

# innovations

## IN FOOD TECHNOLOGY

ISSUE 101

NOVEMBER 2023

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Velvety plant-based  
innovations with millet  
Functional beverages  
Sports Nutrition  
Immune health  
Healthy snacks  
Fermentation  
Acacia gum

**Ingredients for artisanal  
baked goods**  
Plant-based meat  
alternative solutions  
Milk-based ingredients  
Fat block technology  
Vegan gummies  
Clinical study news



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**Deadline: 5 February 2024**

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Healthy snacking	Sports nutrition

**PREVIEWS:**  
**Food Ingredients Europe (FiE) 2024**

**Deadline: 28 October 2024**



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**IMPORTANT NOTICE TO CONTRIBUTORS**

**February 2024 issue**

**Deadline is 31 January 2024**

# Indena and dsm-firmenich pioneer a new “Age of Nature” through selected market-inspired botanical solutions for human health

**I**ndena, a private Italian company with a century of experience in the identification, development and production of high-quality, innovative and effective active botanical principles for the pharmaceutical and health food industries, and dsm-firmenich, innovators in nutrition, health and beauty, have announced a strategic partnership in some specific areas. The collaboration will pioneer the development of novel scientific evidence to support the effectiveness of natural solutions in the human health arena, leveraging both companies' values, visions and knowledge. It is poised to inspire a new 'Age of Nature', which will contribute to drive the future of nutraceuticals.

With promising research on the positive benefits of botanicals, the partnership is dedicated to specific health areas and selected ingredients, including those to support immunity, vision, brain health, women's health, healthy aging and gut health. Through this science-based approach, dsm-firmenich and Indena aim to lead innovation in the global nutritional botanical market to deliver advanced solutions that resonate with the needs of today's consumers.

This cooperation will bring highly effective Market-ready Solutions to the market, as well as, in the medium- and long-term, products that will be new in terms of their origin, ingredient combination and formulation.

"This partnership has come about from a vision shared by Indena and dsm-firmenich: to identify and develop innovative solutions for human health, combining a deeply-rooted scientific background with the visionary capacity to imagine the future challenges of nutraceuticals," states Daniele Giavini, Managing Director at Indena. "Today's savvy consumer requires increasingly smarter products in

terms of ingredients as well as formulation. Already in the next few months, our collaboration will bring products onto the market that combine and enhance the effectiveness of technologically advanced botanical extracts and ingredients from both companies. But above all, we want to launch a medium- and long-term planning process to build solutions that are not yet existing: solutions devised to respond to the increasingly sophisticated demands of a public wishing to take care of their own wellbeing with products that are scientifically studied, clinically tested and technologically ground-breaking, for proven effectiveness."

"As consumer demand for botanicals continues to gain traction globally, this purpose-led partnership directly addresses the market need for effective, science-backed products that are aligned to the most relevant health needs," comments Martin Dos Ramos, Global Vice President Dietary Supplements at dsm-firmenich. "Indena has long been a pioneer in the research and development of botanical derivatives. Science will remain at the core of our partnership and, when combined with our premix and market-ready solutions, flavor, taste masking and product formulation expertise, we are ideally placed to help take our customers' innovations to the next level."

Both companies are committed to driving progress towards the UN's Sustainable Development Goals. All projects within the strategic partnership aim to put sustainability first – from raw materials sourcing to production and marketing – with a focus on environmental impact, use of renewable energies and building a more circular economy.

For all business areas, other than the solutions selected for the partnership, the two companies will proceed fully independently.

## Evolva and Lehvoss group sign a distribution agreement for Veri-te™ resveratrol

**E**volva, a pioneer in the field of natural molecules and industrial biotech, and LEHOSS Group Nutritional Division, a leading European distributor with technical sales and marketing expertise supplying branded and high quality ingredients to the Food Supplements, Functional Foods and Animal Nutrition industries, have just signed a distribution agreement for the well-known, Evolva's brand Veri-te™ Resveratrol for use in dietary supplements.

This branded ingredient will be distributed through LEHOSS subsidiaries and expert teams across Europe. Over a dozen European countries are covered under the agreement and it is anticipated that the agreement will generate approximately CHF 1.5 million in sales by the conclusion of 2025.

The agreement is further testimony to Evolva's market expansion activities. Following market launch and successful entry into five South-East Asian countries as well as Brazil with Veri-te™ Resveratrol for use in foods and dietary supplements over the recent past, the agreement with LEHOSS now also paves the way to strengthen

distribution in important European countries. Veri-te™ Resveratrol is the main pillar of Evolva's Health Ingredients (HI) business and was a key driver for the 14% revenue growth in HI recorded in the first half of 2023.

Anne De Vos, Chief Commercial Officer of Evolva, comments: "We are very excited to strengthen the presence of our Veri-te™ Resveratrol across a wider range of European countries. Veri-te™ Resveratrol is a responsible multi-functional ingredient with proven health benefits supported by a number of clinical studies. We consider LEHOSS to be an ideal partner for the distribution of Veri-te™ Resveratrol due to its exceptional market capabilities."

Teresita Rudà, Head of Brands and Marketing for LEHOSS Nutrition adds: "We are thrilled to add this high quality, researched and sustainable brand to our portfolio. We are convinced that Veri-te™ Resveratrol will add strength to our specially selected offer of ingredients across Europe and we look forward to a successful partnership with Evolva."

## Vitamins lead the sports nutrition pack, Prinova research shows

**V**itamins, minerals and plant protein have emerged as superstar sports nutrition ingredients in new consumer research.

Prinova, the leading provider of bespoke premixes and blends, surveyed 1277 physically active European consumers. It presented them with a list of 20 common ingredients and asked them to pick the five that they most looked for in sports nutrition products.

By far the highest scoring ingredients were vitamins, picked by nearly two thirds (64%) of consumers, followed by plant protein and minerals. Meanwhile, many ingredients not traditionally associated with sports nutrition also scored highly. Sixteen per cent of consumers looked for products containing fibre, shortly followed by omega-3 (14%), botanicals (13%), probiotics (9%), and oats (9%).

Prinova believes the findings reflect the growing body of research on non-traditional ingredients for sports nutrition, and the new diversity of the sports nutrition consumer base.

Tony Gay, Technical Sales Director, Nutrition, at Prinova Europe, said: "Not so long ago, sports nutrition was seen as synonymous with protein, but the landscape is already looking very different. The market has exploded as scientific research has revealed the value of a far wider range of ingredients for athletic performance, and that has cut through to consumers. For example, there's growing awareness that a deficiency of B-vitamins can reduce athletes' ability to perform high-intensity exercise, while Vitamin C offers benefits for recovery as well as immune health, and minerals can offer benefits in areas like hydration."

The research also suggests that the plant-based trend has had a major impact on the sports nutrition space. More than four in ten (42%) consumers named plant proteins as one of the ingredients they most looked for, compared to 26% who looked for whey or dairy protein, 15% who looked for egg protein and 8% who looked for meat protein.

Prinova offers the world's largest inventory of food-grade single vitamins and is the leading supplier of Vitamins B and C. Its Aquamin range of marine multiminerals-complex products is supported by more than 40 peer-reviewed scientific publications.

It is also a leading distributor of natural high-quality plant proteins from sources such as rice, pea, lentil, and fava bean, and with Europe's largest inventory of food-grade amino acids, offers a range of BCAAs, EAAs and NEAAs, from single ingredients to bespoke blends.

The full research is available in a new Prinova White Paper, 'State of Play: New insights into the changing sports nutrition market'. It can be downloaded at: <https://www.prinovaglobal.com/eu/en/resources/white-paper/new-insights-into-the-changing-sports-nutrition-market>

## Introducing Mosaic Flavors: OC Flavors and Novotaste rebrand

**O**C Flavors and Novotaste have come together to unveil their transformative rebrand as Mosaic Flavors. This reimagined brand represents the harmonious fusion of artistry, scientific excellence, and a customer-centric approach to flavor creation.

The journey of Mosaic Flavors began with the vision of uniting agile flavor companies across North America, each company akin to a unique piece of a mosaic. Just like the intricately crafted patterns, Mosaic Flavors aims to maintain the individual service and character of each company while collectively forming a captivating masterpiece in the network.

With an acute understanding of the value of experience in the flavor world, Mosaic Flavors is bringing together innovative companies like OC Flavors and Novotaste, with years of expertise and track records of success. This partnership combines the benefits of size and scale while preserving the

personal touch that smaller companies offer.

At the core of Mosaic Flavors lies an unrivaled commitment to customer satisfaction. As part of the network, each company has the opportunity to collaborate and share knowledge. This rich exchange fuels a continuous journey of innovation and creativity that sets Mosaic Flavors apart in the flavor industry.

"We understand the challenges that food and beverage companies face in today's competitive market, and we are determined to be a trusted partner and innovative supplier that helps them conquer those challenges head-on," said Jim Miller, CEO of Mosaic Flavors. "Our unwavering focus on customization, innovation, and quality propels us to exceed our customers' expectations."

At Mosaic Flavors, the sum is genuinely greater than its parts. By weaving flavor companies, the brand has created a flavor journey that is truly unique and powerful.

## Azelis and dsm-firmenich expand food & nutrition partnership across India

**A**zelis, a leading innovation service provider in the specialty chemicals and food ingredients industry, is pleased to announce the extension of its partnership with dsm-firmenich, a leading global innovator in nutrition, health, and beauty. Effective immediately, Azelis India will be the sole distributor of dsm-firmenich's food enzymes and cultures range throughout India, a portfolio that includes dairy cultures, dairy enzymes, dairy test kits and bakery enzymes. This agreement expands Azelis India and dsm-firmenich partnership beyond the Western region to also cover India's Northern, Southern, and Eastern regions.

dsm-firmenich has over 150 years of expertise in innovation and a strong commitment to developing accessible solutions that serve to nourish, protect, and improve life. Thanks to their innovative portfolio, dsm-firmenich supports customers in the food & nutrition industry with ingredients that improve the taste, texture, and nutritional profile of formulations across a wide range of applications. This expanded partnership with dsm-firmenich strengthens Azelis' lateral value chain with additional advanced solutions and enables the group to further meet market demand for sustainable formulations that enhance taste, and nutrition, and help improve life.

Christian Petersen, Regional Sales Manager Asia Pacific at dsm-firmenich, comments: "Having partnered with Azelis India in the food market for more than a decade and pharma since 2022, we are pleased to expand that relationship to all of India for our enzymes and cultures portfolio for Food & Nutrition. This strategic decision has been made to streamline and enhance our distribution model in India to further increase our customer intimacy and strengthen our market penetration. We value Azelis as a trusted preferred partner with an excellent reputation, in-depth technical expertise and outstanding lab capabilities which are well-aligned with our technical solution-centric approach."

Aparna Khurana, Managing Director of Azelis India, adds: "We are thrilled about the expansion of our collaboration, a great recognition of the trust and confidence our valued principal dsm-firmenich has in our partnership. Our team has extensive knowledge of dsm-firmenich's ingredients, and we are pleased to have the opportunity to share our expertise with a wider audience and support customers in dairy, bakery, nutrition, and more applications. Being able to exclusively offer dsm-firmenich's advanced enzymes and cultures portfolio and nutrition solutions across India greatly expands our lateral value chain and nicely complements our current food and nutrition portfolio."

## IFF secures regulatory approval for use of 2'-FL HMO in China

**I**FF, a leader in food, beverage, health, biosciences and scent, has announced it is one of the first ingredients suppliers to achieve regulatory approval (NHC No. 8, 2023) for the use of its 2'-fucosyllactose (2'-FL), human milk oligosaccharide (HMO) in China for infant formula, follow-up formula and formula for special medical purposes for infants. The news is a significant milestone that signifies IFF's position as a key supplier of this vital constituent of human milk to the Chinese market.

HMOs—including 2'-FL, 3'-FL and others—have been gradually appearing in the U.S. and European markets for several years now. Their introduction to infant formula is propelled by numerous studies conducted on human milk, as well as formula containing 2'-FL, which suggested such products showed pronounced immune health benefits in infants.

China has the largest milk formula segment worldwide, representing close to 50% of the global market's total retail value.<sup>1</sup> Until today, HMO molecules were not approved for use in infant formula in China. The announcement of the landmark decision means brand owners and infant formula producers can now look to further support families across the Asia-Pacific region, and beyond.

"The infant formula industry has eagerly awaited the approval of 2'-FL in China, since it will allow producers to formulate a new generation of products for the early-life nutrition segment," said Marcus Gliwitski, global product manager, Health, IFF. "Today's decision will help us better serve customers in all major markets and respond to the rising global demand for infant nutrition products."

"We are thrilled to contribute to bringing infant formula closer to human milk," said Klaas Illegheems, global strategic business unit leader, INFAT®, HMO & Biosciences, Health, IFF. "This is our first HMO ingredient for the Chinese market, and we are committed to accelerate more of our high-quality HMOs to customers soon."

This regulatory milestone marks the intersection of IFF's extensive HMO research and innovation, commercialization, and health benefit effects – via infant gut microbiome modulation – closing an important gap between human milk and infant formula.

<sup>1</sup> Euromonitor: Dairy Products and Alternatives: Euromonitor from trade sources/national statistics.



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# Mondelez International completes sale of developed market gum business to Perfetti Van Melle

**M**ondelez International has announced the completion of the sale of its developed-market gum business in the United States, Canada and Europe, excluding Portugal, to Perfetti Van Melle Group, a leading global gum and confectionery maker. The Portugal portion of the business is being retained by Mondelez pending regulatory clearance from the Portuguese Competition Authority, which the parties expect will be forthcoming in the near term.

The divestiture advances the Company's portfolio reshaping strategy, as it continues striving to deliver 90% of revenue in its core categories of chocolate, biscuits and baked snacks.

The sale includes manufacturing facilities in Rockford, Illinois, and Skarbimierz, Poland, and the gum brands Trident, Dentyne, Stimorol, Hollywood, V6, Chiclets, Bubbaloo and Bubblicious in the United States, Canada and Europe, as well as European candy brands including Cachou Lajaunie and La Vosgienne. Mondelez continues to operate its gum business outside the United States, Canada and Europe, led by Stride in China, as well as all of its other candy brands and products.

"As we continue accelerating growth to become the global snacking leader in chocolate, biscuits and baked snacks, we are pleased to

transition our developed market gum business to a global, privately owned, values-driven company with a strong and proven track record of brand investment and innovation," said Dirk Van de Put, Chairman and CEO, Mondelez International. "We are incredibly proud of the talented colleagues who made these brands so successful, and we wish them all the best as they join the Perfetti Van Melle team."

"This acquisition aligns perfectly with our strategic goal of becoming a global leader in gum, our chosen focus," said Egidio Perfetti, Chairman of Perfetti Van Melle Group. "We expect to further bolster our product portfolio, manufacturing capacity, market distribution and financial results, effectively doubling our size in North America and increasing our reach in Europe, serving more consumers with our well-loved brands. With a passion for gum, our strong innovative background and family history, we are very pleased and proud to welcome the new people, brands and plants that have joined us today."

Mondelez is retaining the Portugal portion of the business until regulatory approval is granted in that jurisdiction, after which the parties have agreed the Portugal portion of the business will be sold and transferred to Perfetti Van Melle Group.

# Kalsec® extends savoury expertise with launch of R&D lab in the Netherlands

**K**alsec® Inc. is expanding its existing footprint on the European continent with the opening of its Savoury Product Innovation Centre of Excellence (SPICE Lab) in Wageningen, Netherlands. Kalsec is a natural ingredient solutions provider for the food and beverage industry, with global headquarters in Kalamazoo, Michigan. This new facility will demonstrate Kalsec's leadership in developing taste and sensory solutions derived from nature, with an emphasis on sauces, dressings and condiments applications.

"We chose to locate our new SPICE Lab in the heart of the Wageningen Food Valley to strengthen our position in the region and reinforce our commitment to our European customers," said Julie Heine, Kalsec's President and Chief Commercial Officer. "We are excited to tap into the abundance of agrifood innovation clustered at and around Wageningen University & Research."

Kalsec has served food manufacturing customers in Europe for nearly 30 years, and has a regional headquarters located in the United Kingdom. The company worked in cooperation with Oost NL, the East Netherlands Development Agency; Foodvalley NL as a network partner for practical valorisation; and world-renowned University and Research institution WUR to establish Kalsec operations in Wageningen.

Dr. David Johnson, Kalsec's Director of R&D – Europe, is building an international team of food scientists to facilitate research and new product development at the SPICE Lab. "We look forward to working in this amazing ecosystem as we develop partnerships with other pioneering food industry organizations," he said.

Kalsec's SPICE Lab is located at Plus Ultra II, a multi-tenant business facility on the Wageningen Campus. Plus Ultra II was developed by Kadans Science Partner with a priority on sustainability and the building has been categorized as energy label class A. WUR is similarly focused, with a mission to explore the potential of nature to improve the quality of life, and a GreenMetric ranking as the most sustainable university in the world. As a certified B Corp, Kalsec shares this dedication to sustainability, with a commitment to meeting the highest verified standards of social and environmental performance, transparency, and accountability.

Heine said, "It is our purpose to unlock the potential of people, nature and science to nourish the world. We are proud to contribute to the advancement of a more sustainable global food system."



# Tate & Lyle announces major investment programme in its facility in Slovakia to produce dietary fibres

**T**ate & Lyle PLC (Tate & Lyle), a leader in ingredient solutions for healthier food and beverages, announces a major investment programme in its corn wet mill in Boleráz, Slovakia, to establish new capacity for its leading non-GMO PROMITOR® Soluble Fibres.

The production of fibres during the first phase of the programme will start in mid-2024, representing a €25 million investment. This programme is expected to significantly increase Tate & Lyle's fibre capacity to serve both its European and global customer base. Developed with Tate & Lyle's proprietary fibre production know-how and using the latest technology to drive operational efficiencies, this state-of-the-art facility in Boleráz, will give Tate & Lyle the ability to expand existing PROMITOR® product lines, and add new ones, over time.

This major investment programme will help Tate & Lyle to meet growing consumer demand for fibre as a tool for supporting gut health and immunity. Tate & Lyle's proprietary research shows that over half (54%)<sup>1</sup> of global consumers plan to consume more fibre. Customer demand for sugar reduction solutions, where fibre can play an important role, also remains high, with sugar and calorie reduction claims being included frequently in new fibre fortified product launches.<sup>2</sup>

Abigail Storms, Tate & Lyle's SVP Fibre and Sweetener Platform, said: "Tate & Lyle is the only

dietary fibre producer with production in three continents.<sup>3</sup> With the addition of this state-of-the-art production facility to our fibre network, we will offer customers even greater security of supply, with efficiency benefits intended to support accessible nutrition so that more consumers can access the many benefits of fibre."

Dr. Kavita Karnik, Tate & Lyle's Global Head of Nutrition, Regulatory and Scientific Affairs, added: "We know that reaching the daily fibre recommendation is challenging, and for most people it is difficult to do so without exceeding their recommended calorie intake. This is where reformulation of the everyday products like breakfast cereals, yoghurt, and bakery products, can be really effective in improving nutritional intake. Our PROMITOR® Soluble Fibres have been shown to support gut health, promote calcium absorption and helping to maintain a healthy blood glucose response. Emerging science shows it may provide even wider benefits, including brain and metabolic health."

## References:

1. Tate & Lyle Proprietary Global Ingredient Perception Research 2022-23
2. Mintel GNPD Data 2017-22 shows 14% of high or added fibre launches carried a 'no added sugar' claim (17% CAGR over the timeframe), followed by 10% carrying a 'low/reduced sugar' claim (17% CAGR), and 7% carrying a 'low/no-reduced' calorie claim (3% CAGR).
3. Tate & Lyle's other fibre production facilities are in the US, the Netherlands and China.

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

## Lallemand Health Solutions acquires Dietary Pros Inc., US-based contract manufacturer

**L**allemand Health Solutions has recently announced the acquisition of Dietary Pros Inc. from its founder and CEO Dennis Drager.

