proteins. Thanks to its neutral taste and high solubility, Yeastin® can be used in a wide range of applications – predominantly meat and dairy alternatives. Furthermore, its numerous and versatile functionalities mean it can also act as an emulsifier or foaming agent, and thus replace eggs in vegan formulations, for example.

As brewer's yeast is packed with proteins and



other nutrients, extracting these valuable components from the cell walls makes total sense from both a nutritional and sustainability perspective. In collaboration with engineering companies and University of Life Sciences FHNW based in Switzerland, Yeastup developed a gentle process to extract the ingredients of the cells of spent brewer's yeast and remove off-notes, as well as the natural residues from the brewing process. The result is a protein powder that convinces with highest purity and quality, and, importantly, a neutral taste.

[www.yeastup.com](http://www.yeastup.com)

## Renaissance BioScience Corp. announces new patents for acrylamide-reducing yeast technology

**R**enaissance BioScience Corp., a leading global bioengineering company, has recently received new patent allowances and grants for its non-GMO acrylamide-reducing yeast (ARY) from regulatory authorities in China, Russia, India, Australia and Vietnam. These five new ARY patent grants and allowances join previously issued patents from the U.S., Japan, Indonesia, Chile and Colombia, with patents pending in multiple additional markets.

Renaissance BioScience CEO and CSO, Dr. John Husnik, commented on the newly granted patents: "As an intellectual property-focused company we are pleased to receive the new patent grants and allowances in the major markets of China, Russia, India, Australia and Vietnam. These new patents join those already granted or pending in other major markets around the world, to protect the use of our acrylamide-reducing yeast in many different and important food manufacturing applications."

He added, "Acrylamide is a carcinogen of global concern – especially for children, who tend to consume more than adults due to their daily diet of many common foods that unfortunately contain this carcinogen (crackers, bread, cookies, cereals and the like). We are especially pleased that our acrylamide-reducing yeast is finding acceptance and being commercialized by food manufacturers in markets all around the world with a mandate to reduce the presence of this contaminant in their products."

Please send your bakery news to  
[terryprior@innovationsfood.com](mailto:terryprior@innovationsfood.com)

## EverGrain Ingredients among the first global plant-based protein suppliers to achieve the Upcycled Food Association's certification

**E**verGrain Ingredients, an impact driven ingredient company created by AB InBev, recently announced that its entire portfolio of upcycled barley protein and fiber ingredients has received the Upcycled Food Association's (UFA) certification. The first-of-its kind mark, which launched last year, will enable food and beverage manufacturers that use the ingredients place the claim on its packaging.

"We started our journey in 2013, long before upcycling was a trend, with the goal of unlocking every grain of potential in our barley to have a positive impact on people and planet," said Gregory Belt, EverGrain CEO. "We are transforming spent barley – what we, at EverGrain, call saved barley – into one of the world's most sustainable, accessible, plentiful sources of plant-based protein and fiber."

This summer, EverGrain is due to come online with a scaled facility out of St. Louis, MO producing EverPro, a soluble plant-based protein that is highly compatible with pea protein. The company is also exploring plant-based protein and fiber ingredients that can be used in meat alternatives, breads and pastas.

"As the world's largest brewing company, AB InBev depends on high-quality barley from thriving communities and healthy ecosystems to brew our beers. Every year, 1.4 million metric tons are left over, or 'spent' through the brewing process," said Ties Soeters, EverGrain Chief Product Owner. "Given the global scale, protein quality and market advantage, the team at EverGrain saw a unique opportunity to unleash the power of upcycled nutrition to meet the increasing global demand for plant-based products."

This is especially good timing as individuals begin actively seeking products that carry the certification as a way to make an impact on the planet with their food and beverage purchases. Take Two, an Upcycled Certified barley milk made from EverPro, is one such product available in market today. The UFA recently announced that demand for the certification has already exceeded original projections, and the 141 packaged goods and ingredients with this designation are now projected to prevent more than 703 million pounds of food waste annually.

UFA's founder and CEO Turner Wyatt says having companies that can leverage their size and scale, and ability to innovate from within, enables consumers to accelerate the impact that can be made with accessible choices. "The products and ingredients that have gone through the certification thus far span food, cosmetics, personal care, and pet food, and are created by both small startups and global legacy brands. This represents a major shift in our consumer product and retail environments because for the first time, consumers can help to prevent food waste every time they walk into a grocery store."

EverGrain began with a mission to fully utilize barley to its full potential. EverPro's nutritional profile is one of high, bio-available protein, very low carbohydrates, just a half gram of sugar per 100g and free-from cholesterol, soy & dairy.

[www.evergrainingredients.com](http://www.evergrainingredients.com)



## Lantmännen is launching gluten-free wheat starch

**T**he diagnosis of celiac disease (gluten intolerance) is increasing in society and currently affects 1-2% of the population. For those affected, keeping gluten out of their diet is of utmost importance. There is also an increasing number of people who have adopted a gluten-free diet for lifestyle reasons, so the market for gluten-free products is growing.

Lantmännen Biorefineries is now launching gluten-free wheat starch, grown in western Sweden from selected autumn wheat. For manufacturers of gluten-free foods, gluten-free wheat starch is an excellent ingredient for many types of applications, as it provides good baking properties, despite the absence of gluten.

"After several years of development, we can now offer the market a gluten-free ingredient with good baking properties that does not affect the taste of the final product. In addition, it is the first Swedish alternative in this exciting and fast-growing market," says Lars Franzén, Head of Food Ingredients at Lantmännen Biorefineries.

The product is a fine white powder with a neutral taste and excellent baking properties for all types of gluten-free baking. It is gluten-free according to European directives and will be launched initially in the Nordics and in northern Europe, where demand is currently very high.

[www.lantmannen.com](http://www.lantmannen.com)

## Improve flavour and texture of clean label bakery products with Butter Buds® flavour solutions

**B**utter Buds® Inc., a leader in dairy and non-dairy concentrates, recently highlighted a range of ingredient solutions that help manufacturers improve the flavour and texture of clean label bakery products such as par-baked breads. Butter Buds' flavor solutions are made from real butter, cheese and other fats, which allows them to provide both flavour and other functional characteristics that typical flavours cannot provide. Now par-baked breads can taste rich and delicious while having an ingredient list that is shorter and easier for consumers to understand.

Food manufacturers have spent several years working to clean up and simplify ingredient decks as clean label hit mainstream. Euromonitor estimated clean label food sales to be worth over \$180 million in 2020 as consumers spent more time reading ingredient labels. Many R&D teams have been tasked to overcome flavor and texture issues that can occur with clean label bakery products. Par-baked doughs can be especially challenging given that they are frozen, thawed and then ultimately baked before serving. Water lost during the process contributes to flavor and texture deficits driving many to seek out new formulation solutions.

"Butter Buds label-friendly butter and cheese flavors have been around for more than forty years," said Michael Ivey, National Sales Director, Butter Buds Inc. "Because our ingredients are made from real butter, cheese and other fats, it allows the ingredient declaration to read 'natural flavour'. Our flavor solutions add richness and texture to bakery products, helping our customers meet the ever-increasing demand for cleaner labels. Having our hard-working ingredients in the matrix often means manufacturers can reduce usage of other commodity ingredients such as butter resulting in a bakery product that not only has a cleaner, simpler label but also provides a rich, satisfying taste

and texture."

"Many manufacturers are also working to expand offerings to include lifestyle options such as keto-friendly alternatives," said Zachary Fuchs, International Business Development Manager, Butter Buds Inc. "The rise in these alternative products often leads bakers to seek solutions to improve the mouthfeel of low-fat, healthier items such as cheese breads, rolls and other specialty breads. Our flavour solutions help add richness and create a fatty mouth feel while masking off notes to ensure your next keto-friendly bakery products taste as great as their full fat counterparts."

Butter Buds offers a wide range of flavour solutions that are ideally suited to a variety of clean label bakery applications. They work synergistically with other ingredients such as butter, cheeses and fats to boost the overall flavor impact and improve the finished bakery product. Flavour solutions for clean label bakery products include:

- Butter Buds 32X – A concentrated flavour providing rich butter flavor enhancement
- Cheese Buds – Cheese Flavour Enhancers available in various combinations depending on desired flavour profile
- Butter Buds CL – a non-maltodextrin butter enhancer
- Dried Cream Extract/Cream – helps mask off notes, improves texture and bite, also increases richness and mouth feel
- Cocoa Butter Buds – increases richness and improves mouth feel

"Our customers can count on us to deliver rich flavour without compromising functionality to ensure taste and performance sure to satisfy consumers," said Ivey. "Our applications experts are ready to help identify the ideal flavour and functional building block combination to improve the taste and flavour of your next bakery product."

[www.bbuds.com](http://www.bbuds.com)



# "Flour and People" – overwhelming response for the third World Flour Day

**T**he third World Flour Day was held on 20 March 2022. The entire flour industry celebrated the day with shared baking activities, because for millennia this staple food has contributed to health, well-being and prosperity around the world. Under the motto "Flour and People", this year the FlourWorld Museum, which initiated World Flour Day in 2020, collected stories about the meaning of flour for each individual.

Innovation, tradition, connectedness, prosperity, strength, joy, life. Those are just some of the answers that members of the worldwide gave to the question "what does flour mean for us?" The theme of this year's World Flour Day was well received around the world. A wide range of personal stories came in from Africa, Asia, Europe, Latin America, the Near East and many other regions. "We were overwhelmed by the participation in this year's World Flour Day," says Carsten Blum, the idea-giver and originator of the commemorative day. "We received many moving and inspiring stories. People around the globe shared with us their personal links to flour. All these stories show the multifaceted and individual significance of flour for each person." On World Flour Day in 2022 the flour industry celebrated its variety and solidarity. In many mills and companies that use flour, employees came together to honour this staple food with joint baking activities.

For the 20th of March the FlourWorld Museum created a dedicated flour sack with special artwork that represents the motto "Flour and People". It



shows three children baking together. "This special sack stands for flour and people, variety, internationality, family and the interconnectedness of all people through flour," explains Carsten Blum. The sack has a place of honour in the FlourWorld Museum. This museum in Wittenburg near Hamburg, Germany holds the world's largest collection of flour sacks, with over 3700 sacks from 140 countries. Under the motto Flour.Power.Life the FlourWorld Museum tells of the traditions, history and myths of flour.

"A special highlight of this year's World Flour Day was the large amount of flour donations we received from our customers for a charitable project in Uganda," says Maximiliane Schneider, Sales Manager East Africa at Mühlenchemie. On her initiative the FlourWorld Museum and

Mühlenchemie collected several hundred kilograms of flour for the "Girls' Club" charity project by the Butiru Friends Circle in Uganda. The initiative started in 2021 and invites girls from Butiru and surrounding villages to a Girls' Club three afternoons a week. The project has been so popular that Girls' Clubs are now offered in other locations. The goal of the initiative is financial independence, the strengthening of the community and the autonomy of women. The girls also learn to determine their profit and handle money.

The donations help the organisation to run baking and cooking courses so that the girls and women can set up their own small bakery stall. "We're very glad to be able to help in this way, because to us flour also means helping the community", says Maximiliane Schneider.

## Loryma expands extrudate portfolio

**I**ngredients specialist Loryma is expanding its range of functional extrudates that optimise the nutritional values and mouthfeel of applications in the sports nutrition, snack and convenience sectors. The cereal crispies (Lory® Crisp), protein crispies (Lory® IsoCrisp) and bread-crumbs (Lory® Crumb) are available in various shapes, colours and sizes, and are derived from



wheat and other raw materials. With additional fields of application, the new product range complements the already well-known Lory® Tex texturate, which serves as the basis for meat alternatives.

The cereal crispies of the Lory® Crisp range give a crunchy effect to breakfast cereals, muesli and chocolate bars, as well as sweets and baked goods. In addition to wheat, corn, rice and quinoa are also suitable as a base for the crispy extrudates. Depending on the raw material, various attributes

such as high-protein, low-fat, high-fibre and sugar-and salt-free can be achieved, as can organic certification.

The protein-rich Lory® IsoCrisp made from whey and milk protein is ideally suited for on-trend applications aimed at health-conscious consumers. They bring added bite to fitness bars, granola or other snacks.

Breadings with products from the Lory® Crumb range are particularly crispy and protect substrates such as meat, meat alternatives, cheese or potato products during frying or deep-frying. The various blends differ in colouring, nutritional value and shape. Loryma offers extruded breadcrumbs based on maize, rice and potatoes for different types of processing and end products.