"We are proud to be the new owners of Dietary Pros, a company that has a well-established position as a full-service contract manufacturer, specialized in the formulation and supply of probiotic solutions to its customers in the supplement and nutraceutical sectors. Over the past 12 years, Dietary Pros has built a successful reputation in providing custom formulations of probiotics, a wide range of supplements, and unique customer service to its partners," announces Jérôme Panes, President and General Manager at Lallemand Health Solutions.

Lallemand Health Solutions is renowned as a vertically integrated global leader in the probiotic industry, boasting significant growth through its manufacturing, scientific, and regulatory assets. This acquisition brings together two complementary forces that will as priorities, continue to respond to

customer needs and simultaneously help their growth with their respective strengths.

"To have a US-based manufacturing facility adds flexibility to our day-to-day operations and expands our production capacity. The benefits are numerous, ranging from extending our supplement offerings beyond probiotics to growing our customer portfolio. We will now offer a full range of products within the same facility, featuring multiple combinations of ingredients with flexible operations," explains Isabelle Champié, Vice-President of Sales and Marketing at Lallemand Health Solutions.

"Dietary Pros will continue to operate as a 'stand-alone' independent contract manufacturer, servicing its current and prospective customers as well as manufacturing for Lallemand Health Solutions. "All our employees remain in the company," ensures Dennis Dräger, founder and CEO of Dietary Pros – who will continue with his current functions.

## Brenntag Specialties expands strategic partnership with Royal Avebe into Benelux

**B**renntag, a market leader in chemicals and ingredients distribution, has announced the expansion of the partnership with Coöperatie Koninklijke Avebe U.A. ("Royal Avebe"). The expanded distribution agreement now offers Royal Avebe potato starch and protein products to Brenntag customers in Belgium, Luxembourg, and the Netherlands in addition to the initial region of Turkey.

Royal Avebe is an international farmer cooperative producing potato starch and potato protein. Product applications include food, animal nutrition and the construction industry. Brenntag initially announced the partnership with Avebe in June of 2023.

Michael Friede, Chief Executive Officer Brenntag Specialties, comments: "I am excited to see this expansion of our Life Science offering come to fruition. Growing our partnership with Avebe is an important step in our 'Strategy to Win' - offering our Nutrition customers in more and more regions access to an innovative product portfolio from excellent, high-quality supply partners."

Chris Hollebek, Chief Commercial Officer at Royal Avebe, added: "Brenntag has proven to be a reliable partner with global distribution reach, and we are happy to expand our partnership into Benelux, in order to 'Accelerate and Strengthen' our offering of products and services to even more customers locally."

## Acquisition expands Kensing's natural vitamin E and phytosterols product offerings

**K**ensing, LLC, a leading manufacturer of natural vitamin E, plant sterols and high-purity surfactants, and a portfolio company owned by an affiliate of One Rock Capital Partners, LLC, has announced the acquisition of Advanced Organic Materials, a pioneering producer of non-GMO plant-based vitamin E and phytosterols derived from sunflower and rapeseed. "The acquisition of AOM enhances our range of non-GMO plant-based ingredients, strengthens our access to new sources of diversified natural raw materials and opens up new end markets," stated Serge Rogasik, CEO of Kensing. "We look forward to partnering with Alex (AOM's CEO) and his team to meet the growing demand for natural products from our five plants across the U.S., Europe, and Latin America."

AOM, which operates state-of-the-art facilities in Valencia, Spain, and Buenos Aires, Argentina, is a globally recognized leader in the production of plant-based, non-GMO products including vitamin E, mixed tocopherols, and phytosterols. Serving customers in more than 34 countries, AOM excels in delivering clean-label alternatives that are well aligned with preferences of brands and consumers across the nutrition, personal care, food, and beverage sectors.

"We are thrilled to join forces with an industry leader and embark on this new chapter as part of Kensing. This acquisition marks an exciting opportunity for us to leverage our combined capabilities to enhance performance and expand geographic presence. Together, we can deliver unparalleled value to customers, consumers, and stakeholders, and I look forward to the journey ahead," stated Alex Abad, CEO of AOM.



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NATURAL FOOD INGREDIENTS



## Evolva receives approval for Veri-te™ Resveratrol in Thailand

**E**volva, a pioneer in the field of natural molecules and industrial biotech, has received approval for its Veri-te™ Resveratrol from the Thai Food and Drug Administration for use as an ingredient in dietary supplements.

The approval was obtained with support of Breko and Brenntag Ingredients (Thailand) Public Company Limited. Our long-term partner Breko is a leading supplier of products for the food and beverage industry as well as for food supplements, functional food and cosmetic products. Breko and Brenntag Ingredients (Thailand) Public Company Limited have been working together in Thailand for many years, bringing innovative ingredients from Europe to the region.

Anne De Vos, Chief Commercial Officer of Evolva, comments: "Our Veri-te™ Resveratrol is a responsible multi-functional ingredient with proven health benefits supported by a number of clinical studies. We are determined to bring this product into foods and dietary supplements across South-East Asia where health consciousness already plays an important role. We will work closely with our trusted partner Breko to develop market entry and address the exciting market potential of Thailand, a country with 72 million inhabitants. Over a 3-5 year time horizon, we estimate the sales potential in this market to be in the mid single-digit USD million range. Veri-te™ Resveratrol is the main pillar of Evolva's Health Ingredients (HI) business and was a key driver for the 14% revenue growth in HI recorded in the first half of 2023."

## RAPS takes over Salz Centrale Hamburg

**S**pice manufacturer RAPS has acquired the table salt business of Salz Centrale Hamburg through its majority holding in BIOVA with immediate effect. The acquisition adds a wide range of natural salts to the portfolio and expands the global network of suppliers.

In recent decades, Salz Centrale has built up a large number of exclusive contacts in the countries of origin of the salts, such as Pakistan, Bolivia and Hawaii. The clientele, including top European chefs, well-known food manufacturers and wholesalers will, in future, be supplied by BIOVA.

Florian Knell, CEO of the RAPS Group, is pleased with the conclusion of the contract: "Part of our growth strategy is not only to grow by our own efforts, but also greatly expand our competence through acquisitions. Here, the purchase of Salz Centrale is another huge step forward," he says. Knell also predicts good opportunities for RAPS to make further acquisitions in the future.

Dirk Carstensen, founder of Salz Centrale Hamburg, feels the time has come for a change after more than 20 years as managing director: "It is a stroke of luck that we came to RAPS through our close relationship with BIOVA. I am sure that I am leaving my life's work in good hands and that my long-standing customers will continue to be well looked after."

## Arla Foods Ingredients invests for growth in Latin America

**A**rla Foods Ingredients has invested in a major upgrade to its facility in Argentina, allowing it to meet growing demand for high-quality whey ingredients, both in Latin America and globally.

The improvements to the company's Porteña site include a new drying tower, which will more than double capacity for production of whey permeate powder. It has also taken the measures necessary to produce infant-formula-grade proteins in Latin America.

### New drying tower to double whey permeate powder capacity

Demand for whey permeate, a low-calorie source of sweetness and minerals, is growing globally, in particular in Asia and Latin America.

Healthy sales have helped Arla Foods Ingredients S.A. invest in infrastructure at the Porteña facility, including a new tower for the drying of whey permeate. This will allow all permeate solids produced at the site to be turned into dry ingredients for food and beverage markets. Capacity for the production of whey permeate powder is set to more than double.

Dairy technology provider RELCO, a Koch Separation Solutions Company, is due to begin building work on the tower once financial arrangements have been finalised. RELCO was selected for its global experience in permeate processing and drying, South American resources and commitment to the specific requirements of the project. The tower is scheduled to be completed and go live in 2026.

Henrik Andersen, CEO of Arla Foods Ingredients, said: "We've been active in Argentina since 2000 and we're pleased that Arla Foods Ingredients S.A. has achieved some very satisfactory results, allowing it to invest in further growth for the future. This major upgrade is an essential element of our strategy to meet the increasing demand for

high-quality whey products – both in Latin America and globally."

### Producing infant formula-grade proteins in Latin America

The manufacture of products for early life nutrition requires adherence to strict standards on nutritional quality and hygiene. Arla Foods Ingredients' Danmark Protein facility has been supplying proteins to the sector since the 2000s.

Following a rigorous process, the Porteña facility can now meet the same standards. Measures taken include new sanitary barriers to protect the zone where formula-grade products are manufactured, and strict procedures to improve environmental standards and raw material separation.

Meanwhile, agreements have been reached with local dairy suppliers, including training programmes to ensure that raw materials meet the necessary quality standards.

Henrik Andersen, CEO of Arla Foods Ingredients, said: "We're very proud that we're able to produce infant-grade products in Latin America. Getting to this point has taken a lot of time, hard work and – most importantly – co-operation, not just between our fantastic teams in Argentina and Denmark, but also with local dairies. They've all worked very effectively together to take our performance to the next level."

The measures taken to meet the standards were completed in June. Arla Foods Ingredients predicts that infant-grade material will account for a sizeable proportion of the plant's output within the first year and then to increase further.

Arla Foods Ingredients supports the WHO recommendation for exclusive breastfeeding for the first six months of an infant's life and continued breastfeeding up to the age of two or beyond, in combination with nutritionally appropriate complete foods.

## Nutramax and ADM expand international distribution partnership

**N**utramax and ADM's trusted probiotic supplements brand, ADM Protexin, have announced the expansion of their longstanding partnership that will allow ADM Protexin to manage certain Nutramax brands in Europe and a number of APAC markets, with the aim to expand further internationally. This agreement builds upon the existing successful collaboration between the two organizations. Under the enhanced partnership, ADM Protexin will manage the distribution of select Nutramax brands, including Cosequin®, Dasuquin®, and Denamarin® in various international markets. These trusted Nutramax brands are known for their high-quality ingredients and researched formulas in the animal health industry. The partnership will allow ADM Protexin to leverage its capabilities in Europe to better service existing distribution channels and further expand the global reach of Nutramax brands to make the products more widely available to veterinarians and consumers around the globe.

"We are excited to expand our partnership with ADM Protexin to better meet the increasing needs for international markets," said Todd Henderson, DVM, CEO and President of Nutramax. "This is a significant step for both organizations and is a testament to our shared commitment to quality and improving the lives of animals around the globe."

This agreement is a significant milestone for both Nutramax and ADM Protexin, as it represents a new phase in their partnership and underscores their commitment to providing high-quality products to support animal health worldwide.

"The Nutramax portfolio of products aligns exceptionally well to ADM's Health and Wellness solutions, allowing us to provide our companion animal customers with a much broader array of products and capabilities" said James Kyffin, Commercial Director - Animal Health at ADM Protexin. "The ADM Protexin team could not be more excited about the expanded partnership and the opportunity to better serve our customers."



# Robertet and Interstellar Lab join forces to revolutionize production of plant-based natural ingredients

**R**obertet, a leader in natural raw materials, is the first industrial player in fragrances and flavors to acquire a BioPod. This first contract with the biotech startup Interstellar Lab, a visionary player in biofarming, will enable Robertet to accelerate its knowledge of the living, while reducing its environmental footprint for precision agriculture. Thanks to a triple expertise in controlled environment, artificial intelligence and biology, BioPod accelerates production cycles, increases production of bioactive compounds in plants, while offering a sustainable cultivation tool that anticipates the challenges of sourcing plants and the environmental impact of producing natural ingredients.

BioPod is a 11m long, 5m wide and 6m high deployable greenhouse, which can be installed without a foundation and offers up to 100m<sup>2</sup> of highly-controlled growing space. This autonomous cocoon, a terrestrial adaptation of a system originally developed for NASA, operates in a semi-closed circuit, optimizing the water cycle and capturing ambient CO<sub>2</sub>. Its transparent membrane captures sunlight and reduces the energy consumption of artificial light. Equipped with sensors and its own artificial intelligence, BioPod recreates climates autonomously, enabling the production of high-value-added plants and natural ingredients in a sustainable and replicable way. Thanks to cutting-edge technologies and automated control using an algorithmic approach,

BioPod maintains ideal conditions for plant growth and molecular composition, while significantly reducing cultivation surface, water and energy consumption.

Jérôme Bruhat, CEO of Robertet, explains: "The arrival of this BioPod in Grasse illustrates Robertet's innovation strategy: using cutting-edge technologies to offer our customers the best natural products for a more sustainable industry. We are doing this with a recognized pioneer in biofarming."

"We are looking forward to kick-off our collaboration with Interstellar Lab, an exceptional partner. We are already engaged in several research programs to prepare the future of aromatic plants agronomy, and we are excited to accelerate this research thanks to the remarkable performance of the BioPod. We are determined to continue transforming our industry," explains Julien Maubert, Director of the Raw Materials Division and in charge of the Interstellar project.

"We are delighted to be bringing BioPods to market with Robertet, as our first partner, a leading French, natural ingredients group with unrivalled experience and expertise in cultivating Earth natural resources. We share many common values, such as the preservation of biodiversity. With the BioPod, we are offering a solution to the industry's ecological transition. We harness technology to benefit the living," adds Barbara Belvisi, founder and CEO of Interstellar Lab.

## Chr. Hansen achieves first step Chinese approvals of 3 HMOs

**T**he three HMOs, 2'-FL, LNT and 3-FL, have just been approved by the Chinese Ministry of Agriculture and Rural Affairs, MARA, bringing Chr. Hansen's HMOs one step closer to final approval for the Chinese market.

Next in line is to pass the final nutrition fortifier approval process before market access is in place.

"This first Chinese regulatory approval of three of our HMOs is an important milestone in our quest to bring infant formula closer to breastmilk in China and our aim to market our HMOs to the world's largest infant formula market. The approvals put us in a positive position to secure the final regulatory wins," says Jesper Sig Mathiasen, senior vice president, Chr. Hansen HMO.

The 3-FL HMO is particularly interesting for Chinese consumers as empirical studies of Chinese mothers' breastmilk have shown a 3-FL concentration increase in the first months and hereafter maintaining a high level during the period of lactation.

The MARA approvals cover the technology to produce each of the three HMOs and it enables Chr. Hansen to apply for final approval of the 3 HMOs with Chinese authorities.

Chr. Hansen will also apply for Chinese approval of the remaining 2 HMOs in the clinically documented MyOliTM 5 HMO mix. The 5 HMOs in MyOli are already approved in the US and EU amongst others.

### What are HMOs?

Human milk oligosaccharides (HMOs) are a major component of human milk, associated with multiple health benefits including shaping a healthy infant gut microbiome, possibly supporting brain development and the maintenance of a well-balanced immune system, reducing the risk of bacterial imbalance and maturing and maintaining the integrity of the intestine.

HMOs have been associated with a number of health benefits, including the 2'-FL, LNT and 3-FL:

- 2'-FL: 2'-Fucosyllactose is the most abundant HMO in breast milk (Thum et al., 2021). It is known for its beneficial effect in immune development (Goehring et al., 2016), supporting a balanced microbiome composition (Hill et al., 2021) and positively associated with neurodevelopment (Berger et al., 2020).
- LNT: Lacto-N-Tetraose, one of the most abundant HMOs in breast milk representing the group of basic neutral HMOs, contributes to the benefits of breastfeeding for infants and a well-balanced gut microbiome by helping to limit the growth of undesired microorganisms (Hill et al., 2021)
- 3-FL: 3-Fucosyllactose increases in concentration over the course of lactation (Thum et al., 2021), and thereby becomes the most abundant HMO in human breast milk over time (Samuel et al., 2019; Thum et al., 2021).

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# Lesaffre takes a minority shareholding in Yeap, a start-up specializing in functional alternative proteins

**L**esaffre and Yeap recently announced that Lesaffre has made an 10% investment in Yeap to help it finalize the development of a promising new protein ingredient made from upcycled yeast. Through this investment, Yeap becomes one of Lesaffre's partners in bringing new groundbreaking, functional, alternative proteins to the market.

Yeast proteins are natural and sustainable, making them an excellent alternative to animal proteins. Furthermore, they are highly nutritious, have an attractive taste, and have applications in a wide range of foods.

Yeap and Lesaffre share a vision to make yeast a key source of protein in the emerging plant-based protein market. The protein will be highly versatile, and because it is made from upcycled yeast, it will have a very low environmental impact.

"The collaboration and investment from an industry leader such as Lesaffre is a strong vote of confidence in Yeap" says Jonathan Goshen CEO and Co-Founder of Yeap. "As our world is facing the great challenges of climate change and scarcity of resources – we believe Yeap can be part of the solution. This investment will help us increase our capacity to innovate."

As part of its mission, Lesaffre is exploring the most innovative ways to meet the food challenges we face today. By 2050, the world will need to provide nine billion people with healthy food from environmentally sustainable resources. Fermentation, microorganisms, and derivatives such as yeast extracts and highly functional proteins can play a vital role in meeting this challenge.

"For 170 years, Lesaffre has been innovating to bring its customers solutions that help create a healthier, more sustainable future. Our expertise in fermentation and micro-organisms enables us to innovate every day, with the support of our passionate R&D teams, and by investing in start-ups in which we believe. With Yeap, we aim to take a step further in finding solutions to the food challenges of tomorrow," says Brice-Audren Riché, CEO of Lesaffre.

This investment will be overseen by Biospringer by Lesaffre, which is the world's largest producer of natural food ingredients derived from yeast and other microorganisms.

"The product under development by Yeap is a natural ingredient for our customers and has the potential to address many of the challenges facing the food industry. With this investment, Biospringer strengthens its innovative position within this industry," explained Carmen Arruda, General Manager of Biospringer by Lesaffre.

# Sustainability is a top innovation driver in European foodservice beverage market - Kerry

**N**atural reformulation, incremental innovation and rethinking seasonality will be key in creating winning foodservice beverages, according to a new analysis by Kerry, a world leader in taste and nutrition.

The insights are contained in Kerry's new Art of Taste and Nutrition report, which examines nearly 500 seasonal offerings across 14 key markets in Europe, categorising the top beverage platforms and flavours and profiling future trends across the world.

The report highlights top three limited time offer trends that emerged throughout the summer season: the citrus comeback, ice cold caffeine, and 'little treat' culture. Lemon was the top flavour across Europe this summer, with brands embracing more refreshing formats utilising the citrus fruit. Iced latte and iced tea surfaced as the two most popular and growing beverage platforms across the region. Meanwhile, pressures in a post-pandemic world have resulted in many consumers turning to 'little treats' to add a daily dose of joy into their lives.

## Sustainability is the future of beverage

Kerry highlights that sustainability is a key driver in the future of beverage. It links back to today's consumer needs of great taste, functionality and reduced sugar, as well as what people will want in the future, which research suggests is the sustainable sourcing of ingredients, sustainable packaging and balanced nutrition.

Sustainability also benefits foodservice operators in achieving their own goals, such as reducing water usage, food waste or CO<sub>2</sub>. It is a solution where everyone benefits and, in the future, this will likely become its own innovation platform: meeting that consumer need for better-for-you beverages that are better for the planet and society.

Commenting on the new report, Daniel Sjogren, Vice President for Foodservice in Kerry Europe, said "Sustainable nutrition is where the future of beverage is heading. Collectively, we need to do more to move this along at pace. By partnering with Kerry, our customers can leverage solutions such as Tastesense Advanced, which significantly reduce the sugar content of products, without

any impact on taste or mouthfeel - all this while reducing carbon footprint. There is a great opportunity for operators to innovate while keeping a firm eye on overall impact," he said.

## Taste the top driver of purchase

Taste remains the number one driver of purchasing a beverage. However, consumers are balancing new needs as part of their purchase decision, including a desire for excitement, value, and sustainable nutrition

"Our report details an increase in more natural flavours and formats across Europe, with consumers showing a clear desire for beverages that deliver great taste and experience but in a more sustainable and nutritious way," Mr Sjogren added.

"Foodservice brand owners must take all these into consideration when innovating. On top of this, we see a continuous battle happening between maximising the existing product range versus offering new limited time offers. Businesses that apply a balanced approach to creating efficiencies and exciting offers in target areas of the menu are the likely winners."

## Efficient innovation

Kerry's report provides valuable insights for foodservice brand owners to take into consideration when innovating for 2024, with efficiency being key. Innovation doesn't need to mean 'blue sky' big costs changes and can be as simple as getting the right flavour pairing or introducing a new format. There is also an opportunity to create new seasonal windows throughout the summer and the rest of the year to increase profitability. An example of this is the growing popularity of iced beverages all year round. While the drinks are considered refreshing, young consumers are also associating them with part of their identity.

"While consumers will continue to look for novelty and excitement when purchasing a seasonal beverage, this doesn't mean foodservice brands need to reinvent the wheel. Focusing on efficient innovation can deliver winning beverages that taste great, are simple for your back of house and cost effective," concludes Mr Sjogren.





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# Vitafoods Europe announces farewell to Geneva with relocation for 2025

**I**nforma Markets has recently announced that Vitafoods Europe, the world's nutraceutical event, will move to its new home of Barcelona in 2025. After 26 hugely successful years in Geneva, the decision comes after extensive visitor and exhibitor feedback, as well as exciting growth plans for the much-loved brand. With the global nutraceuticals market expected to grow at a significant CAGR of 9.3% by 2030,<sup>1</sup> the move will allow the event to grow in line with market potential, welcoming more visitors and exhibitors and creating more business opportunities for companies that attend. Vitafoods Europe 2025 will be held on 20-22 May 2025 at Fira Barcelona, with more details on event features, content and sponsors to be announced next year.

Speaking on the move, Natasha Berrow, Executive Vice President – Food, at Informa Markets, said, "After over two and a half incredible decades in Geneva, we're excited to announce that Barcelona will be the home of Vitafoods Europe from 2025. From humble beginnings in 1997 with just 100 exhibitors and a 2,500m<sup>2</sup> show floor, Vitafoods Europe now welcomes tens of thousands of visitors every year to connect, learn and be inspired. The move is the result of the amazing growth we've had over the decades, and our new home will allow the event – and the companies that visit or exhibit – to continue to grow in line with the fast-paced nutraceutical market."

## A new chapter

Defined by more than just its location, Vitafoods Europe prides itself on being at the centre of the nutraceutical community. Its new home in Barcelona is ideal for facilitating the growth of the event and the wider nutraceutical community. Firstly, Spain is both a key test market for new nutraceutical product launches<sup>2</sup> and one of the top 5 countries in the European nutraceuticals market, which collectively make up 66% of the market.<sup>3</sup> Plus, the city's accessibility was also a crucial selection

factor due to the provision of more direct flights, accommodation options and streamlined logistics within the EU. Barcelona has approximately 40,000 available hotel rooms<sup>4</sup> and nearly 3,000 flights departing from its airport weekly, connecting to almost 200 airports worldwide, including those in North America, South America, Asia and Africa. And the city's lively culture, attractions and food and drink make it an attractive destination, enhancing the Vitafoods Europe experience. Together, these factors will make it even easier for companies to attend Vitafoods Europe 2025 and explore new business opportunities.

Berrow further comments on the announcement: "Our goal, as always, is to serve the needs of the nutraceutical community, both now and for years to come. So, as the industry evolves, so too does Vitafoods Europe. Barcelona has been selected as our new home after extensive research and listening to both our exhibitors and visitors, carefully considering what matters most to them. What's more, Barcelona is not only a key European market for nutraceuticals, but it also has the right mix of vibrant architecture, culture and atmosphere to match the vivacious spirit of our community. And thanks to the robust infrastructure offered by both the city and the venue, Fira Barcelona, this is just the next step in a long and exciting future for Vitafoods Europe."

She adds, "We would of course like to thank the Geneva Palexpo team for a wonderful 26 years. We're excited to bring our best-ever Vitafoods Europe yet to Geneva in 2024, before welcoming in the next chapter with our much-loved community in Barcelona in May 2025."

For the latest news on Vitafoods Europe 2025, visitors and exhibitors can get more information and register interest here: [www.vitafoods.eu.com](http://www.vitafoods.eu.com)

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- 2 Frost & Sullivan, 'Global Nutraceutical Industry: Investing in Healthy Living', 2011
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# Sabinsa opens office in France

**S**abinsa, a renowned supplier of nutraceutical and cosmeceutical ingredients, now celebrating its 35th anniversary, continues its global expansion with a new office in Montpon-Ménestérol in southwest France, joining those in Germany, Poland, UK, Spain, and Hungary in the European Union. Newly appointed Sales Manager Ms. Nathalie Allaume will be responsible for sales in France and adjoining French-speaking countries, leveraging her significant experience to steer and strengthen the company's engagement with key industry stakeholders.

Ms. Allaume brings a wealth of nutraceutical industry experience to Sabinsa, with a proven track record of success in sales and marketing. Previous positions include 20 years with a sustainability-focused marine ingredients supplier as Sales and Marketing Director and over four years as Area Sales Manager with a supplier producing a range of dosage forms.

# Westfalia Fruit unveils packhouse expansion plans in Mozambique

**W**estfalia Fruit have announced a new development that underscores its steadfast commitment to propelling Mozambique's avocado sector forward. With a focus on fostering growth and innovation, the company is proud to unveil its upcoming packhouse expansion initiative.

The upgrade of the packhouse facilities is currently in progress, with an anticipated completion date set for the second week of February 2024. This expansion marks a pivotal stride in solidifying the company's position within the market while emphasising our dedication to delivering unparalleled quality and value. The expansion aims to accommodate increased demand and reinforce Westfalia Fruit's commitment to community development and collaboration, thereby enhancing Mozambique's growing avocado industry.

Having witnessed notable growth in avocado production volume throughout 2023, Westfalia Fruit is poised to elevate operational efficiency, particularly during the crucial picking and packing phases. This initiative aligns with its continuous pursuit of operational excellence and responsiveness to market dynamics.

As Westfalia Fruit embarks on this ambitious journey of growth and progress, the company extends its sincere appreciation to all our stakeholders, partners, and the diligent community of growers who have played a pivotal role in shaping our success. This packhouse expansion embodies not only the company's dedication to Mozambique's avocado sector but also signifies a significant stride towards reinforcing the local economy and promoting sustainable agricultural practices.

# Nutramax and ADM expand international distribution partnership

**N**utramax and ADM's trusted probiotic supplements brand, ADM Protexin, have announced the expansion of their longstanding partnership that will allow ADM Protexin to manage certain Nutramax brands in Europe and a number of APAC markets, with the aim to expand further internationally. This agreement builds upon the existing successful collaboration between the two organizations. Under the enhanced partnership, ADM Protexin will manage the distribution of select Nutramax brands, including Cosequin®, Dasuquin®, and Denamarin® in various international markets. These trusted Nutramax brands are known for their high-quality ingredients and researched formulas in the animal health industry. The partnership will allow ADM Protexin to leverage its capabilities in Europe to better service existing distribution channels and further expand the global reach of Nutramax brands to make the products more widely available to veterinarians and consumers around the globe.

"We are excited to expand our partnership with ADM Protexin to better meet the increasing needs for international markets," said Todd Henderson, DVM, CEO and President of Nutramax. "This is a significant step for both organizations and is a testament to our shared commitment to quality and improving the lives of animals around the globe."

This agreement is a significant milestone for both Nutramax and ADM Protexin, as it represents a new phase in their partnership and underscores their commitment to providing high-quality products to support animal health worldwide.

"The Nutramax portfolio of products aligns exceptionally well to ADM's Health and Wellness solutions, allowing us to provide our companion animal customers with a much broader array of products and capabilities" said James Kyffin, Commercial Director - Animal Health at ADM Protexin. "The ADM Protexin team could not be more excited about the expanded partnership and the opportunity to better serve our customers."

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# It's all about fermentation



he art of fermentation has a long history and is enjoying renewed popularity today. It's the foundation of many of our favorite foods such as cheese, beer and bread.

BÖCKER has played an important role in the field of bread baking since 1910 as an expert in sourdough and fermentation. Through their research and development work combined with extensive expertise in fermentation techniques, various plant-based raw materials are refined into flavor carriers that give foods that certain extra.

## Understanding fermentation process

The fermentation of plant-based raw materials while using microorganisms such as lactic acid bacteria and natural yeasts sounds simple, but is extremely complex - especially if you want to maintain the highest quality standards, as is the case at BÖCKER. Here, a profound understanding of the natural fermentation processes as well as comprehensive experience in the implementation of optimal process parameters are of essential importance.

## Application of fermentation

While the use of sourdough in bread and other baked goods is well known, the use of fermentation processes with lactic acid bacteria and yeasts open up a fascinating world of flavor refinement for a variety of other foods in a natural way. An outstanding example is the fermentation of legumes such as chickpeas, beans or peas, which are used in vegan, protein-rich food, particularly due to their nutritional benefits.

Legumes are characterized by their high content of valuable proteins, fibers, B vitamins, as well as minerals such as iron, magnesium, potassium, and zinc. This makes them a valuable addition to a conscious and balanced diet. They are also low in fat and rich in proteins - around twice as much as wheat and even three times as much as rice. Furthermore, they are gluten-free and provide a wholesome alternative to meat in a vegetarian or vegan diet.

## Legumes in food

Due to their numerous nutritional benefits, legumes are used in many products in the food industry. However, the typical undesirable off-flavors of peas and other legumes, which are perceived as unpleasant by many consumers, represent a challenge. By using fermentation processes specially adapted to the individual raw material, these aromatic notes can be reduced or even a new, individual aroma profile can be created.

## Fermented legumes

Selected microorganisms create new aroma compounds during fermentation in combination with the drying process of the product. In this way, certain aroma profiles can be developed or undesirable aromas can be reduced. For example, if you compare the aroma profile of chickpea flour with dried chickpea sourdough, you will notice clear differences in the aroma profile. While chickpea flour has a slightly fishy flavor, dried chickpea sourdough is characterized by roasted,

malty peanut flavors. This only describes one possible flavor adjustment of foods with chickpea flour. Targeted fermentation can also bring out other flavors of the same flour. The same applies to other legumes.

It becomes clear that through fermentation legumes can be used in the food industry without having to accept the undesirable influences in the product.

## New aroma profiles through fermentation

BÖCKER can use fermentation in a targeted manner and fulfill individual customer requirements in the food industry. In this way, an individual aroma profile for the selected product can be created together with the customer.

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## Newform Foods and MANE partner to power up better protein



Newform Foods, previously Mzansi Meat Co., is a food technology company leveraging a continent-spanning research and development network to help food producers develop and scale cultivated animal products, at a significantly lower cost to industry norms.

The company announced recently that it has entered into an agreement with MANE, an international flavour house leader. This agreement marks the first strategic partnership of its kind for both companies who are looking to elevate current market offerings. The partnership will focus on the taste of cultivated meat and the development of premium and cost-effective products, leveraging MANE's vast experience in food and flavour to enhance the cultivated muscle and fat across species and products.

"Newform Foods team will work alongside MANE's Cape Town and MANE Corporate teams to advance this project, with access to applicative, analytic,

regulatory and sensory flavour sciences to new product development from Newform", MANE's Vice President Savoury Category EMEA, Eric Davodeau and MANE's Vice President Strategy Development, Luis Fernandez stated recently, adding, "As leaders in flavour, functional blends and seasonings, we're excited to expand our offering and give consumers a taste of what's possible when innovation and food expertise come together. Newform Foods has proven to be a thought leader in food technology and together with our experience, we're excited to shape the future of food!"

Tasneem Karodia, Newform Foods co-founder and COO, recently said "We aim to create hybrid cultivated meat products that will blend with plant-based protein to elevate the taste, texture, colour and flavour of what's currently on the market. While Newform Foods is working to reach scale and price parity with conventional meat, hybrid products will be the first to hit the market".





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# SOLUGEL<sup>®</sup> improves physical and mental well-being for active middle-aged adults



Florida State University (FSU) clinical trial finds that SOLUGEL<sup>®</sup> (a brand of PB Leiner, part of Tessenderlo Group) supplementation for active middle-aged adults not only helps to relieve joint pain and increases their daily living activities but now also has a proven effect on the mental well-being of this demographic group.

## Joint discomfort and exercise: a catch-22

Across the globe, more and more people are doing physical exercise to improve their overall health. No less than 87% of middle-aged adults think that exercising or improving physical fitness is (very) important to create a feeling of well-being or wellness<sup>1</sup>. At the same time, joint health is a major concern for active adults worldwide. Research shows that 93% of people aged between 45 and 59 years have concerns about joint and muscle pain<sup>2</sup>. This leaves this category of people in something of a catch-22 situation: they want to exercise but they also apprehend exercising because of the joint pain. In fact, research has shown that over half of people aged 45 years+ reported they had stopped or reduced exercise due to joint discomfort<sup>3</sup>.

## Clinical Trial: the effect of collagen on active middle-aged adults

Recognizing the role that collagen plays in our aging process — collagen loss starts in our 30s, causing tissue regeneration decline in skin, muscle, and bones, which in turn leads to reduced physical function, injuries, and persistent pain – a research team at FSU set out to investigate the effect of regular intake of SOLUGEL<sup>®</sup> collagen peptides for middle-aged adults. The study participants

were all aged between 40 - 65 years and spent at least 3 - 4 hours each week undertaking activities such as hiking or cycling. They had no specific pathology but suffered from joint and/or musculoskeletal pain. After 6 months, the research evidences not only a significant decrease in joint discomfort but also indicates an increase in daily activities and mental well-being.

## Trial outcomes: less pain, more activity, and increased well-being

The double-blind placebo-controlled clinical trial showed significant improvements with SOLUGEL<sup>®</sup> on various levels. Those consuming 10 g per day of SOLUGEL<sup>®</sup> collagen peptides saw an improvement according to the Knee Injury and Osteoarthritis Outcome Score (KOOS), indicating significant reductions in pain and improvements in knee functionality.

The study also found that collagen peptides may increase the number of activities of daily living (ADL), which includes everyday activities such as commuting, cleaning, shopping, etc. One-third of those participating in the study who consumed 10g of SOLUGEL<sup>®</sup> each day saw meaningful improvements in their scores while undertaking such activities. Conversely, none of the participants in the placebo group saw any improvements.

Finally, the study also established that SOLUGEL<sup>®</sup> collagen peptides improved the mental health scores, while none of the participants in the placebo group saw any improvement. This is the first study to examine the effects of collagen peptide supplementation on The Veterans RAND 12 Item Health Survey (VR-12) and to also find significant mood improvements with the supplementation.

Dr. Michael Ormsbee, Director at FSU Institute of Sports Sciences & Medicine and the lead clinical study researcher, said: "This is the first and only study to examine not only the physical impact but also the mental component of collagen peptide intake for this demographic group: healthy active adults without pathology."

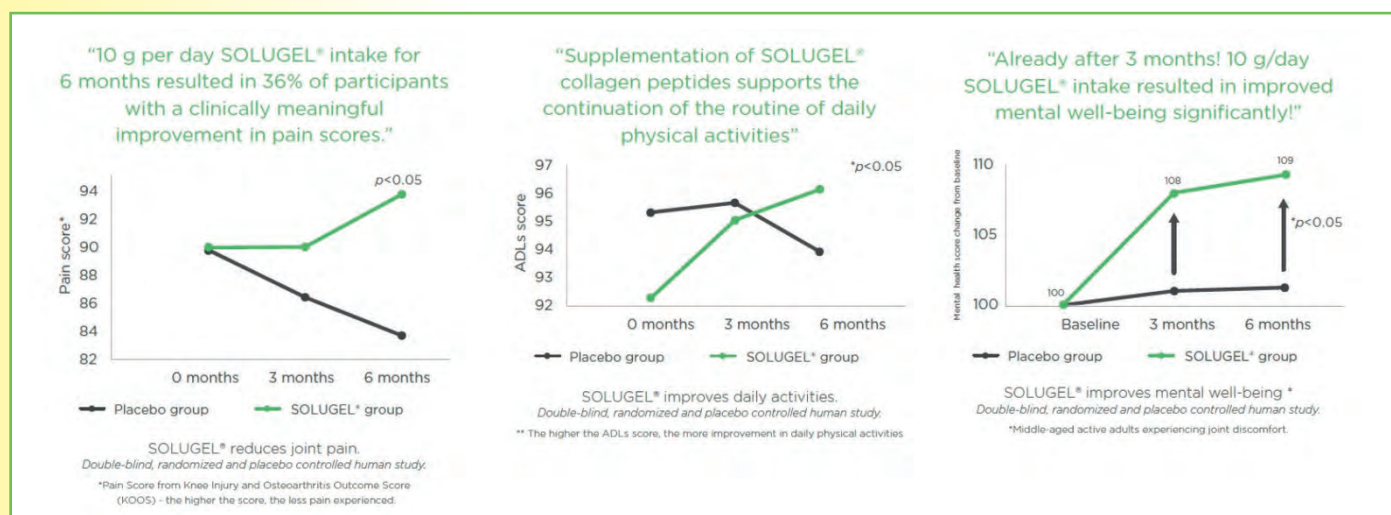
Dr. Reyhan Nergiz Unal, Health & Nutrition Science Lead at PB Leiner, said: "The potential of collagen peptides to contribute to holistic health for this demographic group is very encouraging: being pain-free and enjoying an increased activity range also has its effect on mental well-being." Dr. Nergiz Unal spoke at the 6th Nutrition in Athlete Development Summit in Barcelona (Spain) on October 10, 2023, where, among other things, she expanded on the study findings.

About SOLUGEL<sup>®</sup> collagen peptides: SOLUGEL<sup>®</sup>, one of PB Leiner's product brands, can provide support for healthy joints, skin beauty, weight management, and physical performance in a wide range of foods, beverages, and supplements. Obtained from natural animal sources, it is a highly digestible pure protein that is perfectly soluble and neutral in taste and flavor.

## References:

- 1 GlobalData Global Consumer Survey, Q3 2019
- 2 Euromonitor Global Health & Wellness Survey, 2019-2021
- 3 Arthritis Foundation - Survey: Arthritis Pain Slows Exercise (2018)

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



# Tapping into a white space in sports nutrition



Martin Walter  
Category Manager Healthy  
Aging & Sports Nutrition  
GELITA



Whilst participation in endurance sports such as running, swimming and cycling is on the increase for many years, sports nutrition hasn't quite caught up. Protein solutions for body shaping and muscle growth, as well as carbohydrate-based short-term energy options for endurance activities, dominate the market. GELITA, an innovation leader in collagen peptides, has lately launched PeptENDURE®, the market's first collagen protein that enhances the effects of endurance training long-term and increases performance as a result of adaptive changes in the muscles. By developing products with these novel Bioactive Collagen Peptides (BCP®), GELITA promises brands they can tap into an untouched market and take a unique position. We talked to Martin Walter, Category Manager Healthy Aging & Sports Nutrition at GELITA about these novel collagen peptides and their potential on a booming market.

## **Martin, what makes PeptENDURE® so unique?**

Martin: PeptENDURE® is the first performance ingredient to give people the power to adapt and achieve peak performance over the long term. There is nothing else like it on the market. PeptENDURE® promotes long-term adaptation within the body, rather than a short term boost of energy or performance. It can be thought of as a 'primer' that prepares athletes and active people for when they really need it – for their big race, tournament or competition.

## **How does PeptENDURE® work?**

Martin: Our research suggests that PeptENDURE® promotes adaptative changes in the mitochondria – the body's powerhouse cells. Additionally, two placebo-controlled clinical trials, one in men, one in women, showed impressive improvements in endurance performance.