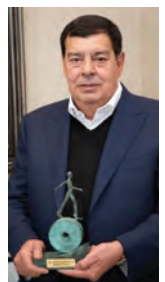
Henrik Hetzer, Managing Director of Loryma: "Extruded cereal and protein products are currently extremely popular because they combine enjoyment with optimised nutritional values. We are sure that our expanded range will inspire our customers. We can also implement individual wishes in design thanks to our own production capabilities, so there are hardly any limits to creative product development."

[www.loryma.de](http://www.loryma.de)

## Jamal Al-Hazaa inducted into Milling Hall of Fame

**T**he FlourWorld Museum in Wittenburg was founded on the initiative of Mühlenchemie, the flour treatment experts. The museum highlights the history and importance of flour. The Milling Hall of Fame, housed in the museum, has for three years honoured the lifetime achievements of persons who have made important contributions to the development of milling.

"Flour.Power.Life is the motto of the museum. It expresses the fact that flour is more than a staple food; it stands for strength and power. This is the guiding principle of businessman Jamal Al-Hazaa, who works in milling not just to make a living, but also because he sees his profession as a moral obligation," said museum founder Volkmar Wywiol in his welcoming remarks at the presentation of the bronze millstone sculpture, which every Hall of Fame member receives and which was created by Berlin sculptor Sibylle Waldhausen.



# Puratos cements industry leader status with sector-first sustainability analysis programme

**P**uratos Group, a global leader in bakery, patisserie, and chocolate ingredients, has launched a first-in-class Life-Cycle Assessments (LCA) initiative to help customers accelerate their sustainability ambitions.

Puratos has become the first bakery ingredients supplier to begin LCA analyses – the renowned barometer for supply chain sustainability – of its entire product range, beginning with core products from its pioneering Plant Forward range of plant-based dairy, egg, and butter replacement solutions. LCA studies concluded that the environmental impact of Puratos's innovative egg-wash alternative Sunset Glaze was 59 per cent lower than pasteurized eggs, and butter alternative Mimetic had an environmental impact three times lower than dairy butter. This means that switching from dairy butter to Mimetic could cut one ton of CO<sub>2</sub> emissions for every one ton of croissants produced – the equivalent of planting 50 trees.

Belcolade Selection M. Plant-Based Cacao-Trace, the company's newly-launched milk-alike plant-based chocolate, has also been assessed. The dairy-free, nut-free chocolate was found to have a 13% lower environmental impact than the dairy milk equivalent. Compelling data from these first assessments help to explain why the adoption of plant-based diets continues to grow, according to Laurent Thomé, Puratos's Global Sustainability Manager.

He continues: "Conscious consumerism, one of the key trends identified within our Taste Tomorrow research, signals a seismic societal shift in buying behaviours, as consumers increasingly seek to reduce their personal carbon footprints through



more responsibly-sourced products. Sustainable food choices sit at the heart of this movement and this is reflected in the plant-based boom. As identified in our Taste Tomorrow consumer research, plant-based eating is the single biggest trend in today's food industry, with environment concern being the biggest driver of demand. LCA studies of our premium plant-based alternatives offer unequivocal evidence that they are significantly better for the planet, with granular data allowing us to calculate precisely how environmentally beneficial these ingredients are compared to their animal-based counterparts. As a result, our customers can tangibly and confidently demonstrate the sustainability credentials of their end-products to their customers."

Puratos partnered with LCA specialist Yukan to

analyze the ingredients using the global environmental impact assessment tool, Glimpact. Glimpact applies the Product Environmental Footprint (PEF) method, recommended by the European Commission, which measures 16 impact categories, including climate change, water scarcity and land use. This makes it possible to objectively and rigorously compare the impact made by products within the same category following specific category rules (PEFCRs).

LCAs measure the environmental impact of a product throughout its life cycle, from the sourcing of all raw materials and resources to end of life. Each distinct part of the supply chain is closely analyzed, providing all parties – from grower through to consumer – critical information on the product's complete environmental impact, facilitating more informed and environmentally-conscious purchasing decisions. The roll-out of Puratos' LCA initiative underlines the company's deep-rooted commitment to future generations and moving the planet forward through innovative food solutions.

Thomé added: "As a responsible food ingredients company, our aim is to help our customers cater for increasing appetite for more sustainably sourced food, while also supporting the ecosystems of the communities we work in and with. The high level of transparency, traceability and credibility offered by LCA testing means that customers can fully trust that the sustainability claims made on their packaged products can be substantiated, which is of great value to both customer and consumer."

[www.puratos.com](http://www.puratos.com)

## Aryzta to double its sourdough and specialty bread capacity

**A**ryzta recently welcomed guests and employees to the launch event for its new production line in Grange Castle, Co. Dublin. This latest investment, supported by Enterprise Ireland, will expand its state of the art sourdough starter plant. As a result, the bakery will be doubling its capacity for sourdough and specialty breads.

In recent years, there has been a substantial increase in the demand for sourdough. Consumers across the Irish and UK market are constantly looking for new, complex and exciting taste profiles for bread. Innovation will be a key driver in satisfying these demands. Therefore, this expansion aims to meet these needs by providing a diverse range of delicious breads.

All of the speciality and sourdough breads produced at the Grange Castle bakery are made using a perpetual live starter. What makes this start unique is the fact it has 30 years of heritage in the business. This starter is continuously used and then regenerated on a daily basis. This starter gives Aryzta its uniqueness and distinctive flavour for the premium sourdough breads.

This announcement follows the 2020 Grange Castle investment which saw the installation and commissioning of its "Next Generation Stress Free French Bread" baking capability, producing the

highest quality French bread available on the market today.

Commenting on the news, Anthony Proctor, Managing Director of Aryzta Ireland /UK said, "This expansion is an important step on the ARYZTA journey to premiumise our bread range and to align the business with the consumer demand for breads with high nutritional value, fiber, seeds, grains and of course sourdough."

Aryzta Ireland is the owner of the popular Cuisine de France brand which recently celebrated 32 years in the Irish market.



Pictured left to right: Anthony Proctor, Managing Director ARYZTA Ireland/UK, Kieran Rumley, CEO Love Irish Food, Tara McCarthy, CEO Bord Bia and Leo Clancy, CEO Enterprise Ireland

## Silvery Tweed unveils new seed cleaning plant

**S**ilvery Tweed Cereals has unveiled the latest instalment in a £600,000 investment into fully segregating allergens at its Berwick-upon-Tweed headquarters.

The creation of a dedicated, allergen-free seed cleaning plant on site allows the cereal processing business to process an even wider range of ingredients for its customers and compact the supply chain by reducing the need to transport uncleaned seeds to a specialist facility.

Robert Gladstone, Managing Director, commented, "This project has been a few years in the planning, and it is incredibly satisfying to see the facility fully operational. We are always looking at ways in which we can improve and develop our business and processes. The new seed cleaning plant means that customers who require products that contain allergens aren't being penalised.

"We are very proud to be able to offer our customers the security of knowing that the products they buy from us are cleaned to the highest standard and any risk of cross-contamination has been eliminated.

[www.silverytweedcereals.co.uk](http://www.silverytweedcereals.co.uk)



# new ingredients showcase

## Givaudan launches PrimeLock+™ to deliver juicy deliciousness, flavour and stability while reducing fat in plant-based products



**G**ivaudan has launched PrimeLock+™, a patent-pending, natural, vegan-friendly integrated solution that mimics animal fat cells, enabling food companies to take plant-based product development and consumer satisfaction to a new level.

Consumers have come to love the comforting and warm sensation of biting into a burger; they savour and anticipate that first juicy, beefy bite. Now, with Givaudan's PrimeLock+™, food manufacturers can improve the consumer experience of their plant-based products.

The interaction between flavour, taste and texture is a key differentiator for plant-based

products, though maintaining juiciness can be challenging as a high proportion of oils are often released during cooking causing a drier mouthfeel. PrimeLock+™ encapsulates, protects and locks in both flavour and fat in plant-based meat substitutes, providing an authentic and delicious food experience.

This integrated technology enables companies to create great tasting, lower fat, plant-based products such as burgers, sausages and meatballs while improving the eating experience.

Sylvain Jouet, Global Product Manager for meat substitutes of Givaudan said: "Givaudan is committed to helping its customers create delicious plant-based products that consumers enjoy. To do this, we have built wide-ranging expertise and a growing suite of Integrated Solutions and Technologies in the alternative protein space. In 2019 we asked ourselves how we could improve the eating experience of plant-based burgers; today, after extensive research and development, we are excited to launch PrimeLock+™, a unique solution that delivers multiple benefits:

- PrimeLock+™ protects the flavour and fat during cooking, releasing it gradually during cooking and consumption
- Visual appeal is improved with a marbled, fat-like appearance
- Stability during shelf life is improved as PrimeLock+™ separates flavours from proteins
- PrimeLock+™ allows a reduction of up to 75% of the fat and 30% of the calories while improving the eating experience
- PrimeLock+™ is a natural, vegan-friendly solution

Jouet continued: "Our portfolio of solutions is complemented by our growing network of protein centres around the world, where our experts in plant-based innovation co-create healthier, exciting plant-based products. We are pleased to welcome customers to the Zurich Innovation Centre Protein Hub and the Protein Innovation Centre in Singapore, as well as sites in other regions, to discover how PrimeLock+™ and other innovative solutions and ingredients can help them create winning plant-based formulas."

Givaudan constantly creates and develops to expand its portfolio of Integrated Solutions and Technologies. PrimeLock+™ is part of the Integrated Technology portfolio and is a great example of Givaudan's broad capabilities in this space.

For more information see [www.givaudan.com/taste-wellbeing/market-drivers/plant-based-foods/meat-alternatives#primelock](http://www.givaudan.com/taste-wellbeing/market-drivers/plant-based-foods/meat-alternatives#primelock)

## Nektium's botanicals set to make debut in food and beverage sector

**N**ektium has expanded its botanical ingredient portfolio into the food and beverage sector for the first time. The move means its clinically researched, branded plant extracts are now available for use in a wide range of applications beyond supplements, including sports and energy drinks, dairy products, gummies, and cereal bars.

Spain-based Nektium's portfolio includes Zynamite®, a proprietary mango leaf extract (*Mangifera indica*) that is clinically proven to help boost the mental and physical aspects of sports performance. It also supplies the adaptogen Rhodioliife®, a rhodiola plant extract (*Rhodiola rosea*) that has been shown to help improve cognitive health and enhance endurance.

Thomas Adler, Chief Business Officer at Nektium, said: "The health benefits of natural plant extracts are gaining wider recognition, which means there is an exciting opportunity to take them beyond the dietary supplement and nutraceutical categories and into the more mainstream food and beverage sector. Following significant investment in our research and manufacturing capabilities, we have now been able to adapt our botanical ingredients so that they are suitable for use in a wide range of food and beverage applications, opening a major new opportunity for brands that are looking to harness growing consumer demand for natural health benefits in everyday products."

This year marks Nektium's 25th anniversary, having been founded in Gran Canaria in 1997. As



part of its celebrations, it has unveiled a new-look website at [www.nektium.com](http://www.nektium.com).

The company will exhibit on stand H140 at the forthcoming Vitafoods Europe (Geneva, 10-12 May 2022).

In another major development, Nektium has also recently announced that it is now a fully certified organic operator. Thomas Adler commented: "Increasing numbers of consumers are looking for natural health products that have been manufactured in a sustainable way. Organic is a great way to communicate the ethical values of a brand to shoppers, so we're excited that we can now offer our customers this option."

Martin-Rinco, M., et al. Supplementation with a Mango Leaf Extract (Zynamite®) in Combination with Quercetin Attenuates Muscle Damage and Pain and Accelerates Recovery After Strenuous Damaging Exercise. *Nutrients* (2020).  
Wightman, E., et al. Acute Effects of a Polyphenol-Rich Leaf Extract of *Mangifera indica* L. (Zynamite®) on Cognitive Function in Healthy Adults: A Double-Blind, Placebo-Controlled Crossover Study. *Nutrients* (2020).  
Bystritsky, A., et al. A Pilot Study of *Rhodiola rosea* (Rhodioliife®) for Generalized Anxiety Disorder (GAD). *J. Altern. Complement. Med.* 14, 175–180 (2008).  
Ahmed, M., et al. *Rhodiola rosea* (Rhodioliife®) Exerts Antiviral Activity in Athletes Following a Competitive Marathon Race. *Front. Nutr.* 2, 1–7 (2015).