## **Can you tell us more about these clinical trials?**

Martin: In both of these trials, participants took 15g PeptENDURE® or placebo daily for 12 weeks. At the end of the





study period, all participants took part in a one-hour running trial. The results showed that the men were able to run 660 meters further with PeptENDURE® than with placebo, and the women were able to run 330 meters further. In summary, the trials showed that participants who took PeptENDURE® were able to run 14 % faster compared to baseline, which could basically be the difference between finishing fifth in a race and finishing first. Participants also showed improvements in several markers of metabolism, including a higher lactate threshold and a reduction in body fat mass. Further studies are currently underway, including looking at how heart rate improves with PeptENDURE® during high intensity sports.

#### Where do you see PeptENDURE® sitting in the sports nutrition market?

Martin: We believe there is a genuine white space for adaptation products that help sportspeople achieve their goals. PeptENDURE® isn't just another 'quick fix' product – it is something different that will allow consumers to see long-term performance benefits.

#### Who would be the target consumer?

Martin: PeptENDURE® is the ideal training partner for anyone at any level who is looking to

### Adding a new dimension to the market

The sports nutrition market is booming, with a global value of around USD 30.6 billion in 2022, which is expected to soar to USD 64 billion by 2032. North America is leading the way, with the UK, Germany and France hot on its heels. The Asia-Pacific region is predicted to grow significantly, too, with a projected CAGR of 12.8% from 2022 to 2032, driven by consumer demand for performance-based products. While products based on protein for weight management or body composition are widely available in the sports nutrition industry, traditionally, only carbohydrate- or electrolyte-based products for endurance performance have been used by athletes for events and competitions. PeptENDURE® is adding a new dimension to the market, as it helps athletes to achieve long-lasting improvements in endurance rather than a just short energy push during the race.

optimize their performance. That includes those who take part in traditional endurance sports like cycling, swimming, distance running and triathlon, as well as team sports like soccer, American football and hockey. Because it supports the body's aerobic machinery, PeptENDURE® is also great for high-intensity gym-based exercise like spinning and indoor rowing.

#### What are the opportunities for manufacturers?

Martin: In the sports nutrition market as it stands, certain sectors are already very well catered for – such as quick fix energy concepts, and products for the more aesthetic side of sports, where it's all about building and shaping muscle mass. On the other hand, there is a huge white space of untapped potential for long-term adaptation products. PeptENDURE® enables brand owners to enter this market and build new ground.

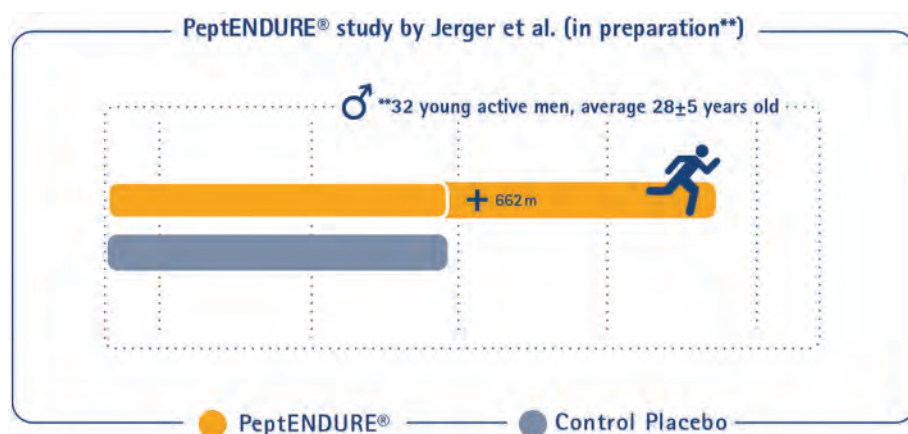


Figure 1: The men who took PeptENDURE® for 12 weeks were faster than at baseline and ran significantly more in one hour (662m) than those who took placebo

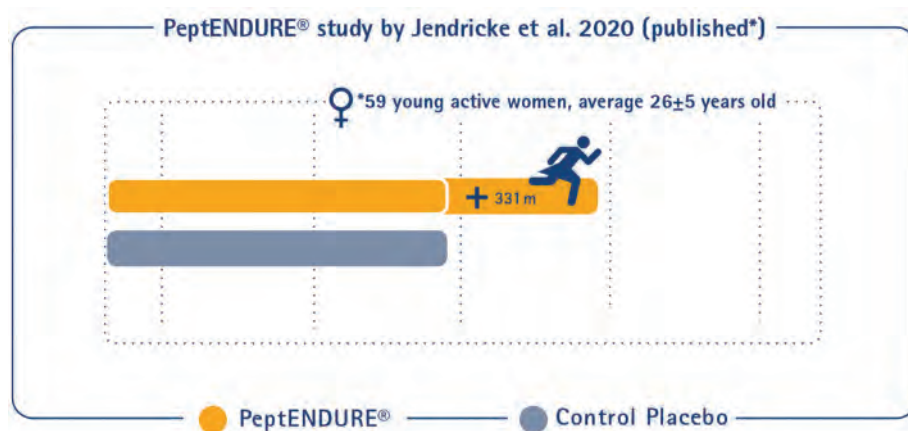


Figure 2: After 12 weeks in the women's study, the PeptENDURE® group was not only faster than baseline, but also ran 331m more than the placebo group in a one-hour time trial

#### Where would PeptENDURE® fit into a brand portfolio?

Martin: As a sports nutrition brand owner, you may have products that help athletes boost their energy during competition or training; you may have muscle-building, fat-burning products too. But the missing piece of the puzzle is something that helps consumers adapt and improve their performance, building their endurance day by

day for the longer term. By giving you this, PeptENDURE® allows your brand to deliver a holistic solution that effectively takes consumers from day one of training to competition day and beyond. PeptENDURE® would not be an 'instead of' product – it would be an 'as well as'.

#### What kind of products can be created with PeptENDURE®?

Martin: We see powders being the core



Due to its excellent solubility, PeptENDURE® is perfectly suited for ready-to-drink products



application as PeptENDURE® dissolves quickly and easily in water and other drinks. There's no need for a blender or other complicated routine – users simply stir and go. The powder can also be mixed with other foods, such as yogurt, for example, for breakfast in the morning with cereals. Alongside powders, PeptENDURE® works well in ready-to-drink concepts, gels and nutrition bars. Being 100 percent natural, it is ideal for products with clean label positioning and can be customised with different flavours and levels of sweetness to suit all preferences.

**From a technical point of view, is PeptENDURE® easy to handle during manufacturing?**

Martin: The great thing about PeptENDURE® is that it has premium properties that make it easy for manufacturers to use. Like all GELITA Bioactive Collagen Peptides, PeptENDURE® is supplied as a pure white powder. It comes in agglomerated form, which guarantees dust-free handling. It also has excellent dissolution properties and combines well with other nutrients such as vitamins and minerals. Because it is neutral in taste, manufacturers can be really creative with flavours to deliver innovative concepts that suit regional tastes in markets all over the world.

**And how about safety?**

Martin: For GELITA, safety is always our top priority with all of our products, and so it is with PeptENDURE®. Its safety has been well documented in human and animal studies. It is non-allergenic, non-GMO, gluten-free and accepted by the World Anti-Doping Agency, so athletes can consume it with confidence.



© GELITA

PeptENDURE® can be used as an everyday training partner for athletes in all endurance sports, from long-distance running, cycling and triathlon to team sports and high-intensity gym-based activities

**For manufacturers who haven't worked with GELITA before, what kind of support do you offer**

Martin: GELITA has many years of experience, especially in the field of sports nutrition. We are always happy to help our customers develop new formulations and innovative concepts. Our technical application service team is on hand to help solve manufacturing queries, and our teams can support with marketing and regulatory advice too.

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# Harnessing new plant-powered solutions for high-performing vegan gummies

By Kelly Vu, Application Scientist, Dietary Supplements, IFF's Pharma Solutions

**G**ummies are gaining major ground in the dietary supplement market – experiencing rapid growth and outpacing more traditional delivery formats. The global gummy market size was valued at USD 21.40 billion in 2022 and is expected to grow at a compound annual growth rate (CAGR) of 11.8% from 2022 to 2030.<sup>1</sup> There are several factors fueling this demand. Gummies are a convenient, easy-to-use and appealing format that can deliver a wide range of health benefits and offer a variety of flavors, satisfying consumers that are seeking great tasting supplements.

The nutraceutical gummies market - while growing - is also continuously evolving, with plant-based innovation currently taking center stage to meet increasing consumer demand for plant-based options – a demand powered by the rise in vegetarian and vegan lifestyles, as well as environmentally conscious mindsets. To cater to this need, dietary supplement manufacturers have already started innovating gummies without the use of gelatin – an animal-derived ingredient used in traditional gummy development, largely due to its functional properties and impact on overall product performance and sensory attributes. Gelatin-free gummies made up 23% of new products in 2018, a figure that rose significantly to 59% by 2022,<sup>2</sup> and today nearly 60% of gummies available on the market are free from gelatin.<sup>3</sup>

While this is an exciting opportunity for dietary supplement manufacturers, innovation in plant-based nutraceutical gummies does not come without its challenges. In this article, we explore how brands can address the technical obstacles in plant-based gummy formulation and deliver high-performing and delicious products that consumers will love.

## **Plant-based gummies: what are consumers looking for?**

Consumers want plant-based nutraceutical gummies, but they still expect the same organoleptic properties offered by the gelatin-based counterparts they are accustomed to. This has proven to be no easy feat for manufacturers, explaining why some brands are not yet tapping into this market opportunity. To tick all consumers' boxes, dietary supplement manufacturers have a lot to consider and overcome when it comes to successful plant-based gummy formulation. Plant-based gummies need to be more than 'just' vegan.

### **The right bite**

Achieving the right texture and mouthfeel is a priority when it comes to developing gummies. Many of today's consumers grew up with gelatin-based gummy confectionery, and therefore look for the same firm, chewy & elastic texture from their nutraceutical gummies. However, the sensory properties of plant-based gummies can be different from those of gelatin-based options, which is a major challenge for brands innovating in the plant-based gummies space.

### **Look good, taste good**

Two key aspects that consumers expect from their nutraceutical gummies are aesthetical appeal and great taste. The formulation of gummies can have an impact on the look and flavor of the final product. This is because there are specific requirements for pH for gummy formulation - and when switching from gelatin to, for example, pectin – a popular alternative to gelatin for plant-based gummies – dietary supplement manufacturers must change the pH of the formulation (adding more acid), and this can have an impact on the attributes of the final product, such as color and flavor release.

## **Consistency is key**

Batch to batch consistency is essential when it comes to offering consumers a product they can rely on and is important for brand loyalty. Gummies need to achieve the same consistency every single time, and this is reliant on manufacturers' ability to control -and maintain- consistent gel strength.

## **Benefits of formulating with plant-based gummies**

Before homing in on the technical challenges brands face in meeting consumers' expectations, let's spotlight the advantages that formulating plant-based gummies can bring. Beyond capitalizing on consumer demand for plant-based gummies and seizing market share in this space, dietary supplement brands also stand to benefit from a more stable final product when going plant-based. That's because plant-based hydrocolloids have higher temperature requirements for hydration and depositing, increasing thermal stability and therefore less susceptibility to melting or clumping during transit. For example, gelatin melts at around 35°C, compared with pectin, which melts at around 143°C.<sup>4,5</sup> Due to the low melting point of gelatin, gelatin-based gummies can lose structural integrity in higher temperatures and stick together. As a result, some manufacturers have had to arrange for the transport of gelatin-based gummies in temperature-controlled vehicles, increasing distribution costs. Producing gummies using pectin eliminates transportation related problems.

However, despite these benefits, the differences between the properties of gelatin and pectin mean supplement manufacturers need to evaluate and manage the impact of the switch on their operations and gummies. Differences can be accommodated through changes to existing



facilities that make gelatin-based gummies. Pectin's excellent thermostability, while an advantage for the finished product, forces manufacturers to adapt their processes. Similarly, manufacturers must assess how differences between the viscosity of pectin and gelatin will affect their ability to move material through their process.

#### Formulation challenges

Every manufacturer has their own unique formulation and application needs when it comes to developing nutraceutical gummies. Here, we explore some of the key considerations and hurdles that must be overcome when formulating plant-based gummies.

#### Gel strength and consistency

Working with new ingredients can be challenging and manufacturers need to understand the properties of plant-based hydrocolloids in order to control them and maintain high quality consistent final products. Precise control of gummies' gel strength is essential to achieve the right – and consistent – texture, bite, chew, and flavor release.

#### Flexibility and cost-in-use

When considering cost-in-use, it is important to note that some plant-based hydrocolloids can be higher in cost per kg. They are also often not thermo-reversible, limiting the ability for the material to be re-melted and re-used, thus limiting flexibility in adjusting levels of ingredients to, for example, achieve desired results in the final product and meet label claims. Some hydrocolloids, like pectin, cannot be re-melted and re-used, unlike gelatin.

#### All set for success?

There can be formulation issues related to interactions or compatibility of nutraceutical ingredients and hydrocolloids that can affect the ability to set plant-based gummies. Gelatin sets through a hot, cold mechanism and results in a gummy with a desirable texture. Pectin, on the other hand, requires acids and sugars to bring the pectin molecules closer together to interact. These additional materials need to be managed to control gummy texture and setting.



Balancing flavors, nutritional ingredients and hydrocolloids are critical elements in a vegan gummy's success, so it is crucial to fully understand how all ingredients in a gummy interact with each other and how to leverage these interactions to an advantage.

#### Working with an experienced partner

Dietary supplement manufacturers can manage the transition from gelatin to plant-based alternatives, like pectin, by working with a provider that has comprehensive and extensive portfolios (e.g., hydrocolloids, nutraceutical ingredients, flavors, colors and sugar/sugar replacement options) that encompass all aspects of gummy formulation.

To help dietary supplement manufacturers overcome their challenges, some raw material suppliers are enhancing plant-based hydrocolloids with diverse blends of hydrocolloids and buffering - tailoring hydrocolloids to gummy formulations, including specialized applications like sugar-free or mineral gummies. Advancements in natural flavors and modulators are also playing a pivotal role in masking the unpleasant taste of certain nutraceutical ingredients and sugar replacements. Examples include bitter blockers and sweetness

enhancers, as well as general taste masking for flavor profiles, such as herbals, amino acids and vitamins.

Suppliers that understand how to make gummies using alternative ingredients can consult on adapting raw material processing and standardization methods to create hydrocolloids specific to application parameters for gummies and/or application intentions. They can also advise on the development of a consistent, reproducible manufacturing process and adapt the recipe to fine tune the sensory properties of gummies. One such provider is IFF's Pharma Solutions division, which helps its customers in the dietary supplement space with tailored support for the formulation of plant-based gummies with pectin. IFF has made specific grades of pectin for specific applications, by controlling either the gel strength, the setting temperature as required - a processing parameter that supports efficiency and flexibility in processing - and the amount of solids that the type of application system typically requires. IFF manufactures a pectin that can handle high solids content, so customers can benefit from rapid de-molding to streamline production. The company also tailors its specialized pectins to a specific gel strength to consistently achieve the



mouthfeel and texture needed in the final gummy.

IFF's GRINDSTED® Pectin Premium range is made from sustainably sourced raw materials and enables the development of vegan gummy supplements with exceptional functionality. Unlike standardized pectins that are available on the market, IFF's easy-to-use gelling agent adapts to manufacturers' unique processes and formulations – bringing unmatched flexibility and proven effectiveness at low use levels and cost-efficiency. It is tailored to ensure consistent gel strength for consistent gummy properties and deliver a uniform, high-clarity and shiny gummy with excellent flavor release and enjoyable bite. Additionally, it exhibits fast gelation behavior, helping to reduce the risk of pre-gelation and grainy texture. Furthermore, the solution offers slow setting and low setting temperature, is suitable for quick demolding, has high temperature stability and ensures reduced risk of gummies sticking or melting.

### Reaping the rewards from innovating with plant power

The plant-based gummy market is thriving and as innovation drives diverse flavors, textures, and functional benefits, the popularity of plant-based gummies is set to soar further still. However, navigating the complexities of creating vegan gummies that meet all consumers' expectations can present substantial formulation hurdles. Achieving the perfect balance between flavors, dietary ingredients, and hydrocolloids is critical to a vegan gummy's success. A profound grasp of ingredient interactions is essential and partnering with suppliers that offer vast expertise in gummy formulation and a pioneering range of nature-derived functional ingredients, with comprehensive portfolios spanning hydrocolloids, nutraceutical ingredients, flavors, colors, and sugar replacements, can be a game-changer for brands looking to break into this innovative space.

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**Rousselot & Gelnex, Stand 3F240, Food Ingredients Europe, 28-30 November 2023, Frankfurt**

## Rousselot and Gelnex team up to showcase collagen and gelatin expertise at FiE 2023

**R**ousselot and Gelnex, Darling Ingredients' premier gelatin and collagen brands, will be showcasing their collagen and gelatin expertise at Food Ingredients Europe (FiE), Nov. 28-30 in Frankfurt, Germany.

Attendees can discover the company's cutting-edge advancements in collagen and gelatin technology; including the science behind their benefits, new product concepts, and how food and nutrition brands can create market-leading health and wellbeing products using these multifunctional ingredients.

"By combining two world-leading collagen and gelatin producers, Rousselot and Gelnex bring an unparalleled range of products, solutions and scientific expertise to the market," said Alexandre Assis, Managing Director of Rousselot EMEA. "We invite FiE attendees to meet with our experts, learn about the wonderful versatility of collagen and gelatin ingredients and discover the benefits they can bring to food and nutrition brands."

At the company's "collagen throughout the day" stand area, attendees can discover the limitless applicability of Peptan®, Peptinex®, and Protake® collagen solutions through a selection of delicious prototypes, including coffee, pancakes, breadsticks and dips, soups, chocolate and gummies. Sampling sessions will be offered throughout the conference.

The gelatin corner will highlight the many functional properties that make gelatin the ingredient of choice for natural-tasting treats and better-for-you product formulations.

Through a deep-dive into the wide Rousselot-Gelnex offering, visitors will gain a tangible perspective on the unmatched versatility of the



company's gelling agent, and the many product concepts available.

The company will also showcase an innovation area filled with unique products, concepts and trend insights developed at Rousselot's state-of-the-art global application center. Visitors are invited to attend the continuous demonstrations of new recipes and formulation strategies taking place on-stand, such as how to boost a gummy's Nutri-score from D to A with lower sugar and higher fiber content.

Stijn Bossier, Technical Support Manager at Rousselot, will also be showcasing the newest advancements in functional gummies in a

presentation entitled "Functional gummies: What's next?". Join the expert at 3 pm CET, Nov. 29, 2023, at the Exhibitor Showcase Theater to uncover the insights.

To learn more or connect with Rousselot-Gelnex's experts, stop by booth 3F240 or visit:

**Rousselot**  
A Darling Ingredients Brand

[www.rousselot.com](http://www.rousselot.com), [www.gelnex.com](http://www.gelnex.com)



# Velvety plant-based innovations: Natudry-Millette



Millet is considered one of the most sustainable cereals in the world. According to the FAO, 2023 is the year of the Millet and this for several reasons:

- **Water Efficiency:** Millet requires less water compared to many other staple crops. This makes it a valuable crop in areas prone to drought.
- **Soil Health:** Millet can grow in less fertile soils and can thrive in areas where other crops might struggle. This ability reduces the need for chemical fertilizers.
- **Heat and Drought Resistant:** Millets are hardy grains that can withstand higher temperatures and drier conditions, making them well-suited for regions with challenging climates.
- **Pest Resistance:** Many varieties of millet are naturally pest-resistant, reducing the need for chemical pesticides.
- **Short Growing Season:** Millet has a relatively short growing season, allowing farmers to produce food in a shorter time frame and possibly enabling multiple harvests in a year.
- **Carbon Footprint:** As a result of requiring fewer inputs (like water and fertilizers) and being well-adapted to its growing conditions, millet tends to have a lower carbon footprint compared to more input-intensive crops.
- **Biodiversity:** There are multiple types of millet, such as pearl millet, finger millet, and foxtail millet, to name a few. Cultivating diverse varieties can contribute to agricultural biodiversity, which is essential for a resilient food system.
- **Nutritional value:** millets are nutritious, offering vitamins, minerals, and essential amino acids. They are often gluten-free, making them a valuable grain for those with gluten intolerances or sensitivities.