# New range of texturized pea proteins, PROLIFICA, offer more versatility in development of plant-based protein products

**W**ith increased consumer attention on environmental sustainability along with a focus on personal health and wellbeing, 23% of consumers globally report that they are trying to limit their meat intake.\*

The growing trend for vegetarian or flexitarian diets has created a need for more plant-based protein options, especially when it comes to familiar products such as burgers, sausages or meatballs. Consumers are looking for the same taste, texture and experience of traditional meat products while feeling like they are eating healthier and being more sustainable.

Our new dry texturized pea protein range, Prolifica, makes it possible to develop these familiar products, which consumers love, but in a more sustainable and healthy way.

Made from high quality pea protein, the Prolifica range is an allergen-free and non-GMO



solution which effectively mimics the texture of meat. It is unique in that we can offer several combinations of shape, size and protein content. This means that Prolifica can be specifically tailored for more creative and varied product applications.

For more information or to request a sample, please visit <https://www.pgint.com/en/products/prolifika-dried-texturized-protein/>

\*Euromonitor

## True blue for hot & cold drinks

**F**oodTech start-up Gavan, Ltd. is beating the blue colourant blues by creating a wide array of natural blue colourings for hot-and cold drinks via a proprietary technology. Gavan developed an innovative method for extracting an entirely natural, pure blue that delivers high performance and high stability.

Derived from spirulina, this new natural blue holds up under high-heat processing and in low pH, enabling full pasteurization. The platform allows for a full spectrum of stable shades of blue. The new colouring formulation is ideal for hot beverages such as tea and coffee as well as functional drinks and sport drinks. Such products typically require specific production parameters, including infusion in boiling water or acidic medium.

### The blue challenge

Vivid blue foods and beverages are eye-catching and exciting. However, consumers increasingly wish to avoid the artificial additives that create the vivid colours. Finding an all-around solution to the natural blue problem has been an undeniable challenge. "Both synthetic blue dyes and plant-based blue coloring have regulatory, stability, intensity, or price challenges," explains Yael Leader, head of product for Gavan. "The main barrier to creating food formulations with natural colors is stability—the ability to overcome formulation challenges and ensure vibrant and consistent true blue throughout the product's shelf life."

The "blue challenge" is even more evident in beverages. Delivering a heat-stable, naturally derived, vibrant blue for products with low pH is tricky. Any heat treatment might impact the colour irreversibly, and any shift in the pH can impair the colour stability and influence the blue colour's shade.

"A growing trend in beverages is fortified drinks with high amount of vitamins and minerals," adds Leader. "These ingredients can react with the pigment and accelerate the colour-degradation process, cause fading, or create a complex binding



of pigments and minerals that can deposit sedimentation in the final application."

### Getting the blues

Phycocyanin is a pigment-protein complex found in blue-green algae that naturally produces a beautiful pure blue. Gavan utilizes its innovative technology to extract phycocyanin from spirulina and produce a stable, natural blue colourant. Blue is one of the three primary colours and as such, it opens a window to producing other high-in-demand colours—anywhere from non-chlorophyll green to purple shades. These varieties also are highly stable and vivid.

Gavan's non-GMO technology extracts and optimizes the colourant gently, without damaging the source, and enables the extraction of multiple compounds from the whole spirulina, without waste. The technology protects the colourant from fading, even at pH as low as 3.0 or when pasteurized at 90°C for 30 seconds. In addition, the platform's control over particle size offers improved stability throughout the final product's shelf life.

"Gavan's proprietary technology enables us to transform spirulina or other plant-based compounds and sources into easy-to-use, water-dispersible food colourings suitable for hot and cold beverages," contributes Itai Cohen, CEO and Co-founder of Gavan. "Gavan's blue can replace artificial colouring and opens options for acidic beverages to be coloured with any blue shades. It has no impact on flavour, and maintains a clear, clean label. Our advanced platform can revolutionize plant-based products across multiple categories."



## Reimagine coffee with Capsoil's oil based functional ingredients

**C**apsoil FoodTech, by Prodalim, Ltd. innovates the coffee pods space, adding extra functional ingredients to the famous beverage. Its novel platform provides new opportunities for coffee lovers to boost their coffee routine with more than just a wakeup call. The company uses coffee pods as a unique delivery system to infuse coffee with multiple ingredients awarding added wellness benefits.

Oil and water do not mix by nature, but Capsoil cracked the code developing an advanced method for incorporating oil-based nutrients into coffee pods. This opens the doors to coffee fortified with oil-soluble ingredients, such as medium-chain triglycerides (MCTs), CBD, vitamins A, D, E, and K, and others.

"Coffee is functional drink by definition," notes Itay Shafat, PhD, Scientific Director for Capsoil FoodTech. "This is why it is the perfect vehicle for added functional ingredients. You get up in the morning and your first act is to drink a cup of coffee to perk you up and help you focus on your daily routine. Consumers already link coffee with functionality."

Capsoil's proprietary technology takes any oil-based compound and converts it to a self-emulsifying powder. Unlike some conventional powders, this novel process results in a dry, free-flowing powder that dissolves easily in either hot or cold liquids.

"Working for global companies that market healthy ingredients, I was fully aware of the need for coffee companies to enhance their offerings to consumers," explains Shafat. "Capsoil has a next-gen solution for many issues I faced in my previous positions. Most vitamins and antioxidants are not water-soluble, and unable to deliver the active compound from the pod to the cup. Another challenge is the stability when mixing functional ingredients with coffee, which typically involves heat."

In addition to vitamins A, D, E, and K, oil-based antioxidants, such as lycopene or astaxanthin are also gaining momentum among consumers, as are cannabis-derived ingredients, such as CBD and terpenes. MCT oil is especially popular with athletes and paleo diet fans. It is a non-dairy ingredient that adds a cream-like effect to coffee, making it ideal for ready-to-drink coffee or coffee pods.

"A coffee pod is a single-use application that protects coffee from moisture and oxygen," says Nir Ilani, CEO of Capsoil FoodTech. "We embrace the pods as a courier to deliver the oil soluble ingredient' benefits and ensure their safety until using them."

Capsoil powders tick all the right boxes for today's competitive coffee producers seeking a cutting-edge differentiation in the marketplace. They are fully water-soluble and blend well with coffee powder to give the coffee the kick it needs. All of Capsoil's formulations are solvent- and chemical-free.



# Conagen produces two thaumatin protein natural sweeteners at scale

**F**ood and beverage brands get two more tools for their sugar reduction toolkits as Conagen announced the successful scale-up production of two new high-intensity sweeteners, thaumatin I and thaumatin II. The development will expand commercial partner Sweegen's robust sugar reduction solutions of zero-sugar natural sweeteners.

Thaumatococcus daniellii. Each protein, thaumatin I and thaumatin II, varies slightly in sweetness profiles. Both proteins have been evaluated as 100,000 times sweeter than sugar on a molar basis and 3,000 times sweeter on a weight basis. The high sweetness factor can translate into a strategic cost-effective sugar reduction solution for brands seeking to get the most out of a natural sweetener.

The thaumatin proteins were developed from Conagen's peptide production platform, which had previously been used for the scaled production of another peptide sweetener, brazzein.

"Conagen constantly improves its protein and peptide production platforms to generate more exciting new products," said Casey Lippmeier, vice president of innovation at Conagen. "In this case, the platform has been leveraged to make thaumatin by several innovative approaches, but under a significantly shorter R&D timeline."

These two new, high-purity thaumatin proteins add to Sweegen's creative portfolio of sugar reduction solutions to help brands make low-calorie products. Brands can now explore the synergistic benefits of formulations that contain thaumatin and other products from Sweegen's Signature Sweetener portfolio, including brazzein and stevia. This diversity of natural, high-intensity sweeteners represents the most cost-effective approach for reducing sugar in food and beverages to deliver the best tasting match for the sweetness of sugar.

The desire for natural sweeteners will drive the demand for fruit and plant-based sweeteners, such as thaumatin and stevia, respectively. The main advantages to sweetening food and beverages with

thaumatin are its familiarity and acceptance by consumers and the fact that it is approved for use in products by the majority of the countries in the world.

Health-conscious consumers are generally more accepting of natural sweeteners than sugar and artificial sweeteners.

According to FMCG Gurus, Top 10 Future Trends 2030, "60% of global consumers currently believe natural sweeteners are healthier alternatives to sugar." The trend report further stated, "Increasingly, consumers will want only products that contain real and authentic ingredients, and sweeteners will be no exception to the rule. As such, this will drive demand for sweeteners sourced directly from fruits and plants, something that the industry will respond to."



Like most other proteins, when thaumatin proteins are consumed, they are digested into amino acids. However, because thaumatin communicates such a strong sweet taste, the levels used in most applications contribute almost no calories. It is one of the most intense sweeteners ever discovered.

Consumers increasingly expect to stock their pantries with low-to-no sugar products with food and beverages that fit into their lifestyle and diets. Thaumatin can complement a number of consumer lifestyles, such as diabetic, ketogenic, or low-to-no carbohydrate diets. These sweet proteins are low on the glycemic index.

"Thaumatococcus daniellii is the second announced product generated from our peptide platform, which fits well into our existing world-scale, precision fermentation infrastructure," Lippmeier further added, "Peptides and small proteins like brazzein and thaumatin can be very difficult to make economically; however, now that we have successfully scaled multiple peptides and proteins, we are willing to collaborate with other customers to make other novel peptide products."

Regulatory approval for thaumatin as natural sweeteners has passed in the European Union (E957), Israel, and Japan. In the United States, it is generally recognized as safe as a flavoring agent (FEMA GRAS 3732).



## MARSEL® and PSOTRAMIL® are now also NATRUE-certified

**S**un, sea and a warm sea breeze. That is all it takes to harvest sea salt. Our raw material is our biggest ecological strong suit. And it is something we are rightly proud of. All the more so as our MARSEL® and PSOTRAMIL® products now carry the international NATRUE quality hallmark.

Consumers are attaching increasingly greater importance to the green, organic, sustainable or natural credentials of the products they buy. And this does not just apply to food products. In the world of cosmetics and personal grooming products, this has become extremely important.

This is why the international NATRUE standard was set up in Brussels in 2007, with the aim of fostering and protecting natural and organic personal grooming products and cosmetics worldwide.

Both cosmetic products as basic ingredients for cosmetics and personal grooming products are eligible to be awarded the NATRUE label. All certified products are listed in NATRUE's online public database, a practical reference platform for consumers and food producers alike.

Delivering top quality is ZOUTMAN's main priority. Which explains why it was imperative that we obtain the NATRUE quality certificate, your guarantee that you are getting a 100% dependable basic ingredient for cosmetic and personal grooming products.

In addition to qualifying as food-grade salt, MARSEL® sea salt is also a natural basic ingredient for a whole range of beauty products. Our therapeutic bath salt marketed under the PSOTRAMIL® brand name is sourced from the Dead Sea as a purely natural product that is completely free of harmful elements.

[www.natrue.org](http://www.natrue.org)



specific active ingredients: zinc, biotin and hyaluronic acid. The formula has been designed for the beauty of the skin and hair. It is also vegan and the sugar content has been reduced to a minimum. This new reference completes the range of 10 nutraceutical references of Laboratoire PYC. The flavours are natural, as in the rest of the range.

Laboratoire PYC is making these new references available to its customers. The jars contain 60 gummies, i.e. a 1-month treatment.

[www.laboratoire-pyc.com](http://www.laboratoire-pyc.com)

## Gummies at Laboratoire PYC

**L**aboratoire PYC, contract-manufacturer of food supplements, is extending its product range. Two references of gummies are now offered, in the immunity segment and in the beauty segment. Both references are vegan.

No one has escaped the wave of gummies, both in pharmacies and on social networks.

Long used for children (ease of consumption), gummies have found their audience among adults.

Sales of gummies are increasing all over the world (North America, Asia, Europe), driven by the growing interest in vitamin and mineral supplementation.

The North American market currently has the largest share of the gummies market but demand in Europe has been growing.

In France, sales of gummies have increased by 88% in pharmacies over 2021.

This format has the advantage of facilitating good compliance during a cure. It has also been strongly promoted by brands on the various social networks.

### Gummies at Laboratoire PYC

Laboratoire PYC Immunity Gummies reference is source of vitamin C and vitamin D. These immunity gummies have the advantage of being vegan. They are also formulated with natural flavours: citrus flavour. For some populations, vitamin D intake is necessary to ensure a satisfactory status (in addition to diet and sun exposure). Gummies are an easy to eat form for a regular vitamin D intake.

Laboratoire PYC Beauty Gummies provide 3

# Ingredion announces the latest innovation in clean label: NOVATION® Lumina 8300/8600, functional native starches

**I**ngredion EMEA will launch NOVATION® Lumina 8300 and 8600 functional native starches in EMEA during the first half of 2022.

Ingredion has developed two innovative functional native rice starches designed specifically to improve colour and flavour release, enabling natural flavours and colours of applications to shine through, even in white products. The new starches also improve Ingredion's supply chain resiliency and reduce environmental impact.

Until now, even functional native waxy rice starches contributing the least colour and flavour have struggled to meet strict sensory requirements in white or light-coloured applications with delicate flavours. This limitation has been addressed with the launch of NOVATION Lumina 8300/8600, enabling improved consumer preference and allowing the superior label and functional benefits of rice starch to be accessible to a wider range of products - all while supporting "natural" claims and other clean label messages. All are proven to drive the consumer appeal of products.

The past 24 months reinforced the importance of having streamlined processes that strengthen Ingredion's ability to be a reliable partner and supplier of ingredient solutions. While the supply situation in various parts of the world is still impacted by continued port congestions and availability of vessels and/or labour, Ingredion has invested in improving its internal processes with NOVATION Lumina 8300/8600, leveraging a new technology that enables manufacturing efficiencies that shortens the company's supply chain, reduces

lead times and increases security of supply.

The patented technology used to produce NOVATION Lumina 8300/8600 combined with investments in operations have led to a reduction in water consumption of approximately 6,000 MT per year and 585 MT annual CO<sub>2</sub> emission equivalent.<sup>1</sup>

This innovation is a result of the ongoing investment to support customers globally through the growth of the company's speciality food ingredients business. "After significantly expanding our Thai facility in June 2020, we harnessed our capabilities in manufacturing, Idea Labs Innovation Centers and Atlas proprietary consumer insights to identify ingredients and technologies that would address unmet customer needs. This resulted in the launch of the first ever multi-functional rice flours and now the introduction of these functional native rice starches," said Daniel Haley, Global Platform Leader, Clean & Simple Ingredients, Ingredion.

Produced from one of the world's three leading food crops, rice starch is highly recognised and accepted by more than 76% of consumers globally, independent of demographic or socio-economic factors.<sup>2</sup> Its smooth and creamy texture combined with its hypoallergenic properties, high digestibility, and lower viscosity development are unique versus ingredients and ideal for a range of applications. Waxy rice also has superior ambient, refrigerated and freeze/thaw stability compared to other commonly used crops, offering greater value over shelf life to manufacturers. NOVATION® Lumina 8300/8600 functional native starches provide moderate to high process tolerance and extraordinary white colour and bland taste, which enhance the potential use for manufacturers in retail and foodservice channels.

Haley continued, "NOVATION® Lumina 8300/8600 enrich the company's functional native clean label portfolio, support a "natural" positioning and provide customers with choices that best meet their processes, recipes, desired sensory experiences, and consumer preferences."

#### References:

1 Greenhouse Gas Equivalencies Calculator | Energy and the Environment | US EPA, 2021

2 Ingredion proprietary research, Global Clean Label Consumer Study, 2020

[www.ingredion.com](http://www.ingredion.com)



## Unique innovation specially designed for meat alternatives and plant-based meals market

**G**alactic has launched Natural Basil Flavor, a new natural ingredient specially designed for Meat alternatives and Plant-based meals.

This innovative product was formulated in a unique way to bring round flavors and high quality to the plant-based market. In addition, it offers attractive labelling options highlighting the plant-based source, the naturalness, and the clean label aspect of this ingredient.

It is a direct product of fermentation and infusion, an age-old, natural process, perfected by the Galactic fermentation experts who were

inspired by consumers' demand for clean and organic foods made solely with ingredients they know, are good for health and the Planet.

"We're excited to extend our portfolio of natural and sustainable solutions. We are continuously researching how to better answer food manufacturers' needs. Offering a new ingredient specifically designed for the plant-based sector is something we're very proud of. And many more innovations for other food segments are in the pipeline..." says Katrien LAMBEENS, Group Product Manager at Galactic.

[www.lactic.com](http://www.lactic.com)



## Tomato science from Lycored helping pizza makers reduce sugar and salt

**L**ycored, a global leader in natural lycopene-based colour and taste-enhancing ingredients for food and beverages has stepped up for 2022 with ready ingredient solutions for the pizza industry to help it reduce the amount of added sugar and salt in sauce and crust recipes.

According to Pizza.com, more than 5 billion pizzas are consumed around the world every year. "Global consumption of the world's most popular food combination is expanding at an exponential rate," notes Tammi Higgins, Senior Vice President of Food at Lycored.

"However, as pizza's market grows, and tastes and regulations change, every segment of the food industry, especially this one, is being challenged to deliver more authenticity and taste with less salt and sugar and zero artificial ingredients."

Global health agencies agree there is too much salt and added sugar in prepared foods, especially pizza sauce and crusts.

Lycored offers both SANTE and CTC (Clear Tomato Concentrate) as part of their Real Food Ingredients portfolio from the company's highly cultured tomatoes. Both are non-GMO and can be declared as either 'tomato concentrate' or 'natural flavour' depending on local regulations.

SANTE is a taste-enhancing solution that allows a reduction in sodium by 65% in some applications. CTC is a liquid serum that harnesses the balance of acidity and high Brix sweetness of tomatoes to bring smoothness and complexity to savoury products. Together, SANTE and CTC allow for a 30% sodium reduction and 100% added sugar removal from pizza sauce. Additionally, SANTE provides a 30% sodium reduction in pizza crust as well.

California's tomato shortage is also threatening to raise the cost of the most important pizza topping next to cheese, the sauce.

"Tomatoes are likely to be in short supply for the foreseeable future," explains Lycored's Higgins, "With less tomato paste manufacturers will be challenged to control product colour and shelf life of frozen retail pizzas. With the addition of Lycofibers (for texture and viscosity) and CTC to add taste back, pizza makers can significantly extend tomato paste supply."

For pizza sauces and similar recipes reducing key "structural" ingredients like tomato paste can be especially challenging. Lycored research and customer experience has shown that with Lycofibers, manufacturers can extend tomato paste supply by up to 25%, deliver a smooth texture to sauces and eliminate less attractive ingredients such as starches and emulsifiers.

[www.lycored.com](http://www.lycored.com)



# ABG+® aged black garlic moves into Gummies space

In response to growing supplement and food trends, Pharmactive Biotech Products, S.L.U. introduces Aged Black Garlic+ (ABG+®), with a sweet, “social” flavour that is odour-free and thus suitable for functional gummies. The science-backed ingredient delivers wellness benefits and won’t stimulate reflux the way fresh garlic can. Grown from a special variety of garlic, and cultivated just two hours from Pharmactive’s facility, it is gently processed using green technology. This method generates very low waste and significantly reduces the environmental impact.

This advanced aged black garlic ingredient comes at a perfect time: Upcoming regulations of the EFSA and European Commission will reduce the amount of red yeast rice allowed in existing formulations to just 300mg, therefore losing EFSA-approved claims for monacolin K.

Aged black garlic has long been regarded as a culinary delicacy and integral component of the Asian diet, as well as a tool to maintain health. Traditionally, it is produced by aging whole bulbs of a selected Spanish species of fresh garlic at high humidity and low temperatures for several weeks. ABG+ is produced using the company’s proprietary ABG Cool-Tech™ aging technique.

“Aged black garlic develops a distinctive sweet flavour during aging, while losing its typical garlic flavour and aroma due to allicin degradation,” explains Daniel Gonzalez-Hedström, Ph.D., Senior Scientific Researcher for Pharmactive. “This allows it to be easily included in various formulations, easily masking with fruit or other flavours any slight garlic notes that might remain.”

“Response for this ingredient has been amazing due to its demonstrated capacity to help reduce cardiovascular risk factors, per a recent clinical study,” explains Gonzalez-Hedström. “Consumers are determined to get more benefits from foods instead of pills. ABG+ is a ‘two-in-one’ ingredient that can help achieve this goal through innovative and preferred delivery systems, such as functional gummies. It is highly suitable for either gelatin- or pectin-based formats.” The company recommends blending its ingredients with fruits flavours such as blackberries, raspberries, blueberries, or strawberries.

Innova Market Insights reports that over the first eight months of 2021, one-quarter of vitamin



and mineral launches were gummies. Gummies have experienced double-digit growth in launches, represented by a CAGR of 16% from 2016-2020. Meanwhile, tablets and soft gels declined by a CAGR of 8% and 12%, respectively. According to Innova’s 2019 trends survey (conducted in the UK, Spain, France, and Germany), younger generations prefer gummies and functional foods and beverages to traditional supplement formats.

ABG+’s primary active ingredient—S-allyl cysteine (SAC)—is relatively stable, allowing it to be incorporated during the mixing stage of gummy ingredients, just before setting. This ensures that each gummy will contain a precise portion of the 250mg recommended daily dose. Pharmactive Biotech offers different versions of ABG+ to perfectly adapt to specific formulations. These include different concentrations and formats: ABG+10®, ABG+10® organic, and ABG+25+®. ABG+ has EFSA-pending claims for cardiovascular health, cholesterol, immunology, and antioxidant properties. The low daily dose of 250mg per day for ABG10+ allows it to be successfully combined with various ingredients in multiple formulations, especially those ingredients that can provide complementary mechanisms of action for the desired category.

“For example, now that the dosage of red rice yeast—which helps regulate cholesterol levels—is limited and losing its approved EFSA claims, product makers can combine it with ABG+ to help maintain blood pressure levels,” notes Alberto Espinel, Ph.D., head of R&D for Pharmactive. “This makes it possible to design a final product that can support the mitigation of several risk factors to help maintain cardiovascular health. The Pharmactive team currently is working on several functional food and beverage applications that will be ideal for this pure, sustainable ingredient.”

[www.pharmactive.eu](http://www.pharmactive.eu)

# RAPS: New Magic Marinades bring variety to the barbecue

RAPS is expanding its product range for the coming barbecue season with two new palm-free Magic Marinades. The pure oil marinades convince with an authentic taste, easy handling and versatile application options for meat, fish, vegetables and cheese.

To formulate its new marinades, spice expert RAPS has embraced unusual flavours, additive-free recipes and the power of superfoods: “Magic Meadow Herbs” provides a fresh aromatic flavour and combines nettle, sage, mint and garden cress with lemon oil and butter notes. Hemp as a superfood plays the leading role in “Magic Honey-Hemp” and piques curiosity among consumers. Lemon oil and roasted sesame oil support the spicy, nutty

flavour and blossom honey rounds off the taste experience.

RAPS has perfectly matched both Magic Marinades to the most popular types of meat for barbecuing: pork, beef, lamb and poultry. At the same time, the marinades also enhance the taste of fish, cheese or vegetables, thus fulfilling the desire for variety and the growing interest in meat alternatives to grill.

The selected herbs and spices distribute themselves homogeneously throughout the oil marinades so that marinated grilled specialties shine wonderfully and convince with an appetizing appearance in the counter. In addition, the Magic Marinades protect pieces of meat from juicing.



# Probi’s upcycled fermentation broth becomes the basis of a new skin care product



Symrise’s by-product from Probi’s manufacturing of probiotic dietary supplements is used in a new skin care product to be launched by Symrise in April 2022. This new skin care business opportunity also provides other benefits for Probi®. By upcycling valuable fermentation media from probiotic fermentation, we improve both production profitability and reduce our environmental footprint, while commercializing a new ingredient.

Probi has for a long time worked closely with Symrise in various areas which has now resulted in a new skin care ingredient. SymFerment® is a moisturizing active ingredient based on Probi’s profound expertise in probiotics. Symrise’s plan is to present the ingredient at the in-cosmetic Global trade fair in Paris in April 2022. The companies have jointly developed the ingredient, which is based on a by-product from Probi’s production of probiotic dietary supplements. Probi has a turn-key supply commitment, from the extraction of the by-product that is derived from the fermentation of *Lactiplantibacillus* (*Lactobacillus*), to the finished format delivered to Symrise.

“By using a by-product from our regular production, our waste is upcycled and processed into new products. Part of the amount of water we use in production can therefore be reused. This is not only good for our gross margins in production but for use of resources in terms of water consumption,” says Andy McShea, Chief Operating Officer, Probi.

The field of probiotics has grown dramatically and the impacts of probiotics on skin are proven as the skin microbiome has become a major field of scientific endeavor.