Our latest innovation, Natudry-Millette powder is a champion of luscious smoothness and delicate sweetness. It is produced via a completely natural production process without the use of any chemicals. Natudry-Millette is more than a mere plant-based ingredient; it's a tender, sweet manifestation of the millet fields themselves and a perfect ingredient for formulating a velvety vegan chocolate, or ChocoMillette.

Formulating vegan chocolate can be challenging because traditional chocolate recipes rely heavily on dairy ingredients like milk powder and milk fat. When creating vegan chocolate, you need to find suitable replacements for these

animal-derived components while still achieving the desired taste, texture, and appearance. There are some difficulties one may encounter when formulating vegan chocolate:

- **Finding a milk substitute:** one of the primary challenges is finding a suitable milk substitute. Common options include ingredients based on

almond, soy, coconut, rice, oat, and of course our latest innovation millet. Each has its own flavor profile and texture, which can affect the final chocolate's taste and texture.

- **Achieving creaminess:** traditional chocolate is known for its smooth and creamy texture, which comes from milk fat. Vegan chocolate formula-

**meurens natural**

**NEW**

## Veganize your Chocolate with NatuDry-Millette

Discover our NatuDry-Millette, a unique Millet powder obtained in a completely natural way. Replace milk by NatuDry-Millette and create your own **ChocoMillette**

**Specifications of NatuDry-Millette**

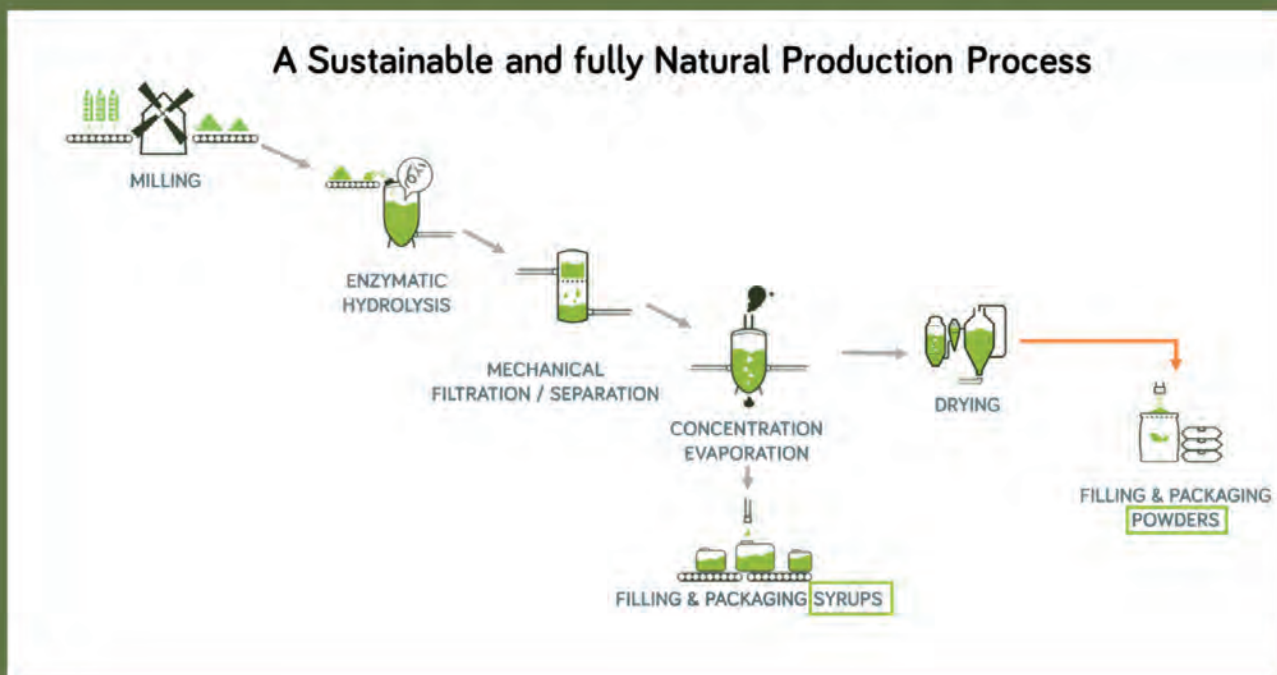
- Dry matter: 96%
- Dextrose equivalence: 25
- Lipids: 0,3%
- Easy to use

**NatuDry-Millette allows for clean & clear labeling**

- Natural process
- No additives
- Soy free
- Kosher
- Halal

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tions often require alternative fats like cocoa butter or plant-based oils, but achieving the same level of creaminess can be tricky.

- **Balancing ingredients:** replacing milk and milk fat in chocolate can disrupt the balance of ingredients in the recipe. It may require adjustments to the cocoa content, sugar, and emulsifiers to maintain the proper texture and flavor.
- **Avoiding lumpy texture:** vegan chocolate can sometimes become grainy or lumpy due to improper mixing or inadequate emulsification of the plant-based drink substitute with the cocoa solids. This can be especially challenging when using certain dairy alternatives.
- **Flavor Profile:** achieving a rich, chocolatey flavor is essential. Some plant-based drink substitutes can impart their flavors to the chocolate, which may or may not always be desirable. Careful selection of plant-based drink substitutes and cocoa varieties is necessary to ensure a balanced taste.
- **Sweeteners:** vegans often use alternative sweeteners like agave nectar, maple syrup, or coconut sugar. Finding the right sweetener that complements the chocolate's flavor without being overpowering can be challenging.
- **Stabilizing the chocolate:** traditional chocolate contains milk proteins that help stabilize the product. In vegan chocolate, finding suitable stabilizers and emulsifiers to maintain a consistent texture can be a challenge.
- **Melting properties:** vegan chocolate may melt differently from traditional chocolate due to variations in fat content and melting points of the ingredients. Achieving the right melting and tempering properties can be difficult.
- **Allergen considerations:** when formulating vegan chocolate, it's essential to consider potential allergens, such as nuts and soy, which are often used as milk substitutes. Labeling and managing cross-contamination risks can be challenging.

Combining Natudry-Millette with cocoa results in a confectionery jewel where velvety indulgence meets mindful and sustainable consumption. It is a perfect blend where the gentle strength of

Natudry-Millette meets the robust, bold charisma of cocoa.

### Meurens Natural: Pioneering the Way in natural cereal solutions for vegan chocolate

Meurens Natural has been a pioneer in the organic sector and continues to be 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, we are able to offer

our customers ingredients that are all natural and organic. As the European specialist in cereal hydrolysis, Meurens Natural can hydrolyze a wide variety of cereals using flour and not only starch as in the conventional glucose industry.

Meurens Natural is a trailblazer that has earned an unrivaled reputation as the European expert in hydrolyzed cereal syrups, powders, and proteins. With a steadfast commitment to quality, innovation, and sustainable practices, Meurens Natural has become an industry standard when it comes to





cereal hydrolysis.

With innovation at its core, Meurens Natural provides aside from NatuDry-Millette different cereal-based solutions for the production of vegan chocolate:

#### **RICE POWDER (SIPADRY® RICE - NATUDRY® RICE)**

Some food formulations do not allow for liquid rice syrup because of solubility issues. Meurens Natural has therefore developed RICE POWDER. RICE POWDER is a dehydrated organic or natural rice syrup, obtained by the hydrolysis of rice flour using natural enzymes (GMO free), then dried by atomization. This results in a light-yellow colored powder with a rice and lightly sweet flavor, and provides viscosity once diluted. It can also function as a natural lower calorie bulking agent when replacing refined sugar and simply declared in your ingredient list as rice powder.

Rice powder can be a suitable replacer for dairy milk in vegan chocolate products for several reasons:

- Mild flavor: Rice powder has a mild, slightly sweet flavor that doesn't overpower the taste of chocolate. This mildness allows the chocolate flavor to shine through, making it a good choice for maintaining the intended taste in chocolate-based recipes.
- Allergen-friendly: rice powder is naturally free

from common allergens such as nuts, soy, and lactose, making it a safe option for people with allergies or dietary restrictions.

- Low in fat: this can be beneficial when you want a lighter, less fatty texture in your vegan chocolate products.
- Easy digestibility: Rice powder is generally easy to digest, making it suitable for individuals with sensitive stomachs or digestive issues.

#### **OAT EXTRACT (SIPADRY® OAT GF ND - NATUDRY® OAT GF ND)**

Dehydrated oat syrup is an oat powder obtained by hydrolysis of oat flour using natural GMO-free enzymes which is then dried. This powder comes with a beige color and an oat flavor.

Just as rice powder, oat powder can be used in food preparations where water-based liquids are not favorable (such as chocolate). Oat powder has gained popularity as a milk replacer in vegan chocolate products for several reasons:

- Creamy texture: oat powder has a creamy consistency that is similar to dairy milk, making it a suitable replacement in recipes that require milk. This creaminess contributes to the overall mouthfeel and texture of vegan chocolate products.
- Flavor: oat powder has a relatively neutral flavor compared to some other plant-based alternatives like almond or soy milk. Its mild taste allows

the chocolate flavor to shine through without any overpowering nutty or beany notes, making it an excellent choice for chocolate-based products.

- Allergen-friendly: Oat powder GF ND is free from common allergens like nuts, soy, and gluten, making it a suitable choice for individuals with allergies or dietary restrictions.
- Sustainability: oats are a sustainable crop to cultivate, requiring less water and land compared to some other plant-based sources like almonds. This can make oat a more environmentally friendly choice for those concerned about sustainability.

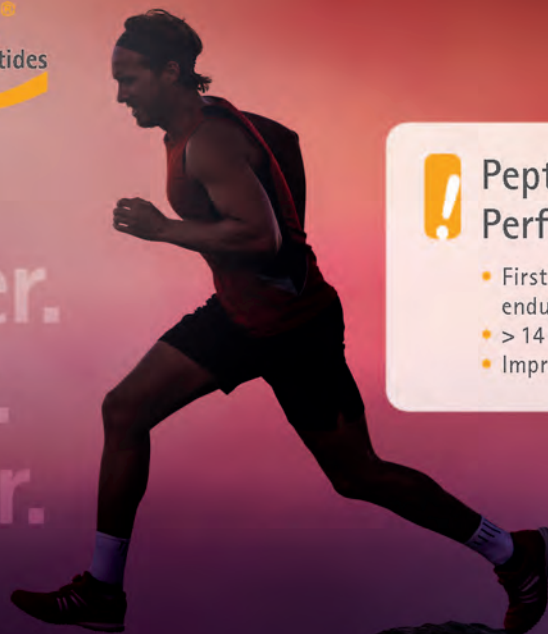
Oat powder is easy to formulate with, and you can simply declare it as oat powder.



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# According to AI: What consumers really want from healthy snacks

Harbinder Maan, Associate Director of Trade Marketing and Stewardship, Almond Board of California

**P**ersonal health and wellbeing continues to be a key concern for consumers so it's no surprise that this is also a consideration when it comes to choosing snacks. However, "healthy" isn't always the only factor consumers are looking for when choosing which snacks to buy. We've analysed data from Tastewise, an AI-powered food trends prediction and intelligence startup, to understand the growing trends across social media when it comes to healthy snacking and determine what consumers are actually looking for, and how almonds can support manufacturers innovating in line with these demands.

## Functional snacking:

Many consumers aren't just looking for snacks which are healthy in general, but ones which meet specific nutrition/health demands. Protein is a key nutritional demand when it comes to healthy snacks, with social posts containing "protein" alongside "healthy snacks" growing by 50% YOY and protein bars being a top trending dish in the healthy snacking space<sup>1</sup>. Almonds are a great ingredient choice for manufacturers looking to create products which are a source of protein as almonds contain 6 grams of protein per 30g serving and pair well with other plant proteins like legumes and lentils.

When it comes to specific health concerns, manufacturers can feel confident when using almonds to respond to a wide variety of consumers' health goals as they are one of the world's most researched foods with over 200 scientific publications to date evidencing their positive impact on heart health, cognitive function, weight management and skin health to name a few. According to Tastewise, gut health is a key health concern consumers are looking to address with healthy snacks, with a 24% YOY increase in social posts relating to "gut health" and "healthy snacking"<sup>1</sup>. Recent research found that almond consumption could be linked to a healthier gut. The study from Kings College London reported that almonds may improve the gut microbiome by increasing microbiome diversity, while decreasing relative levels of potentially harmful bacteria<sup>2</sup>.

## Plant-forward thinking:

As momentum for plant-based continues, consumers are also driving demand for plant-

based healthy snacks. In fact, according to Tastewise, vegan is the dominating diet in the healthy snacks category<sup>1</sup>. In addition to their plant protein content, almonds can support manufacturers looking to create plant-based snacks as they have an extensive portfolio of formats including whole, sliced, slivered, flour, paste, butter, oil and milk – meaning there are endless



possibilities for creating new and exciting plant-based snacks. This versatility can also support with taste and texture concerns which are often associated with plant-based products. For example, smoother almond forms such as almond paste can be used to create a creamy texture in plant-based confectionery-based snacks that is often difficult for manufacturers to emulate.

Consumers are also increasingly looking for plant-based foods in different cuisines that can offer new flavour experiences. According to Tastewise, the fastest rising cuisine for healthy snacks is Korean, with a YOY growth of 96%<sup>1</sup>. Almonds can support flavour innovation as they are a great flavour carrier and pair well with many ingredients, whether sweet or savoury. For example, defatted almond flour, which is higher in protein than regular almond flour or meal, has an extra-fine texture and clean taste which allows other ingredients to shine through when used in product formulation so flavours can really stand out.

## Healthy indulgence:

Despite the current economic climate causing many consumers to have to tighten their belts, consumers are still willing to spend money on food which lifts their mood, so it's no surprise that indulgence is a growing consumer need for healthy snacks. In fact, social conversations around indulgent healthy snacks are growing by 53% YOY<sup>1</sup>.

Not only do almonds bring a health halo to

indulgent snacks thanks to their health credentials, but they can also support manufacturers who are looking to elevate indulgent snacks, such as those in the confectionery space. Healthy snacks containing chocolate account for 15% of all social posts relating to healthy snacks<sup>1</sup>, and almonds are the number one ingredient choice globally when it comes to consumers' chocolate preferences, with consumers believing they make chocolate tastier, more satisfying and more indulgent<sup>3</sup>.

## Sustainable snacks:

Sustainability remains a high priority in consumer purchasing decisions with consumers appreciating transparency from brands when it comes to their supply chain. In terms of specific sustainability concerns, food waste is a key consideration when it comes to healthy snacking, with social content relating to it growing by 51% YOY<sup>1</sup>.

Manufacturers can feel reassured knowing that zero-waste is a key area where California almond farmers are innovating. Everything that is grown in the orchard is put to good use and research is currently underway to find more innovative uses for almond co-products. For example, almond hulls contain significant amounts of extractable sugar and antioxidants that can be used to make products such as nutraceutical bars, dietary supplements, skincare products or even for brewing beer.

In conclusion, there's opportunities abound for manufacturers when it comes to healthy snacking. As a responsibly grown, plant-based ingredient with a strong nutritional profile and 14 different forms to aid innovation, manufacturers can feel confident using almonds when developing healthy snacks which meet consumers' varied and evolving demand.

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# The future of plant-based foods and taste solutions



By Wara Pirzada,  
Application Technologist IV

## Diving into the plant-based trend

We are living in a period of great change in many ways, and consumers' changing demands for food products have far-reaching consequences throughout the food value chain. This is no more pronounced than in the demand for foods that are healthier for people and the planet – epitomised by the disproportionate growth in plant-based foods in the last few years.

As the food industry tried to cater to the growing demand for plant-based food, they mainly targeted flexitarians – consumers keen on replacing part of their meat/dairy intake with products that look, taste, and feel like meat/dairy but which contain reduced meat and dairy for

ethical, animal welfare, environmental, and/or health reasons<sup>1</sup>. Therefore, began the race to make plant-based food indistinguishable from the real deal. This is where the challenges started.

## The switch to a flexitarian diet

Consumers are increasingly focusing on eating more plants and reducing, not avoiding, animal-based ingredients, while also expecting high-in-protein, clean labels and affordability:

According to the FMCG Gurus survey in 2022, consumers looking for more variety in their diets while eating less meat, "flexitarians", rose from 26% in 2020 to 31% in 2022.

In another survey, 47% of global consumers

are following a diet around the avoidance or moderation of animal products (Mintel).

## The struggle with taste & nutrition

However, because flexitarians alternated between animal and animal-free products, the comparison between plant-based and conventional meat or dairy remained front and centre, with most customers not finding the products doing justice to the actual flavour experience of the thing being imitated, despite claims like "almost real." On top of this, meat alternatives tended to cost more than conventional meat products<sup>2</sup> and alternative dairy-like cheeses tended not to provide the same nutritional value as conventional





cheeses do<sup>3</sup>, ultimately leading to few repeat customers.

#### Plant-based innovation

Thanks to technological advancements, plant-based innovation has been incredible. Whether genetically engineering certain compounds critical to animal protein or using precision fermentation to turn cells into protein-making machines, we have come a long way. While early on, certain alternative meat companies could mimic "heme" like compounds found in blood, certain dairy alternative companies have claimed to have successfully created a "casein" like protein found in animal milk, to give the same stretch to vegan cheeses that conventional cheeses have. Also, mimicking the taste of or developing the fermentation process plays a key role in the plant-based cheese world.

Meat protein alternatives do not stop at plant-based. Given the rise in consumer interest in animal cruelty, "slaughter-free" or "cruelty-free" meat and dairy are emerging based on more complex technologies around 3D printing of meat and cultured meat.

All of this means that we cannot predict where trends, regulations and innovation will lead, but it is likely that a hybrid between meat and plant-based will continue to grow as it caters to consumers who want to get the best of both worlds.

#### Innovation challenges and solutions

When it comes to repeat sales, taste is king and this means both flavour and texture play a crucial role. If developers claim something to be a "chicken," consumers want to see the juicy

muscles and taste the white meat; if they claim they created "cheese," they want to see it stretch and brown and experience the mouthfeel.

#### Masking off-notes and boosting flavour

One of the biggest challenges faced by companies producing plant-based products is off-notes. Certain off-notes are inherent to plant proteins, such as bases of soya, pea, wheat, mushroom and others, resulting in bitterness, astringency, chalkiness or just a generic beany and earthy protein taste. Developers are looking for masking solutions to make sure no undesirable notes are left in the finished products. Luckily, taste

modulation tools like off-note maskers can help reduce the undesirable taste and in parallel, can even boost the meat or dairy flavour put into the products working in synergy with other flavour components to make the product taste more desirable.

#### Bringing juiciness and mouthfeel to the fore

Turning a soybean into a meat fibre-like structure is a task. As plant proteins are treated to make them look like 'meat' through extensive processing like extrusion, the resulting product tends to be very dry. Dryness is also one of the major problems faced by companies producing vegan products. Ingredient developers have also developed modulation technologies to combat the issue of dryness and make these products more moist, juicy, succulent and enticing.

#### Experiencing the umami/mouthfeel

When it comes to dairy alternatives, eliminating the dairy fat compromises the milky and creamy mouthfeel, making the products appear flat. Adding plant-based fat as a substitute can give an oily mouthcoating that may be undesirable. Flavour technologies existing today offer solutions that boost the creamy mouthfeel and taste, giving the product more body even in low-fat systems, without any off-putting oily mouthcoating, making the products richer in taste and texture.