“Consumers are increasingly asking for sustainable cosmetic products,” says Léa Schmidt, Global Product Manager at Symrise. “That’s why sustainability always forms the heart of our product development efforts. Thanks to the partnership with Probi, we can use valuable by-products from the production of probiotics to create effective ingredients such as SymFerment®.”

“This is completely in line with our ambition to find new application areas in probiotics with the added benefit of reducing our environmental footprint. We see potential to develop this business further,” says Tom Rönnlund, CEO of Probi.

[www.probi.com](http://www.probi.com)

# J.O. Sims, have launched natural no added sugar fruit pastes

**J**.O. Sims, the fruit experts, continue to innovate their product offering in a bid to help food manufacturers reduce the use of refined sugars by offering a natural no added sugar alternative in the form of fruit paste.

J.O. Sims has launched NEW Date & Raisin pastes. The fruit pastes are full of flavour with natural fruity sweetness and provide a great base to add other flavours to. The pastes smooth texture and rich intense colour make them a great fit for food products such as energy balls, cereal and snack bars, bakery goods and sauces and



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pickles. They also function as a binder for granolas or as a filling in breakfast cereals and baked goods.

Jacqui Fairey, Ingredients Commercial Director at J.O. Sims comments on this latest product innovation "here at J.O. Sims we are extremely excited by the launch of our new Date & Raisin pastes. As a long-term supplier of fruit, nut and seeds to well-known food manufacturers and retailers in the UK, we've spotted the trend towards reducing refined sugar and using natural ingredients." Jacqui added "We see lots of growth for the future of our ingredients business, as the addition of these pastes further extends our portfolio of innovative ingredients, which we hope demonstrates our commitment to continue to lead the field in creating food solutions."

Lawrence Brackstone, Head of Food for J.O. Sims talks about his passion for developing new products with these latest ingredients "Our Date & Raisin pastes are innovative products that will help manufacturers to develop new and adapt existing products to perform better. There are so many opportunities for new product development with them! I look forward to working with our customers and bringing exciting products to the market with our new fruit pastes."

[www.josims.com](http://www.josims.com)



## MartinBauer adds US grown and processed Echinacea to product portfolio

**M**artinBauer, a leading manufacturer of tea and botanical ingredients for the food, beverage, and dietary supplement/health and wellness industries, has announced the addition of US grown and processed Echinacea purpurea to its product portfolio. This addition complements the MartinBauer botanical strategy of expanding our current product offering into our US farm partners.

"MartinBauer is pleased to expand and offer new and future crops through our network of local farms throughout North America," said George Pontiakos, Chief Operations Officer at MartinBauer. "In doing so, we are offering our customers new options for sourcing premium botanical ingredients right here in the US."

Farmed and naturally dried in the Pacific Northwest, MartinBauer carefully manages the echinacea production through its agricultural arm based in Oregon and in close cooperation with our long-term partner farms. Our experts, who specialize in local agriculture and raw material specifics, have incorporated an Integrated Pest Management Plan for this pollinator-friendly crop. The Plan protects and sustains the native insects and soil health, while still meeting strict quality requirements.

"Each new product we offer, like the Echinacea purpurea, benefits from our years of hands on experience out in the fields working alongside our growers," noted Pontiakos. "MartinBauer is committed to meeting the highest global raw material standards in the world through transparent and sustainable management practices."

[www.martin-bauer.com/en](http://www.martin-bauer.com/en)

## Florida Food Products launches new collection of cocoa flavors

**F**lorida Food Products (FFP), a leading innovator, formulator and producer of vegetable and fruit-based clean label ingredient solutions and flavors, has recently launched a new collection of cocoa flavors.

Chocolate is universally loved by Americans and often associated with bringing joy and happiness to consumers of all ages. It presents an incredible opportunity for confectioners and food manufacturers alike to capture product sales as it is estimated that Americans consume 2.8 billion pounds of chocolate each year—an equivalent of eleven pounds per person!

"Our new 'Box of Chocolates' cocoa flavor collection has been an exciting endeavor now that Comax Flavors is a part of FFP" said Shellie Kramer, Senior Marketing Manager, FFP. "New product launches with chocolate and cocoa flavors continue to grow as many consumers seek nostalgic flavors in their food and beverages for a taste of comfort and indulgence. We can't think of a more noteworthy place to share this new collection of chocolatey cocoa flavors with the industry than the Diamond Anniversary PMCA Conference."

FFP is known for its commitment to real, simple and better ingredients, creating this range of customized flavors and clean label solutions to help manufacturers deliver the premium taste profiles consumers demand. The new collection of six sweet and chocolatey natural cocoa WONF flavors include:

White chocolate cocoa—a dairy-forward cocoa flavor with notes of sweet vanilla and creamy, buttery caramel

Dark bitter cocoa—an intense chocolate, lightly sweet with delicate fruity and floral nuances with a



slightly bitter aftertaste

Belgian cocoa—a medium sweet, rich, buttery fudge-like character with hints of honey and malt

Cocoa berry—a strong chocolate flavor blended with a sweet mélange of red and blue berries

Coffee cocoa—a semi-sweet dark, nutty and fruity chocolate balanced with rich roasted coffee

Mayan cocoa—a dark sweet cocoa accented by warm cinnamon and vanilla with undertones of honey and a touch of heat.

These tasty flavors are available in natural, liquid, non-GMO, allergen-free and water-soluble versions. Confectioners and food manufacturers can utilize this delicate collection in a variety of applications including:

- Chocolates and confections
- Baked goods
- Nutritional products
- Syrups and sauces
- Non-alcoholic and alcoholic beverages
- Dairy products
- Plant-based products

[www.floridafood.com](http://www.floridafood.com)

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[terryprior@innovationsfood.com](mailto:terryprior@innovationsfood.com)



# Real-life scientific study demonstrates BENEÓ's ingredients suit a personalised nutrition approach

**A RECENTLY PUBLISHED STUDY<sup>1</sup>** conducted by Perfood GmbH, Germany, in collaboration with the University of Lübeck, Germany, demonstrates that BENEÓ ingredients support a personalised nutrition approach. BENEÓ's first citizen science study conducted under real-life conditions further confirms the health benefits of BENEÓ's slow-release carbohydrate Palatinose™ and the prebiotic fibre Orafiti®Synergy1<sup>2</sup>. The results show that both ingredients improve blood glucose control and that the latter also beneficially modulates gut microbiota through a significant increase in beneficial bifidobacteria.

This is the first study of its kind to investigate the effects of a BENEÓ diet combining Palatinose™ and Orafiti®Synergy1 in healthy adults in a real-life situation using the citizen science approach. Instead of controlled conditions where all participants eat and drink in a strict and well-controlled manner during the trial, participants in this study consumed BENEÓ's ingredients in addition to their normal diet. The effects observed were robust even in such a very heterogeneous population and not overruled by the habitual diet and usual lifestyle.

Two dietary interventions were included in the study, targeting the support of blood glucose management, as well as the gut microbiota by increasing the beneficial bacteria (Bifidobacteria). The participants took part in a test phase over 14 days during which, in addition to the habitual diets, over three days they consumed drinks with either 30 g sucrose or 30 g Palatinose™ twice a day (for breakfast and lunch together with the habitual meal). Orafiti®Synergy1 (10g/d) was added to their usual dinner for 11 days. Continuous blood glucose monitoring (CGM) was applied to evaluate the blood glucose response throughout, with stool samples collected at the beginning and end of the test



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phase and analysed using a gut microbiome RNA sequencing technique to measure the compositional changes of the gut microbiota.

The findings highlight the added value of BENEÓ's ingredients for everyday life through various applications. When added to the individual diet, beneficial effects that were previously shown in controlled clinical studies could also be demonstrated in an habitual diet situation. In comparison to sucrose, Palatinose™ showed a lower blood glucose response, a lower and more balanced blood glucose profile for the day, plus a slow release and sustained glucose supply. The positive effects of Orafiti®Synergy1 supplementation were also demonstrated in this real-life situation through a significant increase in beneficial bifidobacteria and a significant decrease in glycaemic variability over time. The decrease in glycaemic variability over time was irrespective of the carbohydrate consumed and therefore is a beneficial effect that can be regarded as synergistic to the Palatinose™ related effects on blood glucose management. These latest findings demonstrate that the combination of Palatinose™ and Orafiti®Synergy1, independently of each other, supports blood glucose management for improved metabolic health. Therefore, incorporating these

functional ingredients as part of a healthy diet can improve the diet quality, also in the context of personalised nutrition, and contribute to overall better health.

Anke Sentko, Vice President Regulatory Affairs & Nutrition Communication at BENEÓ comments, "For the first time, the health benefits of our ingredients that have already been proven in numerous clinical studies under controlled circumstances, are now confirmed in complex real-life situations. These recent study results show that food choices matter and demonstrate how functional ingredients can help to support health. The study design also demonstrates that both BENEÓ's Palatinose™ and Orafiti®Synergy1 deliver health benefits in the context of personalised nutrition by addressing individual dietary needs, a diet approach that is appreciated by more and more consumers when it comes to topics such as weight management and ensuring a healthy body and mind.

"Furthermore, the demonstration of the synergetic effect of the two ingredients related to the decrease in glycaemic variability over time was particularly exciting for us: it finally confirms that microbiota composition and blood sugar management are closely interrelated. Therefore BENEÓ's functional ingredients Palatinose™ and Orafiti®Synergy1 offer a holistic approach."

## References:

1 Kordowski A, Künstner A, Schweitzer L, Theis S, Schröder T, Busch H, Sina C, Smollich M (2022) Palatinose™ (Isomaltulose) and Prebiotic Inulin-Type Fructans Have Beneficial Effects on Glycemic Response and Gut Microbiota Composition in Healthy Volunteers - A Real-Life, Retrospective Study of a Cohort That Participated in a Digital Nutrition Program. *Frontiers in Nutrition* 9. DOI: 10.3389/fnut.2022.829933, published 07 March 2022. Link: <https://www.frontiersin.org/article/10.3389/fnut.2022.829933>

2 Orafiti®Synergy1 is an oligofructose inulin combination containing shorter chain inulin (oligofructose DP < 10) and longer chain inulin (inulin DP ≥ 10) in an approximate 50:50 ratio ± 10% each. Beneo Orafiti, Tienen, Belgium

## NEW approved Canadian claim: *L. paracasei* HA-196 helps support healthy bowel habits in adults with IBS

**LALLEMAND HEALTH SOLUTIONS** has gained new indication for its probiotic strain *L. paracasei* HA-196 from Health Canada recognizing its beneficial effects to help support healthy bowel habits in adults with irritable bowel symptoms (IBS), at a daily dose 10B CFU.

### Positive results on quality of life and frequency of bowel movements

This claim is an outcome of recent findings in the gut health area, where *L. paracasei* HA-196 participated in maintaining a good quality of life in populations with IBS (Lewis, 2020). This randomized, double-blind, placebo-controlled study performed on 251 North American adults with different IBS subtypes, demonstrated the efficacy of

*L. paracasei* HA-196 to:

- Support quality of life: emotional well-being and social functioning.
- Reduce frequency of bowel movements in IBS-D participants (-21% of spontaneous bowel movement (SBM)) after 8-week intake.
- Increase bowel frequency in IBS-C participants (+33% of SBM) after 8-week intake.

"Another achievement in the documentation of our strains being acknowledged" proudly affirms Solange Henoud, Global Regulatory Affairs Director. "This is the sum of consistent efforts, constant support, and commitment from the Regulatory Affairs, Marketing, Clinical and Scientific Affairs teams", she adds.

Moreover, *L. paracasei* HA-196 has also been

selected for its complementary action with Biotis™ GOS to create a new bowel support concept. Lallemand Health Solutions and FrieslandCampina Ingredients have recently joined forces to launch best-in-class gut health products combining pre- and probiotics. PRO-Digest Bowel Support has been specifically designed to promote digestive comfort and improve the day-to-day lives of consumers with occasional digestive disturbances. The product contains 10 billion cfu of *L. paracasei* HA-196 as the research shows improvement of quality of life and a healthier bowel frequency in adults with IBS/IBS-like feelings or events such as occasional diarrhea.

[www.lallemand.com](http://www.lallemand.com)

# New HMO study paves the way for developing next-generation infant formula

**LARGEST DATA SET TO DATE** highlights the wide distribution of natural concentrations of human milk oligosaccharides and confirms the safety of intake even at high concentrations

HMOs — important groups of carbohydrates in human breast milk — can, in some cases, be secreted in very high concentrations, and still be safe and well-tolerated by infants.

This is the conclusion of a new study by global bioscience leader Chr. Hansen, published in *Food and Chemical Toxicology*. The systematic review compiles data from several dozens of observational peer-reviewed studies for the five most prevalent HMOs in breast milk. It presents the largest data set analyzed to date and provides state-of-the-art information to support the appropriate and safe levels of HMO supplementation in infant formula.

Whereas studies have so far focused on the quantitation of HMOs in human milk, this review determines the natural concentrations of HMOs. The concentration levels vary depending on the mother's health and genetics, environmental and geographical factors, gestational age (pregnancy progression) and lactation stage. The objective of the new study was to provide a clearer perspective on natural HMO concentrations and distribution in breast milk, as this is important to develop next-generation infant formula products with an HMO composition that is closer to breast milk.

## Closer to nature and respecting natural variations

"Breastfeeding is the best way to ensure infant health and recommended by WHO. At Chr. Hansen, we further aim to support the healthy development of infants that cannot be breastfed by providing HMOs as an ingredient and blend for infant formula. We are excited to publish this study of the five most prevalent HMOs in breast milk, which are all included in Chr. Hansen's 5 HMO Mix in concentrations closer to nature and respecting the natural variations,"

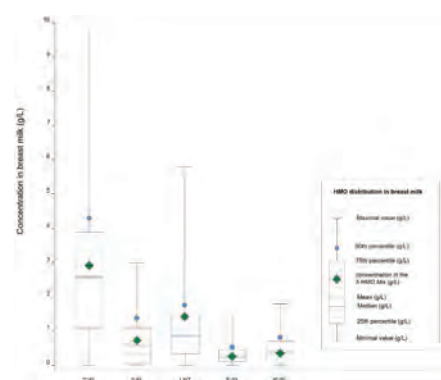
says Jesper Sig Mathiasen, senior vice president, Chr. Hansen HMO.

"The study presents important statistical data to help support the level of appropriate HMO supplementation in infant formula and confirms the safety of intake at concentrations higher than average. We see it as yet another testimony to our HMO offering," he notes.

## Conclusions of the study

Out of over 150 HMOs identified in human breastmilk, the five most prevalent and best studied HMOs are 2'-fucosyllactose (2'-FL), 3-fucosyllactose (3-FL), Lacto-N-tetraose (LNT), 3'-sialyllactose (3'-SL), and 6'-sialyllactose (6'-SL).

Results show a wide distribution of HMO concentrations in breast milk, ranging up to as much as 10 g/L for the most prevalent one,



2'-fucosyllactose (2'-FL). Please see figure 1.

Fig. 1: HMO distribution in breast milk (adapted from Parschat et al., 2022)

The safety, tolerability, and health benefits of Chr. Hansen's 5 HMO-mix have already been



demonstrated in previous scientific studies<sup>1</sup>. Infants fed infant formula containing the 5 HMO-mix demonstrated similar digestive parameters and stooling patterns as breastfed infants.

Developed in 2019, Chr. Hansen's 5 HMO Mix is already commercially available in North America, with approvals pending in Europe, Asia, and Latin America.

## What is HMO?

Human Milk Oligosaccharides (HMOs) are the third most abundant component found in breast milk. They are one of several important components through which breastfeeding is explained to be gold standard for infant nutrition. Latest research shows that HMOs contribute to breastfeeding-mediated benefits, such as supporting the immune system, and healthy brain development. Also, HMOs are indicated to support gut maturation and resilience, as well as promotion of a balanced gut microbiome.

## Breastfeeding is best

Chr. Hansen supports the recommendation of the World Health Organization (WHO) towards breastfeeding exclusively for the first six months, followed by continued breastfeeding together with complementary foods.

## Reference:

<sup>1</sup> Parschat, K., Melsaether, C., Jäpelt, K. R., & Jennewein, S. (2021). Clinical evaluation of 16-week supplementation with 5HMO-Mix in healthy-term human infants to determine tolerability, safety, and effect on growth. *Nutrients*, 13(8), 2871.

# Curcuwin Ultra+ bioavailability science published in advances in therapy, presented at Experimental Biology

**CURCUWIN ULTRA+**, OmniActive Health Technologies' latest addition to the company's branded, highly bioavailable curcumin portfolio, was the subject of new science with the publication of "Superior Bioavailability of a Novel Curcumin Formulation in Healthy Humans Under Fasting Conditions" in *Advances in Therapy*. The study will also be presented during this year's Experimental Biology (EB) meeting in Philadelphia, PA, from April 2-5.

"OmniActive continues to champion innovation and invest in science for the betterment of human nutrition," said Deshanie Rai, PhD, FACN, VP, Global Scientific and Regulatory Affairs at OmniActive. "Having our data selected to be presented at the prestigious EB meeting and accepted for publication in the well-respected peer-reviewed journal *Advances in Therapy* speaks to the strength

and relevance of this new science."

In an acute dose, randomized, double-blind, three treatment, crossover oral bioavailability study involving 24 healthy male and female volunteers between 18 and 55 years, subjects received a single dose of Curcuwin Ultra+ 250 mg, Curcuwin Ultra+ 500 mg and 1800 mg of a 95% turmeric extract. The study showed that 250 mg Curcuwin Ultra+ was 144x more bioavailable compared to standard curcumin. In other words, this translates to one capsule containing 250 mg of Curcuwin Ultra+ being equal to 30 capsules containing the standard 95% curcumin extract. Curcuwin Ultra+ was also shown to absorb 40% faster than standard curcumin.

Curcuwin Ultra+ was developed by OmniActive to bring a clinically studied, highly bioavailable lower dose curcumin aimed at supporting joint and



general health benefits for on-the-go lifestyles. Curcuwin Ultra+, which will be commercially available midyear, was first introduced at SupplySide West 2021 and was a well-received innovation in the curcumin space. Those interested in discussing Curcuwin Ultra+ are welcome to contact us at [info@omniactives.com](mailto:info@omniactives.com).



## Trial testing cocoa flavanol supplement shows promise for reducing cardiovascular risk

**THE FIRST LARGE-SCALE** trial to test the long-term effects of a cocoa flavanol supplement to prevent cardiovascular disease offers promising signals that cocoa flavanols could have protective cardiovascular effects. In papers published in *The American Journal of Clinical Nutrition*, a team led by Howard Sesso, ScD, MPH, and JoAnn Manson, MD, DrPH, both of the Division of Preventive Medicine at Brigham and Women's Hospital, unpacks the main outcomes of the COcoa Supplement and Multivitamin Outcomes Study (COSMOS), a randomized, placebo-controlled trial that tested a cocoa flavanol supplement and a multivitamin in the prevention of cardiovascular disease and cancer. While neither supplement significantly reduced the primary outcome of total cardiovascular events, people randomized to receive the cocoa flavanol supplement had a 27 percent lower rate of cardiovascular death, a pre-specified secondary endpoint.

"When we look at the totality of evidence for both the primary and secondary cardiovascular endpoints in COSMOS, we see promising signals that a cocoa flavanol supplement may reduce important cardiovascular events, including death from cardiovascular disease," said Sesso. "These findings merit further investigation to better understand the effects of cocoa flavanols on cardiovascular health."

"Previous studies have suggested health benefits of flavanols — compounds in several plant-based foods including cocoa, tea, grapes, and berries," said Manson. "COSMOS was not a chocolate trial — rather, it's a rigorous trial of a cocoa extract supplement that contains levels of cocoa flavanols that a person could never realistically consume from chocolate without adding excessive calories, fat, and sugar to their diet."

Smaller, short-term trials have found cardio-

vascular benefits for cocoa flavanols on blood pressure and blood vessel dilation. COSMOS offered the first opportunity to study if a cocoa flavanol supplement might also lead to longer-term reductions in clinical cardiovascular events. Investigators also looked for reductions in risk of cancer. In addition, the trial was designed to test a common multivitamin in the prevention of cancer and cardiovascular disease.

The primary cardiovascular outcome for the cocoa flavanol intervention was a composite of total cardiovascular events, including heart attacks, stroke, coronary revascularization, cardiovascular death, carotid artery disease, peripheral artery surgery, and unstable angina. More than 21,000 participants were randomized to take daily capsules that contained 500 mg cocoa flavanols (donated by Mars Edge), a multivitamin tablet (donated by GSK Consumer Healthcare), neither or both.

The study found that cocoa flavanols reduced total cardiovascular events by 10 percent, but this was not statistically significant. However, several secondary analyses provided broader support for a potential benefit of cocoa flavanols on cardiovascular events. First, those receiving the cocoa flavanol supplement had a significant 27% reduction in death from cardiovascular disease. Second, when the study team took adherence to study pills into account (by looking at those taking their study pills regularly), the team saw a stronger, 15% reduction in total cardiovascular events and a 39% reduction in death from cardiovascular disease. Third, a composite endpoint of major cardiovascular events (heart attacks, strokes, and cardiovascular deaths), although not a trial focus, was also significantly reduced. The authors note in their report that their promising results on cocoa

flavanols and cardiovascular events warrant cautious interpretation and underscore the need for additional research.

A daily multivitamin had no significant effect on total or individual cardiovascular events. There were no safety concerns for either cocoa flavanols or a multivitamin.

COSMOS concluded after about 3.6 years, which was likely too short to detect whether the supplements could have affected cancer risk. Although a daily multivitamin improved levels of several nutritional biomarkers, it had no significant effect on total invasive cancer, the primary outcome for the multivitamin analyses. Cocoa flavanols also had no significant effect on total invasive cancer. The authors note that continuing to follow COSMOS participants may help to clarify any longer-term effects on cancer and death. The investigators and collaborators are also leveraging COSMOS to study cognitive decline, falls, eye disease, and other aging-related outcomes that may be influenced by the supplements.

"Although our study suggests intriguing signals for cardiovascular protection with cocoa flavanols, any health benefits due to taking these supplements will need confirmation in a future trial," said Manson. Adds Sesso: "Our message for consumers is to eat a healthy, balanced diet, rich in natural food sources of flavanols, and to stay tuned as we further evaluate other important health outcomes in COSMOS."

Papers cited:

Sesso HD, Manson JE, et al. "Effect of Cocoa Flavanol Supplementation for Prevention of Cardiovascular Disease Events: The COSMOS Randomized Clinical Trial" *The American Journal of Clinical Nutrition* DOI: 10.1093/ajcn/nqac055

Sesso HD, Rist PM, et al. "Multivitamins in the Prevention of Cancer and Cardiovascular Disease: The COSMOS Randomized Clinical Trial" *The American Journal of Clinical Nutrition* DOI: 10.1093/ajcn/nqac056

## Lasting beauty results: Lycored's Lumenato™ passes the consumer test

**LUMENATO™, LYCORED'S** golden-tomato-based wellness extract, delivers beauty results that are still noticeable weeks after supplementation has ended, a study has shown.

The two-stage study, published in the *Journal of Cosmetic Dermatology*, set out to evaluate Lumenato's bioavailability, and its effectiveness as assessed by consumers.

In the first stage, 24 healthy volunteers supplemented with Lumenato for four weeks. The researchers observed an almost fourfold increase in levels of phytoene after the first week, and by the fourth it had reached almost five times the baseline level. There were also significant increases in levels of other carotenoids, such as phytofluene and zeta-carotene, indicating Lumenato's high bioavailability.

In the second stage, 63 women aged between 35 and 55 took Lumenato for 12 weeks. They completed questionnaires that assessed different skin parameters at weeks four, eight and 12, and again two weeks after the trial had finished.

After 12 weeks of supplementing with Lumenato, participants reported significant improvements in skin hydration, firmness, brightness, tone and overall condition. They also reported reductions in dark spots and circles, fine lines and wrinkles.

Interestingly, assessment of these parameters continued to improve after treatment had ended. For example, at baseline, 19% of participants said their facial skin looked attractive. Twelve weeks after supplementing with Lumenato, this had increased to 65%, and two weeks after the trial, it had reached 69%.

Elizabeth Tarshish, Head Of Clinical Affairs, Claims Development at Lycored, was one of the authors of the study. Commenting on the findings, she said: "There are many ways to measure the effectiveness of products for the skin, but ultimately it's the experience of consumers that matters. We were delighted that the people taking part in this trial reported such clear results from Lumenato, and that they continued to notice them even after



supplementation had ended. It's exciting to see consumers noticing that kind of lasting effect, which demonstrates the continuous skin nourishment that carotenoids can provide."

The research was highlighted at the recent SupplySide East. As official pedicab sponsor at the event, Lycored is offering visitors complimentary transport to and from their accommodation — and an opportunity to feel the wind in their hair in Lumenato-themed vehicles.