In parallel, the democratization of umami leads to a certain expectation of this taste in products like meat alternatives. Umami solutions can be found in a wide range and can provide neutral or specifically oriented profiles to boost the deliciousness of vegan products.

#### Flavour signatures expertise

Creating a 'meat-like' or 'cheese-like' product may be easy, but differentiating a 'cheddar' from 'Parmesan,' or to make it more complicated, a 'breast meat' from 'thigh meat' may be challenging, but it is essential. These problems often exist with vegan seafood. Nitrogen compounds-amines-are widely used in the creation of vegan seafood precisely to make the seafood product taste and smell fishy. However, making a 'Cod' taste different from a 'Salmon' --instead of generic fishy- is where the flavourists' expertise plays a key role by delivering the flavour note that makes the difference.





### Better, healthier?

With the word "Plant-Based" comes an inherent expectation of it being better or healthier for you. While some products make claims on protein content, some protein sources may not have a high enough protein digestibility-corrected amino acid score (PDCAAS) to make such declarations; thus, mixing proteins for nutritional value or functionality is widely seen. Since the ingredients in the products may not alone be able to provide that option, many product developers have also opted for fortification to make nutritional claims. When it comes to taste, table salt, sugar, and fat are known to make products taste good; however, they also come with health risks. Fortunately, various taste modulation technologies can help product developers achieve their sodium, sugar and fat reduction goals without compromising the product's taste, helping developers to meet consumer and regulatory demands for healthier food.

### The future of plant-based alternatives

2020 saw a rise in different plant-based products' innovation and launch. However, this growth has been stunted by the limitations on taste, texture and price compared to conventional products. But this is not the end of this trend. For example, it is now easier to find and eat plant-

based alternative dishes at restaurants, with some focus on ethnic versions, where meat usually remains at the centre of the plate. According to the Plant Based Foods Association (PBFA), four times more foodservice operators plan to increase their plant-based offerings in 2023 while the current offerings are expected to remain stable<sup>4</sup>.

We are now witnessing a revaluation of this market trend, with some categories decreasing and some of the trendier brands falling back on their investment or dropping out of the market entirely. Meanwhile, meat alternatives like minced, nuggets, balls and sausages are becoming more common while niche markets for plant-based alternatives to foie gras, eggs, seafood and specific meat pieces are likely to grow.

### Consumers' last words

Conventional animal protein production still has a more significant impact on the environment with more significant water, land, and energy consumption and higher greenhouse gas emissions. Furthermore, reducing animal protein consumption remains a way to reduce animal suffering and the risk of animal-borne diseases and antibiotic resistance. Consumers today are increasingly aware of these realities and desire healthier and more sustainable options.

Plant-based products are and never were here

to replace conventional meat or dairy products. However, as awareness grows, the need for these products to meet the health, sustainability and taste demands of discerning consumers will rise. As a flavour solutions manufacturer, we try to take note and understand market trends and develop and suggest products to help food producers keep pace with the changing reality of the market.

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# More than refreshment: Concept development in the age of the functional beverage

By Fredrik Hjelmqvist, Senior Vice President Beverages & More  
dsm-firmenich

**H**ealth, novelty and above all – functionality. These are the qualities today's consumers want to see in their beverages. Whether it's fruity, vitamin-infused carbonated water, post-gym protein shakes with a cognitive performance boost or indulgent after-dinner drinks, consumers are choosing products that quench their thirst, and provide added benefits. This is the story the beverage industry has told itself, but the true picture is a little more complex. Curiosity around functional drinks is undoubtedly there; according to Mintel, 93% of consumers surveyed were attracted to beverages with health and wellbeing claims, but just 12% reported actually consuming them on a regular basis.<sup>1</sup> Clearly, there is a disconnect between interest and uptake, but this challenge is far from insurmountable. With the right combination of consumer insights, quality ingredients and an expert partner to help guide through the evolving regulatory landscape, brands can secure their spot on the front line of beverage innovation just as the functional revolution truly gets going.

## What consumers want

For the functional beverage consumer, drinks mean much more than just refreshment. Priorities in this area include specific health and wellbeing claims that act as a product's 'headline' appeal and nutritional claims like protein and sugar content. Additionally, factors like 'naturalness' can be critical for moving a product from one-time curiosity to a regular basket staple. Finally, underpinning everything is the paramount goal of creating a delicious taste and a satisfying texture.

Putting the spotlight on targeted claims, hydration comes out in front. Arguably the most basic human nutritional need, it's unsurprising that effective hydration tops the list of consumer priorities in functional beverages. Indeed, 70% of Mintel survey respondents cited it as the functional claim that most interests them.<sup>2</sup> The mirror concerns of energy and relaxation come next, with just over half naming them as their main goal in consuming functional drinks.<sup>3</sup> Beverages aimed specifically at providing energy enhancement have developed a 'bad' reputation over the years as sugar-laden quick fixes that leave even the most hardened coffee drinkers jittery.<sup>4</sup> But in recent years a more natural approach to energy drinks has



emerged – one that centers controlled highs, and equally recognizes that what goes up, must come down.

This is where calming and mood stabilizing claims find their audience. Consumers looking for a brief escape from the whirlwind of everyday life are turning to beverages promising to provide stress relief, improved sleep or just a sense of relaxation. Inextricably linked to this 'calm craze' through the burgeoning holistic health movement, digestive, cognitive and immune health are also top priorities for stressed shoppers. In fact, more than 70% of consumers in a recent Global Data survey<sup>5</sup> called gut and immune support 'the most appealing functional beverage benefits', while Mintel found that almost a third of energy drink consumers would be motivated to buy a product proven to promote brain health.<sup>6</sup>

Functional beverage fans are equally concerned with what's printed on the label as what's inside the bottle. Blurring the lines between specific benefit and nutritional claims, vitamin and mineral content is something consumers want to see. Just under half of the drinks consumed by survey respondents in early 2023 contained vitamins and minerals, while 52% stated they checked product packaging for their inclusion before buying.<sup>7</sup>

As well as the trending claims listed above, consumers now expect assurances like 'low sugar', 'sugar-free' and – increasingly – 'natural'.<sup>8</sup> Though debate rages as to which came first; a shift in consumer attitudes or regulatory change, the fact remains that standards around sugar content in beverages are tightening. As an example, The European Soft Drinks association, UNESDA, extended its 2025 sugar reduction targets by a further 10%<sup>9</sup> following a review of their initial goals, and many other global authorities have similarly introduced or amped-up their sugar reduction targets. On the point of 'naturalness' too, shoppers are becoming more critical. Research from dsm-firmenich found that well over three quarters of beverage consumers wanted to know whether a product contained natural or artificial colorants, with non-synthetic options securing significantly higher purchase intent.<sup>10</sup>

To summarize, consumers are on the hunt for products that target hydration, energy, relaxation, sleep, gut health and immunity, wrapped up in a low-sugar, all-natural package. The task now for drinks manufacturers is to deliver on this multitude of consumer priorities.

## Dialing up functional content

Let's turn to the ingredients brands need to



address specific health and wellbeing goals. In the arena of hydration, electrolytes and vitamins and minerals like potassium are king. As stable, inorganic compounds, minerals are relatively easy to incorporate into beverage formulations, requiring only the careful management of flavors to mask any salty or metallic off-notes. Vitamins, in contrast, tend to be more sensitive to interactions with other ingredients, making them more challenging to manage. Some types (vitamins A, D, E and K) are also fat soluble, meaning they require extra stabilization before they can be dissolved in water-based beverages.

For energy-focused drinks, caffeine and B vitamins remain the front runners in this space, but proteins (including collagen peptides), branched-chain amino acids (BCAAs), and vitamin-like substances like Coenzyme Q-10 are gaining popularity thanks to their proven sports recovery and general health benefits.<sup>11,12,13</sup>

The realm of mood and mind is perhaps the most exciting in terms of functional ingredients as there are simply so many options trending at any given time. Right now, adaptogens like ashwagandha and reishi mushroom are extremely popular, as are calming botanicals such as lemon balm, chamomile and passionflower.<sup>14</sup> Again, how these elements are incorporated is as important as what ingredients to include. At dsm-firmenich, we focus less on individual inclusions and more on a formulation as a whole, ensuring all pieces fit together to let consumers enjoy it all. Our Quali® vitamins for instance are designed with solubility in mind, ensuring they blend seamlessly with any base beverage recipe. Versatility is an attribute shared by all our functional inclusions, from ALL-Q® (Coenzyme Q10), to plant proteins. It's potential like this for limitless customization and collaborative innovation that can make a real difference in functional beverage development.

### Selling the sensory experience

Is there a layer of importance that goes beyond fundamental? If so, then taste, texture and aroma are its epitome in the beverage sector. This is true even when drinks are nominally expected to be 'functional-first'. Based on findings from Mintel, most consumers agree that an appealing flavor matters more to their purchasing decision than health claims.<sup>15</sup> It takes a deft hand however, to balance effective flavor creation against reduced sugar and clean label positionings. Plant-based and fermented sweetening solutions are the heroes here, imparting a delicate sweet-



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ness without any added sugar, and with the additional benefit of increased fiber content in some cases.

Solutions straight from the plant-kingdom can be equally valuable for perfecting the mouthfeel of functional beverages. Pectin for instance (a plant-based hydrocolloid derived from fruit skin and peel) is ideal for creating a smooth, shiny texture in which all ingredients are thoroughly suspended – avoiding the dreaded sediment formation at the bottom of the bottle or can.

### Securing regulatory approval

With any health claim comes the need for evidence. Though many of the ingredients mentioned above fall into the nebulously defined category of 'nutraceuticals' (regulatory speaking neither food nor pharmaceutical), this does not exempt functional beverages from official scrutiny. Navigating the regulatory landscape surrounding functional beverages can be a complex undertaking. This is another area where working with an experienced formulation partner yields significant advantages. With a deep understanding of global standards and requirements, these partners can help keep your products compliant, and start projects off with the right regulatory foundation. Not only does this knowledge reduce the risk of obstacles late into the production process, but it can help accelerate time-to-market, allowing brands to launch functional beverages faster.

### The perfect blend of expertise and innovation

Ultimately, success in functional beverage formulation is about balance. Sensory appeal versus wellbeing claims, catering to trending concerns or perennial priorities, pushing the boundaries of innovation while always remaining safe and compliant; there are many different plates producers must keep spinning to create a drink product likely to make a splash in today's market. A strategic formulation partner can lighten the load, not only by providing quality solutions, but by guiding manufacturers through the process, from concept ideation to the first products hitting shelves. The question over which players will dominate in the blossoming functional beverages space is as yet unanswered, but one thing is for sure – brands don't have to ride the wave alone.

To learn more about dsm-firmenich's total solutions for functional beverage formulation, visit: [https://www.dsm.com/food-beverage/en\\_US/insights/insights/beverage/a-total-solution-for-energy-drinks--now-that-s-worth-getting-energized-about.html#](https://www.dsm.com/food-beverage/en_US/insights/insights/beverage/a-total-solution-for-energy-drinks--now-that-s-worth-getting-energized-about.html#)

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# Step into a world of ingredients at Fi Europe 2023

The tastemakers of the world will come together when Fi Europe returns to Frankfurt from 28-30 November.

**F**ood & beverage professionals are invited to step inside a microcosm of the ingredients world at this year's Fi Europe. With 135 countries represented, over 25,000 visitors and 1,200 exhibitors are expected to come together under one roof, resulting in a rich, immersive opportunity to experience the energy of invention and profitable connection.

This year's event blends real-world and digital interactions through the Fi Europe Event Platform, which will be open online pre- and post-show, extending the possibilities for exhibitors and visitors to discover new business opportunities, connect with the right people and be inspired by the latest industry trends and innovations. It also allows attendees to maximise their time in Frankfurt and prepare for the on-site event by planning a personalised agenda, bookmarking sessions they want to attend and reaching out to suppliers to set up meetings.

Fi Europe's winning formula combines a bustling show floor with an insightful conference line-up. In the exhibition hall, attendees can access an unrivalled breadth of products spanning the entire food & beverage supply chain. The global exhibitor base includes many high-profile names such as Cargill, ABF Ingredients, Prinova, Brenntag and Lesaffre.

The Fi Europe Conference (28-29 November) and Future of Nutrition Summit (27 November) will provide exclusive, paid-for content that cannot be accessed elsewhere. It is focused on addressing current challenges and identifying immediate opportunities in the F&B industry. Its stellar speaker line-up includes Kalina Doykova, Senior Research Analyst at Euromonitor International, and Cyrille Filott, Global Strategist at Rabobank.

The Future of Nutrition Summit offers a deep dive into disruptive technologies and solutions that have the potential to reshape the industry. Delegates will hear from presenters such as Floor Buitelaar, Managing Partner at Bright Green Partners; Mario Ubiali, Founder & CEO of Thimus; and Christine Gould, Founder & CEO of Thought For Food. Free-to-attend content will be offered at the

Innovation Hub and Sustainability Hub.

The growing importance of sustainability as an industry challenge will be reflected in the event highlighting issues such as sustainable sourcing, labels and transparency, regulatory compliance, ESG, gender equity, and more. As part of its ongoing commitment to sustainability, Informa has recently partnered with the international civil society organisation Solidaridad. Through the Sustainability Hub, visitors can find out how Solidaridad's work in creating sustainable supply chains globally can help with ethical and sustainable ingredient sourcing.

In addition to the numerous informal and impromptu interactions that an industry gathering on this scale provides, there will be several organised networking opportunities. Data-driven matchmaking offers a scientific approach to making connections, and female professionals can look forward to inspiring others and being inspired at the popular Women's Networking Breakfast.

As well as encouraging diversity in all forms, Fi Europe champions innovation and excellence

through its award programmes. The Fi Innovation Awards celebrate individuals and businesses breaking new ground and making a difference in the industry. They culminate in an evening awards ceremony held on Tuesday, 28 November. The Startup Innovation Challenge offers a springboard for young companies with disruptive potential. Attendees can watch these startups pitch their concepts to a panel of investors, accelerators and influential industry players at the Innovation Hub on 28 November.

Yannick Verry, Brand Manager, Food Ingredients Europe and Americas, says: "This year's Fi Europe includes all the ingredients that food and beverage tastemakers need to innovate and grow their businesses, from expert content sessions to targeted networking opportunities and a show floor brimming with ideas. I am very excited about the collective transformational power of all of these elements and cannot wait to see what creativity and connections ensue from this melting pot of talent."







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## AstaReal Stand: 3.0G242

### Planet-friendly nutrition with algal astaxanthin

At this year's Fi/Hi Europe, AstaReal will showcase its recently launched Astaxin® VEGAN, an astaxanthin formula designed to not only promote good health but also help address environmental concerns. Microalgae-derived astaxanthin is one of nature's most powerful antioxidants with scientifically proven health benefits for both humans and animals alike. Alongside various consumer dosage forms of natural astaxanthin, the Swedish company will present its premium feed-grade Novasta® EB15 for pets, horses, livestock and other animals.

Plant-based products are flourishing globally, as a result of consumer interest in health, naturalness and sustainability, as well as rising numbers of vegetarians and vegans. AstaReal's new astaxanthin formula, Astaxin® VEGAN, perfectly taps into this market. The vegan softgel is made of carrageenan and modified starch, with the content mirroring Astaxin® Original.

AstaReal offers the most researched brand of natural astaxanthin on the market. Its health attributes are backed by more than 70 human clinical studies, and include improved vision, stronger cognitive function, better muscle health and smoother skin texture, thus addressing concerns of various target groups, from healthy agers to athletes. In addition to the company's bulk raw and finished products, Fi Europe visitors will be able to receive technical guidance on manufacturing various astaxanthin finished dosage forms, such as hard capsules, softgels, sachet/stick powder mixes and gels, gummies and liquid shots.

In line with preventive health trends, a growing number of consumers are also looking for ingredients that support and protect the wellbeing of their pets. With its strong antioxidant and anti-inflammatory properties, AstaReal® astaxanthin is a valuable ingredient for feed and pet food applications. Within the Novasta® range, the company offers a novel encapsulated product called Novasta® EB15, which aims to better preserve and maintain the antioxidant power of astaxanthin even after challenging production processes. This means that astaxanthin can be safely and with less hurdles incorporated in most types of formulations, from soft chews to pellets. Peter Ahlm, Head of Marketing & Sales at AstaReal AB, says: "Consumer interest in sustainable foods and nutraceuticals will, with no doubt, continue to drive demand for plant-based offerings. Here, algae and microalgae-derived astaxanthin can play a key role, and look set to be future-proof ingredients. In addition, consumers want the best for their companions too, true to the motto 'What's good for me is good for my pet'. That's why they are increasingly seeking premium animal food with healthy ingredients that are scientifically backed, like Novasta® EB15." At the fair in Frankfurt, AstaReal will be represented at "Try Swedish", the official Swedish country pavilion at stand 3.0G242.



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## ChickP Protein Ltd Stand: 3.0J160

### Discover the power of 90% chickpea protein isolate in dairy alternatives

FoodTech start-up ChickP Protein, Ltd. will present prototypes of chickpea-based cheeses at Fi Europe 2023. The company will display a savory platter of a range of soft, cream, and firm cheese analogues, all crafted using its proprietary 90% chickpea protein isolate. The creations boast the same sensory characteristics of dairy-based



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cheeses, fully mimicking their appealing aroma, texture, and flavor.

ChickP set a new standard of protein isolate with the development of its highly functional, all natural, chickpea protein isolate to serve the growing demand for plant-based dairy products. ChickP utilizes all components of the chickpea, without waste. The isolate embodies a 90% whole-protein composition and provides a powerful nutritional boost to plant-based cheese applications.

Come taste the innovation and learn how ChickP smart protein solutions are revolutionizing the alt-dairy landscape.

## Corbion Stand: 3.1F138

### Corbion's innovative preservation solutions: Pioneering the future of food

Preservation is what we do at Corbion, and at this year's Food Ingredients Europe, we're excited to showcase our latest innovations in the preservation space.

With decades of expertise in antimicrobials, we're leading the way by offering our new Origin® portfolio of antioxidant solutions, which is going to complement our range of everyday nature derived preservative solutions that help manufacturers deliver high-quality natural products while extending shelf life and reducing food waste.

These antioxidant solutions, sourced from acerola and rosemary, effectively preserve meat and poultry quality while reducing food waste and enhancing the eating experience. Our commitment to sustainability shines through as we collaborate closely with supplier-partners, promoting equity and opportunities in regions often overlooked in the value chain. By localizing processing, we minimize our carbon footprint, support local economies, and harness the potential of high-value plant-based products.

Moreover, our rich heritage in fermentation and technical expertise distinguishes us in the industry. We eagerly anticipate



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engaging with our customers to explore how we can enhance their product offerings. Our expertise lies in optimizing existing products, delivering ready-to-implement ingredients, and tailoring custom formulations and dedicated technical support to help them achieve their immediate and long-term objectives. As an example of our innovative tools, we're excited to present our enhanced Corbion® Listeria Control Model. This updated model now offers the flexibility to simulate diverse storage conditions at various stages of food production, retail, and consumption. This empowers manufacturers to better combat real-world pathogen challenges, enhancing food safety effectively.

In the confectionery sector, we'll showcase our newest and most advanced offerings: PURAC® Powder MAX and PURAC® Powder MAX Fine. These cutting-edge solutions are revolutionizing applications like extruded candies, panned candies, and nonpareils, driving innovation in the industry. Additionally, our recent announcement regarding the expansion of our production line in Spain, tripling our capacity for producing acid powder ingredients, underscores our solid dedication to innovation. This investment empowers our confectionery customers to stay ahead in the competitive landscape, further solidifying our commitment to their success.

At Corbion, we're not just preserving products; we're preserving the future of food with natural solutions that benefit manufacturers, consumers, and the planet.