Notes

Notes: Tarshish E, Hermoni K, Sharoni Y, Muizzuddin N. "Effect of Lumenato oral supplementation on plasma carotenoid levels and improvement of visual and experiential skin attributes" *J Cosmet Dermatol*. 2022, Jan 12

<https://onlinelibrary.wiley.com/doi/10.1111/jocd.14724>

# Natural botanical solution for stress and sleep: RelaxPLX

**MENTAL HEALTH IS A** matter of increased concern lately, where our hectic lifestyle and the consequences of the current pandemic has taken a real toll. This has caused a global rise of stress, which is a natural part of life, but when it prolongs in time it can have negative consequences on our health, giving rise to depression, drug abuse, cardiovascular disease, worker burnout and sleep disorders. In fact, recent studies have shown that all these conditions have risen dramatically, affecting all aspects of our daily lives.

Regarding sleep and stress, these two conditions commonly occur together. When someone is continuously stressed, this eventually affects their quality of sleep. Therefore, whenever an individual looks for solutions for low sleep quality, it is important to understand the origin of this condition, and if stress is the cause, then it must be treated together or before treating sleep.

There are many synthetic drugs to help treat sleep and stress, mainly in the form of antidepressants and barbiturates. Unfortunately, they come at a high cost, both financially as well as physically, as the majority have important side effects and cause dependency. Therefore, there is a growing demand for natural solutions, and thankfully this can be found in a number of plants. One of these plants is the lemon verbena or lemon beebrush (*Lippia citriodora*, also known as *Aloysia citriodora*). This plant native of South America was brought to Europe during the XVth century, where since then has found a home in the Mediterranean region and Middle East. Lemon verbena leaves are traditionally used in teas and beverages both for its taste as well as its attributed health properties. These include treating fever, digestive discomfort, antimicrobial effect, as well as insomnia and anxiety.

The lemon verbena leaves are rich in polyphenols, being verbascoside one of its most abundant. Verbascoside, also known as acteoside, can be found in several medicinal plants besides lemon verbena, including common vervain (*Verbena officinalis*) and olive (*Olea europae*). It is a phenylpropanoid with demonstrated antimicrobial, antioxidant and anti-inflammatory properties. Furthermore, studies have shown that verbascoside is capable of promoting sleep and alleviating anxiety in mice. The mechanism by which it exerts this effect seems to reside in the binding of verbascoside to neural GABA-A receptors. GABA-A receptors respond to GABA (gamma-aminobutyric acid) binding, which is a major inhibitory neurotransmitter in the nervous system. GABA can also be found as a dietary supplement to promote stress relief.

Certain drugs such as benzodiazepines bind to the same receptor, which are generally used to reduce anxiety and promote sleep. Verbascoside binds to the same sites as benzodiazepines, thereby conferring a similar effect.

Despite its well-known traditional properties, few studies have been performed to clinically demonstrate lemon verbena's effects on promoting relaxation and sleep. Also, the few studies that exist generally use patient questionnaires to validate the effects, which can possess a certain level of subjectiveness. Therefore, we have developed a highly-purified lemon verbena extract standardized in verbascoside called RelaxPLX. This extract was analyzed clinically on subjects with high levels of perceived stress and low sleep quality.

A double-blind, placebo-controlled study was designed. The subjects were instructed to take 1 capsule per day, 1-2 hours before sleeping. Each capsule contained 400 mg of either the placebo or RelaxPLX. The study lasted 8 weeks, with data inputs at the beginning of the study, at 4 weeks and the end. The novelty of the study resides on the use of both validated questionnaires and biomarkers to confirm and corroborate the effect of the ingredient. For stress assessment, subjects were given a validated questionnaire and cortisol was assessed. Cortisol is known as the stress hormone, and high levels in blood or saliva generally indicates a high level of stress. As for sleep quality, again a validated questionnaire was used, and activity trackers were provided to the subjects to be worn during the first, fourth and eighth week of the study. These activity trackers are capable of measuring the amount of time the user is asleep, as well as the number of times they awake during the night, as well as the duration in the different sleep stages. Finally, another novelty in this study was that both questionnaires for sleep and stress were filled out by the subjects one month after the study, to discern if RelaxPLX could have an everlasting effect.

With respect to stress, the study demonstrated that the subjects taking RelaxPLX perceived less stress throughout time, with more noticeable effects after 2 months of intake. Surprisingly, their stress levels further decreased after the washout period, confirming that the ingredient's effect could still be noticed for some time after stopping its intake. Regarding cortisol levels, this hormone decreased in the first month of intake, and dropped further still in the second month, confirming the perceived reduction of stress by the subjects taking RelaxPLX.

Regarding sleep, again we performed a vali-



dated questionnaire and analyzed sleep quality using activity trackers. In the questionnaire, we observed that the subjects perceived an improved quality of sleep starting at the first month of treatment, which continued improving up the end of the study. Also, as it occurred in the stress analysis, a further improvement was perceived after the washout period. Surprisingly, a stronger effect was observed in women, who perceived a significant improvement even in the first month of intake.

As for the activity tracker data, the most relevant differences detected were in the quality of sleep, but not quantity. In this context, those taking relaxPLX had fewer awakenings in the night, and improved their time in the deeper stages of sleep, particularly deep sleep and REM. Deep sleep is the stage where our physical recovery occurs, whereas REM is where our mental recovery begins, so improving these parameters allow for a stronger recovery, allowing the subjects to feel more refreshed and well rested.

In the end, what this translates to is that the consumers taking RelaxPLX feel less stressed during the day, and have better quality of sleep at night. Unlike other extracts or drugs, RelaxPLX is not a sleep inducer, so it does not have the negative effect of feeling sleepy during the day.

There are numerous benefits for choosing RelaxPLX in sleep and stress formulas. First of all, it presents a lower daily dosage compared to other botanicals with similar effects, allowing for easier formulation. Compared to other lemon verbena extracts in the market, it can be observed that RelaxPLX has the highest polyphenolic content, and is one of the most scientifically validated ingredients. Furthermore, there are two pending health claims in Europe for the benefits of lemon verbena in alleviating stress and improving sleep quality.

Regarding formulation possibilities, besides its low daily dosage, another advantage of RelaxPLX is that it is completely water soluble, and stable in many temperatures and formats. This allows to be included into many delivery formats, from capsules to tablets, gels, jellies, drinks and more.

Published study: <https://www.mdpi.com/2072-6643/14/1/218>

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# Newly published data demonstrates potential of AB-Biotics probiotic strains in infant gastrointestinal disorders (FGIDs)

**NEWLY PUBLISHED DATA IN** *Frontiers in Microbiology*<sup>1</sup> reveals the potential of AB-Biotics' probiotic strains formula in infants with functional disorders (FGIDs), including a role in reducing colic and functional constipation severity. These latest findings add to the growing bank of research demonstrating AB-Biotics' probiotic strains as an effective and safe probiotic combination for gut health innovation in the infant nutrition space.

FGIDs are brain-gut interaction disorders, comprising regurgitation, infant colic and functional constipation. At present, there are few effective ways to improve of FGIDs in infants, and there is limited and conflicting evidence demonstrating the mechanisms, safety and health benefits of probiotics in this field. The study in *Frontiers in Microbiology* was designed to investigate the potential of AB-Biotics' probiotic strains a special blend of two probiotic strains – *Bifidobacterium longum* KABP042 and *Pediococcus pentosaceus* KABP041 – in pediatric FGID. The research revealed several key findings related to the strains' mechanism of action and role in gut health:

1 The strains efficiently adhere to human intestinal epithelium through multiple mechanisms

The formula synergistically protects the intestinal barrier by regulating the expression of tight junction proteins, which are essential for the

maintenance of barrier integrity

Both strains demonstrate broad pathogen inhibition capacity via the production of organic acids and antimicrobials.

In a separate observational pilot trial, the formula's safety, tolerability and efficacy in babies with infant colic and functional constipation was tested too. The study – which involved 36 infants in total – concluded that a daily dose of AB-Biotics' probiotic strains for 14 days was safe and effective at reducing the severity of FGIDs, helping to decrease colic and constipation symptoms. Moreover, the efficacy of AB-Biotics' probiotic strains was independent of feeding type (breastfed or formula), mode of birth delivery or use of other medications; unlike other probiotic solutions in the market which are only effective in breastfed infants.

The research adds to an increasing bank of science exploring the safety and benefits of AB-Biotics' probiotic strains in babies. This includes recently published clinical data in *Frontiers in Pediatrics*<sup>2</sup> which concluded that the probiotic formula was an effective solution for the prevention and management of infant colic. In addition, although most of the research to date has explored the role of the strains in combination, *Pediococcus pentosaceus* KABP041 has exhibited a promising role in intestinal inflammation in isolation too.

Sergi Audivert Brugue, Executive Director, AB-Biotics comments: "Growing evidence demonstrates the important role of probiotics during the first 1,000 days – that is from the moment a child is conceived until they have reached two years of age (24 months). The benefits of probiotics in gut health, especially, is gaining rising interest in the infant nutrition space, including their potential role in FGIDs, a condition which causes significant discomfort in infants and distress for parents. The new clinical evidence published in the *Frontier journal* is an exciting step forward for innovation in the field, which we hope can be translated into novel probiotic solutions targeted towards gut health-related issues, such as FGID, one day."

AB-Biotics' probiotic strains formula is easy to use; 100% natural and safe; of human origin; and specially designed for infant gut health. Also, the strains in the AB-Biotics' probiotic formula are isolated from healthy infants, not adults or other mammal sources.

## References:

1 Asto, E, Huedo, P. (2022). Probiotic Properties of *Bifidobacterium longum* KABP042 and *Pediococcus pentosaceus* KABP041 Show Potential to Counteract Functional Gastrointestinal Disorders in an Observational Pilot Trial in Infants. *Frontiers in Microbiology*. <https://doi.org/10.3389/fmicb.2021.741391>

2 Chen, K., Liu, C. (2021). Infantile Colic Treated With *Bifidobacterium longum* CECT7894 and *Pediococcus pentosaceus* CECT8330: A Randomized, Double-Blind, Placebo-Controlled Trial. *Frontiers in Pediatrics*. <https://doi.org/10.3389/fped.2021.635176>

# Roquette study confirms the excellent nutritional quality of its pea protein

**ROQUETTE, A GLOBAL LEADER** in plant-based ingredients and a pioneer of plant proteins, highlights the exceptional properties of peas through the outstanding results of a recent DIAAS (Digestible Indispensable Amino Acid Score) study on its pea protein.

Roquette is the first key player in the pea protein market to use this method, recommended by the FAO (Food and Agriculture Organization) of the United Nations. This study and its associated results represent another major milestone in Roquette's commitment to contribute to the development of a new plant-based cuisine offering high nutritional quality and sustainable food for a healthier planet.

## Exceptional nutritional quality of pea protein...

The nutritional quality of proteins is the combination of two factors that are key in terms of nutrition: the digestibility and the composition in amino acids. The recent study, conducted by the Roquette team in partnership with renowned academic experts from the INRAE, France's National Research Institute for Agriculture, Food and Environment, concluded with a DIAAS score of 100, showing that pea protein offers a balanced amino acid profile and an excellent digestibility that fully

responds to consumers' nutritional needs.

The DIAAS methodology allows the evaluation of the digestibility of each indispensable amino acid in the protein with a very precise protocol implemented in humans. This high-level method is used to complement the notable PDCAAS (Protein Digestibility-Corrected Amino Acid Score) of 93(\*) already obtained for NUTRALYS® pea protein.

## ... supported by Roquette's expertise

Dedicated Roquette R&D teams are evaluating and advancing the benefits of the NUTRALYS® pea protein range thanks to the expertise developed throughout the 20+ years of Roquette's involvement in pea protein. From the outset, Roquette has been collaborating with world-class research teams and shared the results of this impactful DIAAS study with the scientific community. Reputed for offering high-quality ingredients, Roquette wants to support its customers in the development of a healthy and delicious plant-based cuisine.

Caroline Perreau, Nutrition and Health Research Manager at Roquette, explained: "Thanks to high level scientific collaborations with academic experts, we showcase, through the robust DIAAS methodology on humans, the premium nutritional quality of our pea protein. This was another step to share our expertise about pea protein nutritional

benefits."

Jeremy Burks, Senior Vice President of Plant Proteins at Roquette, added: "The result of this study is another piece of evidence that pea protein is an outstanding plant-based ingredient. At Roquette, we aim to be the best partner for our customers and all the players along the value chain, and we are proud to be the first to use this methodology that confirms our strong bet for this extraordinary pulse." Juliane Calvez, Research Scientist at INRAE, said: "In a clinical study on healthy volunteers, we showed that Roquette's pea protein isolate displayed a well-balanced indispensable amino acid composition associated with a high digestibility. We obtained a DIAAS of 100 that demonstrates pea isolate is an excellent source of plant protein for human diet."

Thanks to its strong expertise, ambitious investments, and drive for innovation, Roquette is firmly committed to contributing to the current food revolution by helping people around the world add more plant protein to their diets. Studies highlight the number of plant protein product launches multiplied by 5 between 2014 and 2020, an exceptional growth rate driven by consumers' focus on health, well-being and sustainable development.

(\*) on adults, referring to pattern FAO/WHO 2007

# New Study: Quatrefolic® increases pregnancy potential

**INTERNATIONAL JOURNAL OF** Environmental Research and Public Health has just published a new retrospective study investigating the role of supplementation with vitamin B complex (5-methyltetrahydrofolate as Quatrefolic® from Gnosis by Lesaffre plus vitamins B12 and B6) versus folic acid (FA) on pregnancy outcomes (clinical pregnancy, pregnancy loss, and live birth) in infertile women undergoing Assisted Reproductive Technologies (ART). Results showed that the Quatrefolic® group had a higher chance of clinical pregnancy and live birth than those supplementing with FA alone.

ART represent widely used procedures for the control and treatment of infertility, despite that most procedures remain unsuccessful, and the reason for this lack of success may have a multifactorial origin. Reproductive success is highly influenced by the female pre-conceptional health, including nutrition and micronutrient levels, which may play a pivotal role in this initial phase.

According to the study, "5-Methyltetrahydrofolate and Vitamin B12 Supplementation is Associated with Clinical Pregnancy, and Live Birth in Women Undergoing Assisted Reproductive Technology"<sup>1</sup>, the homocysteine pathway in the preconception period should be evaluated to highlight micronutrient deficiencies and warrants

optimal multivitamin supplementation. This is important for Assisted Reproduction, as FA is considered the standard supplementation for preconception care. The retrospective study aimed at investigating the role of a vitamin B complex (5-methyltetrahydrofolate, vitamin B12, vitamin B6) supplement use compared with the role of only FA supplement use, in relation to clinical pregnancy and live birth in infertile women undergoing homologous ART.

The researchers recruited 269 infertile women: 111 were supplemented daily with Quatrefolic® associated with other vitamin B and 158 with only FA. In the vitamin B complex-supplemented women, the mean number of Metaphase II oocytes and the pronuclear stage (2PN) fertilization rate score were higher than in women supplemented with FA.

The results showed a higher percentage of women in the vitamin B complex group had a clinical pregnancy and live birth in comparison to the FA group, leading the authors to conclude that "women undergoing homologous ART supplemented with 5-MTHF and vitamin B12, have a higher chance of clinical pregnancy and live birth in comparison to those supplemented with only folic acid. Further prospective studies and randomized clinical trial are needed to elucidate the effects of

folate, vitamin B12, and homocysteine pathway in improving pregnancy outcomes in women after ART. If our findings were confirmed, this relatively inexpensive supplementation with vitamin B complex might be considered in clinical practice, particularly in women undergoing ART."

"We are excited to see the increasing volume of publications related to the role of the biologically active form 5-MTHF as a better option than folic acid in fertility problems and pregnancy outcomes," says Silvia Pisoni, Global Market Manager of reproduction and women's health with Gnosis by Lesaffre, noting that this study strengthens the positioning of Quatrefolic® in fertility, already shown by observational studies conducted on couples with a history fertility problem such as recurrent fetal loss, premature ovarian insufficiency, or abnormal sperm parameters.<sup>2-5</sup> "Quatrefolic® is proven to be a real solution with beneficial innovated features that match totally to the requirements of physicians and doctors to provide effective solutions and increase consumers' compliance."

#### References:

- 1 Cirillo, M.; Fucci, R.; Rubini, S.; Coccia, M.E.; Fattini, C. 5-Methyltetrahydrofolate and Vitamin B12 Supplementation is Associated with Clinical Pregnancy and Live Birth in Women Undergoing Assisted Reproductive Technology. *Int. J. Environ. Res. Public Health* 2021, 18, 12280. <https://doi.org/10.3390/ijerph182312280>.
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## New study of consumer understanding of probiotics points to significant opportunities for the food industry

**CHR. HANSEN HAS RELEASED** the results from a global survey deployed in 16 countries around the world to gauge consumer awareness of probiotics and their potential benefits. The data was collected in 2021 and results reflect a strong interest in learning more about probiotics among consumers worldwide, signaling a new chapter for market trends and a valuable opportunity for players in the global food industry.

Consumer interest in probiotics is driven by a growing motivation to cater to the health and well-being of their loved ones. Consumers are aware that robust gut health makes them feel better and supports immunity. This awareness drives decision-making and has sparked motivation to learn more about which probiotics may offer the best outcomes for their individual needs.

In an effort to better understand the consumer experience when it comes to awareness and use of probiotics in food, Chr. Hansen designed a study to poll a representative sample of the general population in each country. In total, 16,000 people participated in the survey. The key findings include:

- **75% of the surveyed population reported being very or somewhat familiar with probiotics**

48% of respondents consume probiotics daily or almost daily, whether in supplements or in other foods. Survey results suggest that probiotic consumption is driven by an interest in their functional benefits, such as promoting gut and immune health and supporting the microbiome.

- **50% are familiar or very familiar with the term**

#### 'gut microbiome'

The 'gut microbiome' is a highly relevant topic for consumers and is associated with health. 50% are familiar or very familiar with the term 'gut microbiome' and the majority associate it with gut health followed by immune health, well-being and general health.

- **More than half of consumers have received a recommendation to consume probiotics from someone they trust**

- while internet research is the most popular way to learn more about probiotics. The flavor of the product and trust are top drivers for choosing and staying with a particular brand of probiotic food.

- **Misconceptions about probiotics**

Despite reported awareness, there is a range of misconceptions about probiotics. For example, 47% of consumers agree or somewhat agree to the incorrect statement that all dairy yogurts contain probiotics (when in fact most contain live cultures but not all contain probiotic cultures).

- **71% of consumers would like to learn more about probiotics**

- and prefer packaging and online resources as avenues for deepening their understanding. Consumers are most interested in information regarding health benefits and information that helps them identify which probiotic strains to select.

Full results are published on Chr. Hansen's website.

"The results of our survey highlight the

importance of consumer education and encourage continuing efforts to work with the industry to provide this education," says Lars Bredmose, Chr. Hansen's senior director of Commercial Development in Food Cultures & Enzymes. "At Chr. Hansen, we have worked to develop probiotic strain logos and trademarks that our customers may use to strengthen the credibility of their food with the world's most-documented probiotics."

"In addition, our launch of The Probiotics Institute in May 2021 offers a global, science-based platform that provides inspirational and educational content regarding probiotics and their relationship to the human microbiome. Food producers and health practitioners can use the platform as a credible source of information about probiotics."

"We are proud of our work to bring the world's most-documented probiotics to market and believe the opportunities to make them mainstream will only expand in the future," continues Bredmose. "There are many more insights from the survey and we encourage our customers across the food industry to reach out to us for country-specific findings and a discussion of implications for their specific markets. We believe our survey findings point to a significant opportunity for producers in the industry who are willing to offer food products made with credible probiotic strains. We look forward to partnering with them to shape the future of the industry and help optimize the health of consumers around the world."



# food & safety analysis

## Gosh! Providing quality vegan food with Labcell's AquaLab 4TE

**I**n response to consumers' increasing appetites to care for the planet as well as their bodies, Gosh! Food offers a variety of delicious plant-based and free-from food made with 100% natural ingredients. The range, which includes sausages and burgers, is approved by the Vegan Society, and so is suitable for vegans, vegetarians and flexitarians alike!

Gosh! Food's commitment to customers is evident through the entire manufacturing process, from sourcing suitable ingredients, formulating vegan-compliant recipes and a rigorous quality assurance process. For the last five years, Gosh! Food has been using the AquaLab 4TE Water Activity Monitor from Labcell in the development process.

The monitor was purchased from Labcell in 2017. Delivery was followed up with a site visit to demonstrate the operation, day-to-day maintenance, cleaning and performance verification routines. Labcell also provided standards to the customer to allow local checking and performance validation.

As you would expect from a company with high standards, Gosh! Food has taken advantage of Labcell's annual service and calibration to keep the instrument in good condition and functioning to the latest specifications. The company has also purchased standards regularly to check the instrument as part of their in-house testing routine.

Viki Evans, Process Development Manager at Gosh! Food said "The ability to quickly and easily measure water activity allows us to optimise recipes throughout the NPD process from initial development through to scale up and factory trials. We can



also check potential impacts due to process or equipment changes - this was of great benefit during the commissioning of our second manufacturing site in 2021".

The AquaLab Series 4TE produces accurate measurements of the water activity in active ingredients, excipients and formulations. Water activity measurements are essential when following due course and process as part of GMP (good manufacturing practice) because water activity has a significant bearing on product stability, as well as the handleability of materials in production and packaging equipment. AquaLab Series 4TE is a precise, easy-to-use instrument which enables lab-quality measurements of water activity to be made in the production environment. It is suitable for use by formulation and research and development teams, as well as those working on new packaging designs.

For more information or to book a demonstration, visit the website at [www.labcell.com](http://www.labcell.com), call Labcell on +44 (0)1420 568150 or Email: [mail@labcell.com](mailto:mail@labcell.com)



## Leading Spanish wine testing laboratory announces new NMR authentication service

**E**stación Enológica de Haro (EEH), a public and governmental laboratory situated in the major wine growing region La Rioja, Spain, has announced a new wine analysis service

for public and private organizations in the oenological sector.

It is the first of its kind to be provided by a laboratory in Spain.

## PerkinElmer launches innovative FT-IR platform for quality and safety testing of wine, dairy and liquid foods

**P**erkinElmer, Inc. a global leader committed to innovating for a healthier world, has launched its new FT-IR liquid food testing platform including instruments, software and streamlined workflows.

As part of the platform and leveraging PerkinElmer's leading FT-IR Spectroscopy technology, the LQA300 system for wine identifies key quality markers – including alcohol, sugar, acidity, pH and density levels- during every part of the winemaking process, from harvest to bottling. Additional fit-for-purpose LQA300 system calibrations will be added for other liquid food sample types by the end of 2022 including but not limited to beer, alcoholic spirits, edible oils, soft drinks, and more.

The LactoScope 300 system, which expands PerkinElmer's FT-IR dairy portfolio, detects key markers such as fat, protein and lactose levels in milk, cream and whey. Adulterants including urea, ammonium sulfate, maltodextrine, sucrose and water can also be detected in raw and processed milk.

Step-by-step pre-developed workflows and intuitive touch-screen and software interfaces enable users to simply place liquid samples into the instruments, push a single button and receive results on a 12-inch touch screen in under 45 seconds, allowing 60 samples to be run each hour. With the streamlined approach, new users can also learn to confidently perform mission critical analyses in seconds.

"Dairy, wine, and other liquid foods are staple items on tables around the world and it should be simple to have access to important data to help create products that are safe and perform as expected," said Greg Sears, VP and GM of Food at PerkinElmer. "Having intuitive, affordable and powerful testing and analysis solutions like the LQA300 and LactoScope 300 FT-IR systems gives customers the insights to make more informed, real-time decisions and take actions to improve quality, reduce waste and meet both regulatory and consumer demands."

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Sabinsa has obtained Novel Food approval from the European Food Safety Authority (EFSA) for Curcumin C3 Reduct®, which contains the curcuminoid metabolites Tetrahydrocurcuminoids (THCs). This may well be the first time a metabolite of a nutrient has been approved as a Novel Food.

C3 Reduct® overcomes the bioavailability limitation of the parent curcuminoids in the most functional way. The extensive metabolism of curcuminoids has resulted in the rapid proliferation of many commercial curcuminoid products in the market, often with unsubstantiated or hyperbolic claims of enhanced bioavailability. It has been generally believed that limited systemic bioavailability of curcuminoids might limit the realization of the full potential of curcumin. The knowledge that gut resident bacteria metabolize curcumin to THCs - a highly powerful and stable reductive metabolite, which confers similar yet stronger benefits than the parent curcuminoids, propelled Sabinsa to explore these reductive metabolites in greater depth.



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