For more, visit us at booth 3.1F138

## Fraunhofer IVV Stand: 4.1L143

### Customized plant food ingredients

At Food Ingredients Europe in Frankfurt, the Fraunhofer Institute for Process Engineering and Packaging IVV together with the Fraunhofer Institute for Molecular Biology and Applied Ecology IME will be explaining how food ingredients can be made from plant-based and alternative protein sources. Between November 28 and 30, 2023, the institutes will be presenting current research topics in the fields of ingredient extraction and food development at Booth 4.1L143 in Hall 4, under the slogan "Customized plant ingredients for your food". Fraunhofer IVV and Fraunhofer IME deploy their expertise to provide manufacturers of food and ingredients with comprehensive support - from the selection of raw materials and process development through to market-ready food products.

Protein database → find the right ingredient quickly and reliably

Fraunhofer IVV has drawn on its many years of experience in the development and application of plant proteins to set up a protein database. This allows the institute to support companies in selecting the right plant proteins for their food innovations quickly and accurately, and to then guide the developments along the entire process chain.

The content and functions of the database are being presented at 4:00 p.m. on November 28 in the Exhibitor Showcase Theatre during a lecture titled "Plant-Based Protein Ingredient Database: Empowering Targeted Product Development".

From the raw material to the end food product

Fraunhofer IVV develops functional food ingredients, such as proteins and fiber, from a wide range of plant raw materials, including legumes, oilseeds and side streams from the food industry. The institute optimizes wet and dry resource-efficient fractionation and processing methods on a laboratory and pilot scale to develop the ingredients' composition, plus their functional and sensory properties, in a way that is specific to the raw material in question and tailored to each application. In addition, the food ingredients are characterized with respect to chemical composition, functional properties, molecular weight distribution, the presence of endogenous enzymes and enzyme inhibitors, plus other antinutritive substances. An ingredient and food pilot plant is available at Fraunhofer IVV for producing food ingredients and product samples on a pilot scale. Changes to the products during storage can be examined in storage tests on site at Fraunhofer IVV and reviewed by a specially trained sensory panel.

Fraunhofer IVV boasts many years of expertise regarding the complex interplay between the raw material, production process and fermentation, which it brings to bear in the customized and targeted development and optimization of products. The institute also develops dairy product alternatives based on plant raw materials and



protein-rich, functional ingredients. Here, fermentation involving lactic acid bacteria is used for the targeted generation of product properties such as creaminess, increase in viscosity and gel formation in dairy product alternatives such as vegan yogurts and cheeses.

Another area of focus is the development of textured foods for use in meat, fish and seafood alternatives. In particular, Fraunhofer IV is investigating how textures can be created using alternative protein ingredients from plants, algae, fungi or insects to produce innovative and safe meat alternatives that also appeal to the senses. In this work, the institute is deploying its many years of expertise in the field of extrusion for the development of customer-specific texturing solutions that range from small exploratory investigations on a kilogram scale right up to near-industrial scale production. Fraunhofer IV develops and optimizes products and ingredients based on the specifications and issues presented by its customers, and also creates sustainable packaging solutions for safe food products.

#### New agricultural systems for sustainable future nutrition

New, closed agricultural systems are increasingly being used around the world to provide healthy, high-quality food products and supply the global population with fresh produce. The advantage of this contained environment agriculture is that food can be produced in a resource-efficient manner all year round regardless of the location or weather. Fraunhofer IME in Aachen is exploring new agricultural systems for the vertical production of plants as well as for the production of single cell proteins and cultured meat, and provides tailor-made solutions to research partners and customers for optimized production processes along the value chain from the raw material to the end product.

As a pioneer in plant-based production, Fraunhofer IME possesses extensive expertise in the field of plant cultivation and has access to exceptionally well-equipped infrastructure. To conduct applied research on current topics in the area of indoor/vertical farming, a multitude of cultivation approaches are carried out under controlled conditions. These range from traditional single-tier plant cultivation in greenhouses to indoor cultivation in growth chambers and multi-tier cultivation within various vertical farming systems. In this context, the vertical farming systems OrbiLoop® and Orbi-Plant® developed at Fraunhofer IME Aachen provide a novel conveyor-based vertical farming platform technology that allows the scalable production of plants at minimal space and resource requirements.

As part of the plant-based food production, plant cell cultures (PCC) represent an important alternative to conventionally grown plants, as they are cultivated regardless of seasonal conditions or available land and without any pesticides. Fraunhofer IME Aachen has developed LEDiSHAKE, a lighting system for PCC, to provide a platform for the identification of optimal light recipes for the production of valuable ingredients - without the need to use genetic engineering.

Other research areas at Fraunhofer IME Aachen include the production of single cell proteins and cultured meat. The "Single Cell Protein" working group is exploring new protein sources from bacterial strains that are isolated from the environment and can be used in the food industry as protein and dairy substitutes. Cultured meat - lab-grown meat - is a revolutionary alternative to conventional meat production. Animal cells are cultivated in vitro, eliminating the need to slaughter animals and reducing the negative environmental impact associated with livestock farming. The "Cultured Meat" working group focuses on areas including the establishment of stable, immortalized cell lines and the development of cost-effective, plant-based edible scaffolds for animal-free meat production.

## FrieslandCampina Stand: 3.D40

### FrieslandCampina Ingredients to power protein innovation for sports and medical nutrition at Fi Europe 2023

FrieslandCampina Ingredients, a global leader in protein and prebiotics, is set to return to Fi Europe 2023 (28-30 November), in Frankfurt, Germany, to showcase its latest developments in adult nutrition. At its booth (hall 3.0, stand D40), the company will highlight opportunities for brands to target the gut-muscle axis with its cutting-edge Biotis® Fermentis, created to support athletic performance and holistic health. FrieslandCampina Ingredients will also share plant-based inspiration with its delicious Plantaris™ protein bar applications, as well as unveil a brand new whey protein ingredient designed to step up medical nutrition innovation.

#### Biotis® Fermentis, the gut health goodness

Consumers worldwide are increasingly looking to improve their health by being more active; two-thirds of people say they now exercise at least three times a week on average.<sup>1</sup> At the same time, research demonstrates that intensive exercise and related dietary habits can cause gut discomfort - leading to negative effects on overall well-being and impacting sports performance.

At Fi Europe, FrieslandCampina Ingredients will showcase its 'game-changing' Biotis® Fermentis ingredient for sports nutrition. By fermenting protein, prebiotics and probiotics together, this first-of-its-kind solution boosts the properties of its individual ingredients, effectively targeting the gut-muscle axis. Recently short-listed for the 2023 'Best Sports Nutrition Ingredient' award by ESSNA, Biotis® Fermentis has been shown to deliver multiple health benefits, including improved gut health and muscle support, as well as perceived improvements to wider well-being, including mood and energy levels. In a trial conducted by FrieslandCampina Ingredients, 80% of participants self-reported improved satisfaction with their physical well-being after three weeks of taking the ingredient daily.<sup>2</sup> This means brands can design holistic sports nutrition solutions that maximise athletic performance from the inside out.

Visitors can find out more about this unique solution by joining the 'Reformulation with innovative ingredients Innovation Tour' at Fi Europe on Wednesday 29 November. FrieslandCampina Ingredients' Linda Bentert, Segment Marketing Manager for Biotis®, will deliver a talk entitled "Unlocking the gut-muscle axis: exploring the power of fermentation in sports nutrition" in the Exhibitor Showcase Theatre, on Tuesday 28 November at 14:30 CET.

#### Plantaris™: unlocking the full potential of plant-based proteins

Protein remains front of minds, with active consumers on the lookout for innovative plant-based sources alongside traditional dairy proteins. In fact, the size of the global plant-based bars market is skyrocketing, with an expected compound annual growth rate (CAGR) of 14.0% from 2023 to 2030.<sup>3</sup> However, 33% of consumers are concerned about the texture of high-protein snacks,<sup>4</sup> and plant proteins in particular often present formulation challenges relating to sensory experience.

At FrieslandCampina Ingredients' stand, visitors will be able to taste the company's latest plant protein bar applications, made with Plantaris™ pea or faba protein ingredients. Providing a protein content of over 15g per serving, these concepts show how brands can leverage neutral-tasting ingredients to address the challenges associated with the taste, texture and shelf life of developing high-protein plant-based bars, delivering on consumers' sensory expectations. Attendees can find out more about Plantaris™ by taking part in the 'Plant-Based Innovation Tour' on 28 November.

#### Sneak peek: the whey to innovate in medical nutrition

FrieslandCampina Ingredients will be also launching a brand-new whey protein ingredient in the New Product Zone. Designed to unlock untapped opportunities in medical nutrition, this ingredient leverages the company's unparalleled technological and application expertise, allowing brands to create appealing and nutrient-dense medical nutrition products that meet patient needs.

"We're thrilled to be back at Fi Europe - it's always a great chance to meet with customers new and current, as well as build valuable wider industry connections," comments Vicky Davies, Global Marketing Director for Performance, Active & Medical Nutrition at FrieslandCampina Ingredients. "This year, we're spotlighting our



protein portfolio and how our unrivalled application expertise can help unlock innovation potential. Our Plantaris™ high protein bar applications, which deliver high levels of plant-based protein without compromising on taste or texture, are just one example of what manufacturers can achieve when working with best-in-class ingredients. Also making its Fi Europe debut is Biotis® Fermentis, a first-of-its-kind solution in sports nutrition which enables brands to deliver multiple holistic benefits to boost sports performance in one convenient product. Perhaps most excitingly, we're introducing a new ingredient for medical nutrition applications at this year's show, so keep your eyes peeled for more information, coming soon!"

Find out more about FrieslandCampina Ingredients' range of protein and prebiotic ingredients at Fi Europe by registering here and visiting booth #3.0D40.

#### References:

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- 3 Grand View Research, Plant-based Bars Market Size, Share & Trends Analysis Report By Product Type (Protein Bars, Granola/Cereal Bars), By Nature (Organic, Conventional), By Distribution Channel, By Region, And Segment Forecasts, 2023 - 2030. <https://www.grandviewresearch.com/industry-analysis/plant-based-bars-market-report>
- 4 FMCG Gurus, Consumer Perspectives on Protein Consumption in 2022.

## GNT Stand: 3.1G140

### GNT offers interactive EXBERRY® colour lab experience at Food Ingredients Europe 2023

GNT will open up an interactive "color lab" for its plant-based EXBERRY® concentrates at Food Ingredients Europe (Frankfurt, 28-30 November 2023).

EXBERRY® Coloring Foods are edible concentrates made from non-GMO fruit, vegetables, and plants using physical processing methods such as chopping and boiling. They are available in more than 400 shades from across the whole rainbow and can be used in all food and drink categories.

At FIE 2023, GNT (stand 3.1G140) will showcase EXBERRY® concentrates' versatility by inviting attendees to color their own dairy, confectionery, and non-alcoholic beverages at special application stations.

The company's dedicated in-house experts will also be available throughout the event to provide insights and advice into how EXBERRY® can meet consumer demand in different regions around the globe.







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Petra Thiele, Managing Director at GNT Europa, said: "EXBERRY® allows manufacturers to achieve vibrant shades in almost any application while maintaining completely clean and clear labels. Our special 'color lab' will give FIE visitors the chance to experiment with the possibilities for themselves and discover the incredible potential of our plant-based concentrates."

Based on the concept of coloring food with food, EXBERRY® concentrates are classified as food ingredients rather than additives in the EU and many other parts of the world. They are also suitable for vegan, halal, and kosher diets.

To ensure the highest level of quality and year-round availability, GNT has a vertically integrated supply chain, with cultivation and harvesting monitored by GNT's agricultural engineers.

## GoodMills Innovation Stand: 4.0H121

### GoodMills Innovation unveils natural ingredient solutions for plant-based products

At this year's Food Ingredients Europe, GoodMills Innovation presents a diverse portfolio of plant-based products. The company places a strong focus on solutions for this segment, showcasing VITATEX® texturates and functional SMART® legume flours. It has also introduced the Slow Milling® range for natural, clean label baked goods, including the baking agent Ferment'ic® for exceptionally aromatic bread and rolls. In addition, GoodMills Innovation presents SpermidineEvo®, a natural wheat germ concentrate rich in spermidine, for use in nutraceuticals.

#### Authentic taste and texture

The key to appealing plant-based products is authentic taste and mouthfeel. GoodMills Innovation offers VITATEX® texturates made from wheat, soy and pea proteins, known for their meat-like texture and sensory qualities. For protein enrichment, nutritional profile optimization and texture improvement, the plant-based SMART® high and low protein legume flours tick all the boxes. Naturally gluten-free and clean label, SMART® legume flours from yellow peas, chickpeas, red lentils or fava beans are suitable for both food and pet food applications.

#### Top-quality artisan baking

The recently revamped Slow Milling® range's raw materials are also purely plant-based. These natural ingredients allow for the creation of high-quality artisanal baked goods that combine creativity with tradition and baking reliability, even on an industrial scale. Depending on the recipe, Slow Milling® offers components and solutions that can be used like building blocks. A particular focus at FIE will be on the natural baking agent Ferment'ic, which is suitable for aromatic, wheat-based baked goods with a moist crumb and open crumb structure that impart a handcrafted feel and distinctive flavour profile. It also helps streamline the production process.

#### Spermidine for nutraceutical applications

With SpermidineEvo®, GoodMills Innovation presents a premium wheat germ concentrate with a very high spermidine content. This ingredient, available as raw germ for extraction or in powder form, has a slightly nutty flavour and can be used in capsules, tablets, sachets or innovative nutraceutical applications such as functional fruit gummies, VMS gummies or gum. Spermidine is a natural polyamine that promotes cell autophagy, thus potentially slowing down the ageing process.

Furthermore, the company will be showcasing a range of other plant-based ingredients alongside information on their application.



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including gluten-free SNACKMAXX® masa flours made from selected and non-genetically modified maize varieties. With a variety of granulations, they are suitable for numerous snack applications.

GoodMills Innovation's solutions are based on natural raw materials obtained through highly specialized processes to ensure consistent quality, and are helping to shape the global market for plant-based products. In this context, the company has recently made significant investments in expanding production capabilities. This autumn will see the opening of the new production tower at the Hamburg site, which will expand GoodMills Innovation's capacity for plant-based products and create a competence center for their applications.

## Hydrosol Stand: 3.1D160

### Hydrosol puts popular classics in a new light

At this year's Food Ingredients Europe, Hydrosol is serving a modern version of the classic dish "currywurst and French fries" at stand 3.1D160 – with a fat-reduced French fries sauce, a curry sauce with an intensive taste and a hybrid sausage. Whereas in the field of dairy products, the focus is on the best-selling product: vegetable-based cream. In addition, Katharina Burdorf, Team Lead Product Management at Hydrosol, is diving into the topic of cellular agriculture as a speaker on 29 November at the FIE Conference. The title of the presentation is "Sustaining the World's Appetite: The Role of Cellular Agriculture in Modern Food Systems".

#### Hybrid Currywurst, French fries 4.0

The hybrid currywurst contains less fat and cholesterol than conventional products but it is just as tasty as the original. Hybrid products appeal particularly to consumers who would like to reduce their meat consumption but do not want to make compromises regarding taste and consistency. The hybrid currywurst which trade fair visitors can try at the Hydrosol stand, is only one example of this. With the stabilising systems from the PLUSmulson range, a wide array of different hybrid products can be produced – from sausages and cold cuts via burgers, meatballs, nuggets and schnitzels to fish products. The combination of meat and vegetables can be smoothly integrated into the existing production process. The proportions of meat and vegetables can be flexibly varied. With their health, economic and environmental advantages, hybrid products offer the opportunity to combine the best of both worlds.

Fitting well to the sausage rich in vegetables, Hydrosol has developed a concept for a curry sauce which can be used flexibly and retains good viscosity even in the warm state. The functional system for French fries sauce scores points with its nutritionally nutritional physiology advantages and simple preparation. The all-in compound has an excellent emulsifying capacity and guarantees a stable final product, even without the use of egg yolk powder. Despite the improved nutritional value due to a reduction in fat content to 15% and a fibre enrichment, the French fries sauce has a creamy mouthfeel and a delicious taste. This makes it an ideal alternative to conventional high-fat mayonnaise.

#### Vegetable based-cream: our bestsellers impress

Vegetable-based cream is by far the most popular category on the Hydrosol website. For a good reason: Cooking and whipping creams based on vegetable fat have long shelf lives, offer cost advantages compared to conventional cream and in addition, vegetable fat is usually available at any time. Not to be forgotten: the final products are more stable and convince with individual properties. With the stabilising and texturing systems from the Stabimuls ICR range, manufacturers can produce creams with significantly higher whipping volumes and sturdier foam structures than conventional cream. Furthermore, variants which are freeze-thaw-stable are also possible. Whereas the systems from the Stabisol Vega range reveal cooking creams with flexible fat contents of between 10 and 30%. These are heat-stable and resilient against acids and do not coagulate even when alcohol is added. There is also a variant which combines both advantages – making it suitable for cooking and whipping. At the FIE, visitors can experience the advantages of vegetable-based cream live.

#### Cultured meat: new ideas from research

On all five continents, companies are researching cultured meat.



"Both new types of vegan meat alternatives and cultured meat have the potential to be disruptive," explains Katharina Burdorf, Team Lead Product Management at Hydrosol. In her dissertation, the expert is researching the opportunities offered by meat from cultivated cells, but also the challenges which must be mastered by this new generation of protein. At the FIE Conference, she will share expert insights into the current state of research.

## Loryma Stand: 4.1H141

### Loryma welcomes you home

At this year's FIE in Frankfurt, Loryma presents trend-oriented, wheat-based solutions for meat alternatives, baked and breaded products, and the sports nutrition sector. Visitors to the fair will be welcomed to a stand that is reminiscent of an inviting apartment, making it clear that the wheat specialist's range is oriented towards the everyday needs of consumers.

The symbolic home-style Loryma stand perfectly illustrates the fact that the food specialist of the Crespel & Deiters Group offers flexible solutions that perfectly meet the needs of different target groups. Philipp Deiters, Global Head of Division Food of the Crespel & Deiters Group, explains the approach: "From a clean list of ingredients, balanced nutritional values or purely plant-based foods – corresponding snacks or convenience products are currently in great demand. We therefore see ourselves as a partner to manufacturers in all food segments. Our solutions help to meet different requirements in an uncomplicated and efficient way."

The functionalities of Loryma's ingredients are demonstrated using product examples that are aligned to the application areas and their requirements: Bakery industry: innovative, vegan stabilisation system compensates for egg or milk Loryma presents a new stabilising system that is free of animal ingredients, artificial emulsifiers, colourings, flavourings and preservatives. The wheat-based Lory® Stab perfectly replicates the technological properties of egg or milk in baked goods, ensuring an authentic result. As a basic premix, the system enables simple and flexible recipe design for a wide range of applications such as muffins, sponge cakes, cake bases and lavacakes. In addition to the new stabilising system, the wheat specialist offers further functional ingredients for the baking industry: Lory® Starch Elara is a resistant wheat starch that increases fibre content, while reducing the amount of carbohydrate in the end product. Depending on the product, the hydrolysed wheat protein Lory® Protein and the extruded



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Lory® Tex Powder, which does not impair dough rheology, are particularly suitable for enrichment with high-quality vegetable protein.

Meat alternatives: heat-stable, clean label salami substitute Fermentation plays an important role in Loryma's application for the authentic visual and sensory replication of salami as a plant-based product. Wheat texturates from the Lory® Tex range form the structure-giving basis, while the wheat-based binder (Lory® Bind) ensures optimal binding and heat stability, and a protein content in line with the original. Sports snacks with a vegan crunch The crunchy protein-rich cookie is an example of how nutritional value and texture can be optimally combined. Various raw materials from Loryma are guaranteed to meet the needs of sports and health enthusiasts, including the hydrolysate Lory® Protein and resistant starch Lory® Starch Elara. These ingredients allow for increased protein and fibre content, and a reduction in carbohydrates. While the Lory® Crisp Crisps primarily provide a crunchy effect, the Lory® IsoCrisp extrudates score with both their protein content and crunchy texture. Panade systems: love at first bite As a manufacturer and developer of breading systems, Loryma's portfolio offers the entire spectrum of functional raw materials for wet breadings and functional blends for batters, tempura, breadcrumbs and dustings, as well as texturising coatings. Extruded crumbs and crisps offer sensory highlights, especially in the final coating.

At the stand, trade visitors can put themselves in the shoes of their target group. In addition to high-quality ingredients made from European wheat, Loryma provides holistic support for implementation and adaptation to individual production conditions.

## MANE Stand: 4.1K61

### Join us at FIE 2023 to discover MANE's integrated taste journey

At MANE, our passion lies in delivering extraordinary ingredients, all while prioritising sustainability. By enhancing our control over ingredient sourcing, we ensure unmatched quality, availability, and traceability, thereby creating an integrated taste journey and empowering our clients to elevate their end products by using high-quality products.

We invite you to discover our ingredients at the FIE 2023 tradeshow that will take place from 28 to 30 November in Frankfurt, along with our other products, such as our extracts, essential oils, concentrated juices, antioxidants, and colours.

At our stand, you will be able to see how the traceability of our vertically sourced ingredients allows us to ensure that every stage of their journey complies with MANE's standards, maintaining a clear supply chain and guaranteeing that our ingredients meet the highest quality and are responsibly sourced. We take great care in overseeing every aspect of ingredient production, beginning with seed selection, followed by careful cultivation, harvesting, all the way to the storage and processing of these ingredients within our factories.

The places we work and the people we work with are a part of our identity. That is why we believe in respecting and developing the local communities where we operate. As part of our ethical sourcing approach, we have implemented a sustainable purchasing policy, ensuring our partners adhere to our rigorous standards and promote socially responsible sourcing practices.

So that you can see the results of our real efforts towards responsible sourcing, you will be able to discover or rediscover extraordinary ingredients such as Vanilla from Madagascar, Black Pepper from Sri Lanka or Timur Pepper from Nepal. A large palette of ingredients will be available for tasting in a wide range of applications, both sweet or savoury.

Our partnerships with local producers are key to the integrity of our raw materials, sustainable cultivation, fair trade and the provision of resources for increasing productivity and ingredient quality, while creating value and opportunities for the communities involved.

As part of these commitments, we are proud to be labelled Ecovadis platinum. This recognition highlights our dedication to transparent business practices and sustainable development.

By closely overseeing the entire production process and adhering to ethical sourcing models, we guarantee that our ingredients not only meet our high-quality standards but also align with our environmental and social responsibilities.

Embracing the Integrated Taste Journey, we have successfully established a vertically integrated ingredient supply chain. This strategic approach enables us to significantly reduce our environ-

mental impact while also actively supporting local communities and continuing to provide our customers with exceptional flavouring ingredients which will also be available to sample at our interactive counter during the show.

Visit us at FIE 2023, Hall 4.1 – Stand K61 to learn about our extraordinary flavouring ingredients and discover the unparalleled quality offered by our Integrated Taste Journey approach.

## Rousselot Stand: 3F240

### Rousselot and Gelnex team up to showcase Collagen and Gelatin Expertise at FIE 2023

Rousselot and Gelnex, Darling Ingredients' premier gelatin and collagen brands, will be showcasing their collagen and gelatin expertise at Food Ingredients Europe (FIE), Nov. 28-30 in Frankfurt, Germany.

Attendees can discover the company's cutting-edge advancements in collagen and gelatin technology; including the science behind their benefits, new product concepts, and how food and nutrition brands can create market-leading health and wellbeing products using these multifunctional ingredients.

"By combining two world-leading collagen and gelatin producers, Rousselot and Gelnex bring an unparalleled range of products, solutions and scientific expertise to the market," said Alexandre Assis, Managing Director of Rousselot EMEA. "We invite FIE attendees to meet with our experts, learn about the wonderful versatility of collagen and gelatin ingredients and discover the benefits they can bring to food and nutrition brands."

At the company's "collagen throughout the day" stand area, attendees can discover the limitless applicability of Peptan®, Peptinex®, and Protake® collagen solutions through a selection of delicious prototypes, including coffee, pancakes, breadsticks and dips, soups, chocolate and gummies. Sampling sessions will be offered throughout the conference.

The gelatin corner will highlight the many functional properties that make gelatin the ingredient of choice for natural-tasting treats and better-for-you product formulations.

Through a deep-dive into the wide Rousselot-Gelnex offering, visitors will gain a tangible perspective on the unmatched versatility of the company's gelling agent, and the many product concepts available.

The company will also showcase an innovation area filled with unique products, concepts and trend insights developed at Rousselot's state-of-the-art global application center. Visitors are invited to attend the continuous demonstrations of new recipes and formulation strategies taking place on-stand, such as how to boost a gummy's Nutri-score from D to A with lower sugar and higher fiber content.

Stijn Bossier, Technical Support Manager at Rousselot, will also be showcasing the newest advancements in functional gummies in a presentation entitled "Functional gummies: What's next?". Join the expert at 3 pm CET, Nov. 29, 2023, at the Exhibitor Showcase Theater to uncover the insights.

To learn more or connect with Rousselot-Gelnex's experts, stop by booth 3F240 or visit: [www.rousselot.com](http://www.rousselot.com), [www.gelnex.com](http://www.gelnex.com)



## SternVitamin Stand: 3.1D160

### SternVitamin presents trend-oriented premix solutions at Fi Europe

At this year's FIE fair SternVitamin will be presenting selected premix solutions to address current trends. The focus is on three micronutrient premixes that have been incorporated into various applications. The SternCogni+ premix, whose functional ingredients boost cognitive performance in old age, is presented in gummies, a trending application. The company meets the Beauty from Within trend with an instant beverage powder fortified with the SternHolisticBeauty premix. Meanwhile, SternVitalityV offers something new for the booming plant-based market: incorporated into a vegan coffee drink the micronutrients provide new energy. At booth 3.1D160 visitors can gain inspiration for new product developments and learn how micronutrient premixes can simplify the process.

Micronutrients for cognitive performance and memory

According to the United Nations, by 2050 the number of over 65-year-olds will increase by almost 50 percent in Europe and North America, and life expectancy is also rising. This makes it even more important to maintain physical and mental health for as long as possible, to lead an active and healthy life into old age. Studies show that best agers and seniors are particularly susceptible to micronutrient deficiencies. This affects cognitive performance and memory. With its SternCogni+ premix SternVitamin picks up on the Healthy Ageing trend. It contains vitamins B3, B6, B12 and biotin, which contribute to normal functioning of the nervous system, and support memory performance in combination with choline. Zinc improves cognitive performance. As an example of a trending food supplement form, the premix is presented in gummies.

Holistic beauty as a future trend

For many years wellness, health, and beauty were discrete categories, but recent years have accelerated the change towards a merging of the categories. Holistic beauty is the long-term trend now. Consumers are looking for beauty products that alleviate stress, boost wellbeing, and help with sleep issues, for a healthy appearance. With SternHolisticBeauty, SternVitamin has developed a unique premix that follows a holistic approach. Its micronutrients and other functional ingredients support the gut immune system and the microbiota that work through the gut-skin axis to strengthen the skin barrier and improve skin health. The lavender extract in the premix helps with relaxation and stress reduction, and pantothenic acid supports mental performance. At FIE SternVitamin is presenting SternHolisticBeauty in the form of an instant drink powder. It features a pear and vanilla flavour tailored especially for the Holistic Beauty market, developed in collaboration with sister company OlbrichtArom.

Fortified plant-based coffee drink for new energy

SternVitamin's answer to the ongoing plant-based boom is SternVitalityV. This premix contains B vitamins, vitamin C, and pantothenic acid, which reduce fatigue and exhaustion, while simultaneously providing new energy. Iodine and calcium provide additional power. This micronutrient combination comes in a plant-based coffee drink. It can help students, professionals, and fair attendees maintain their mental performance throughout the day, reduce nervousness, and stay focused. This enriched coffee drink was developed in cooperation with sister company Planteneers.

In addition to these products, SternVitamin is also presenting further premix solutions aligned towards consumer needs in different applications and target groups. The extensive Healthy Ageing line is one example. At FIE the company provides further inspiration as an idea generator and development partner for customers.







# How to access expertise to unlock the fast-growing functional beverage market

**I**nvestors have poured hundreds of millions of dollars into functional beverage startups in recent years, supporting the growth of healthy alternatives to sodas and alcoholic drinks that are marketed based on a wide range of health claims.<sup>1-5</sup> Larger, more established drinks companies are expanding their portfolios of functional beverages too, both through investments in their own product lines and by acquiring some of the venture-backed startups.<sup>6</sup>

The investments have created a diverse range of drinks, with brands marketing beverages that contain apple cider vinegar for gut health, adaptogens for cognitive function and mushrooms for energy.<sup>7-10</sup> The claims reflect the changing demands of consumers, whose emerging preference for drinks that are good for their health has turned functional beverages into a \$129.3 billion market.<sup>11</sup> The market is forecast to keep growing quickly over the coming years to be worth \$279.4 billion by 2030.

Companies will need a strong product to capture a piece of the fast-growing market. Competition in the beverage market is intense. The U.S. Beverage Manufacturing and Filling Locations Database lists almost 2,500 manufacturers of a range of alcoholic and nonalcoholic

beverages such as functional beverages, sports drinks, energy drinks and protein beverages, plus 10,000 flavours of fizzy water.<sup>12</sup>

In that competitive market, in which buzzy startups go up against century-old brands, companies need more than eye-catching branding and novel ingredients to achieve lasting success. To drive the repeat purchases that sustain businesses, companies must develop drinks that back up their pitch by delivering on any claims they make and having an attractive flavour, colour and mouthfeel.

Developing such drinks requires a diverse mix of knowledge and capabilities spanning consumer insights, high-quality ingredients, sensory expertise and more. Few companies possess all the capabilities needed to develop drinks that attract and retain customers, leading large manufacturers and new startups alike to seek out partners that can enable their projects.

## **iprona: An expert in functional beverages**

iprona, a supplier of fruit-specific ingredients, has built up the expertise and capabilities needed to help its partners turn their ideas for functional beverages into commercial products. Through a collaborative, step-by-step discovery process

involving discussions, analyses and tastings, iprona works hand in hand with its customers to create products that exactly match the vision for their beverages.

The company tailors its services to the needs of the client. When serving large industrial customers and internationally renowned companies, iprona provides its high-quality compounds and knowledge and experience as needed throughout the entire development process. Startups can access more support if needed, enabling companies with little more than an idea to create their own beverages.

iprona's ability to create products that match the vision of each customer is built on deep expertise and high-quality ingredients that empower it to produce all flavour profiles, from fruity and sweet to exotic, tangy and acidic. The company is comfortable working with all types of drinks, including many that are of interest to developers of functional beverages. Here, we look at some of iprona's areas of expertise.

## **Organic drinks**

iprona was an early adopter of organic ingredients. Guided by its belief in taking a gentle approach to nature, the company that recognized consumer interest in organic foods and beverages

was more than a fad.

Early recognition that demand for organic products would increase for years has enabled iprona to accrue a lot of experience in the production of high-quality organic juice concentrates and to build a wide network of suppliers of flavours, extracts and oils. iprona uses its network and internal capabilities to help customers make functional beverages from organic-certified and organic-certifiable raw materials.

#### **Energy drinks**

The global energy drink market has expanded quickly over the past 20 years, leading to the US alone being worth \$9.4 billion in 2020.<sup>13</sup> Typically marketed toward younger consumers, energy drinks have supplanted coffee as the preferred source of caffeine for many people.

Years of growth have created an energy drink market dominated by a small number of large players, meaning new entrants need a differentiated offering to stand out and win market share. One option for companies seeking to disrupt the sector is to focus on natural ingredients, an approach that can target the rising proportion of young people who are concerned about their own health and the environment while also attracting older people who are outside of the core demographic of current leading brands.

iprona is perfectly placed to support companies that want to take the natural route. The company has extensive experience of working with natural ingredients, flavourings, extracts and colours, including the seeds of the guarana plant that can provide the caffeine kick that is essential to energy drinks.

#### **Fruit and vegetable drinks**

Drinks containing fruit juice and vegetable ingredients are arguably the first functional beverages. Fruit juices enable manufacturers to create beverages that are popular with both kids and adults and achieve a wide range of flavors. Carbonation provides further variety and the addition of vitamins enhances the naturally healthy properties of the fruit juice itself.

There are also opportunities to combine fruit juice concentrates with vegetables. By combining fruit juice and vegetables with natural flavourings, extracts, herbs and, if a little heat is desired, ginger



or chili allows manufacturers to create beverages that look and taste great while being packed with natural healthy ingredients.

iprona, a company that has been working with fruit since 1923, has the skill set to help manufacturers incorporate fruit juices and vegetable ingredients into functional beverages that satisfy the full spectrum of consumer demands.

#### **Malt drinks**

Energy is the main thing that many consumers want from functional beverages. Caffeine is the traditional source of energy in functional beverages, and the bedrock of the current energy drink market, but there are other options. Notably, malt, an ingredient that has been used in the production of drinks such as beer for centuries, is a valuable source of energy that can be consumed by both adults and children.

iprona has worked to realise the potential of malt in functional beverages, combining the ingredient with fruit to create delicious drinks that

naturally boost energy levels. No flavourings are needed. iprona simply blends malt directly with juice to create natural fruit drinks, with or without alcohol.

#### **Sports drinks**

Sports drinks overlap with energy drinks but have some distinct characteristics. As well as providing the quick boost delivered by energy drinks, sports beverages are designed to give athletes and anyone else engaged in physical activity the vitamins, minerals and hydration they need to perform at their best.

Athletes and millennials are contributing to the growth of the market. The lower calorie counts of sports drinks compared to traditional soft drinks, which stems from their use of sugar alternatives such as stevia or a mixture of glucose, fructose and sucrose, is one driver of sales.

The people who buy sports drinks are demanding, highly informed consumers. iprona has invested in the capabilities to meet those demands, paying particular attention to how to optimise the isotonic value of its sports drinks. By focusing on the isotonic value, which is also known as the osmotic pressure level, iprona can maximise quick absorption to give consumers a high-speed energy boost.

#### **Tea drinks**

Analyses of the phytochemicals found in different types of tea, such as green and black, have provided evidence that the popular beverage can act as an antioxidant, anti-inflammatory and promoter of other positive health effects.<sup>14</sup> Served chilled, tea is a refreshing functional beverage.

Tea supports a wide range of flavour profiles. Choosing between the range of tea types, from traditional black tea through green tea or maté, and pairing them with fruit enables the creation of drinks that range from sweet to tangy. The use of sugar alternatives such as stevia minimises the calorie count and makes tea a good fit for health-conscious consumers.

iprona has specialized capabilities for fine tuning the flavour profile of tea drinks. The company turns tea leaves into natural cloudy infusions using iprona Infusion Technology. The technology allows iprona to adjust the strength of



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the tea flavour across a spectrum from bold tastes through to the barest hints.

### Freeze concentrates

iprona has multiple methods for producing juice concentrates. As well as using thermal concentration to reduce the water content from fresh or frozen fruit, iprona is one of a few companies worldwide that can separate water from fruit content using a protective crystallization method.

Protective crystallization is a cooling process that creates premium-quality freeze concentrates that are differentiated from thermal concentrates. Because no heat is applied during concentration, the freeze process optimally preserves the colour, flavour and taste of the fruit. The freeze concentrates are cheaper to store and transport than juice and have identical sensory properties to juice once reconstituted.

### Conclusion

The breadth of iprona's capabilities provides insight into what is now possible in functional beverages. By working with a partner that combines consumer insights, high-quality ingredients, sensory expertise and more, beverage manufacturers can create natural, great-tasting drinks that have validated functional effects and thereby position themselves to capitalise on the continued growth of the market.

*Meet us at FI Frankfurt (Booth # 3.1 D140) to discuss your idea and we will find your individual, tailor-made beverage solution*

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

## SK Capital announces the acquisition of J&K Ingredients

Funds advised by SK Capital Partners, LP, a private investment firm focused on the specialty materials, ingredients, and life sciences sectors, announced today the signing of an agreement to acquire J&K Ingredients, Inc.. Currently owned by CORE Industrial Partners, J&K is a market leading manufacturer and supplier of food and beverage ingredients with an emphasis on natural, organic, and clean label products. Terms of the deal were not disclosed. The transaction is expected to close before the end of the year.

Headquartered in Paterson, New Jersey, J&K is recognized as a leading food and beverage ingredient solutions provider, differentiated by its custom formulation and new product development capabilities focused on quality, function, and compliance. Founded in 1899, the Company developed the bakery industry's first natural mold inhibitor, Bred-Mate, more than four decades ago. In 2019 the Company launched SOR-Mate, the first high efficacy clean label alternative to potassium sorbate with applications across a variety of product categories including bakery, beverages, snacks, pet food, and dairy. The Company also serves the bakery market with a complete suite of specialty ingredients such as egg & milk replacers, emulsions, flavors, and bread bases.



**Dairy Ingredients made in Germany**





**Success needs best ingredients.**  
[www.ingredients.uelzena.com](http://www.ingredients.uelzena.com)

**Our Dairy ingredients give confectionery & chocolate a good taste**

It simply tastes better with our natural clean label ingredients from milk. Made of sustainably produced milk from our own dairy farmers.

- Sweetened condensed milk
- Skimmed milk powder
- Anhydrous milk fat
- (Frozen) Butter
- (Frozen) Cream





# Uelzena Ingredients – Milk-based ingredients that are “Made in Germany”



Uelzena eG is a dairy cooperative located in Northern Germany. All the milk-based ingredients of the Uelzena Group are marketed by the site-wide Uelzena Ingredients division, which focuses on the product groups of milk powder, butter, anhydrous milk fat, cheese and other milk products such as sweetened condensed milk and cream. The Uelzena Group has three production sites in Uelzen, Bismark and Warmsen, as well as a joint venture in Neumünster. The milk-based ingredient range is sold jointly by Uelzena eG and WS Warmsener Spezialitäten GmbH.

“We have closely cooperated with many of our customers for decades. That makes us very proud. Their high standards and a trustful exchange of information support our constant improvement.” describes Bernd Gewecke, managing director sales

ingredients, Uelzena’s relation to their customers.

All ingredients are produced directly from fresh milk or cream – free from any food additives and are naturally clean label products. Uelzena sources the majority of their raw material milk from own contract milk producers in northern Germany. This means short transport routes and guarantees both the availability and highest quality of the raw ingredient. It also means Uelzena knows exactly where their milk comes from. Best conditions for the production of high quality milk ingredients.

## Milkfats

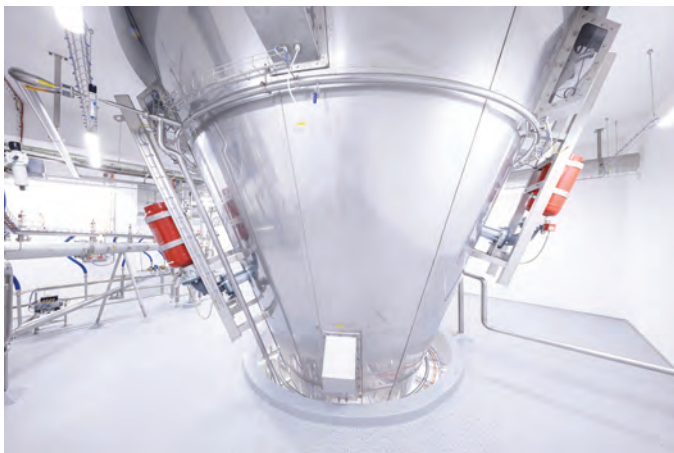
Uelzena produces various milk fats like lactic and sweet cream Butter as well as concentrated butter (AMF) at two production sites in Northern Germany. The product range is completed by a variety of speciality milk fat products such as laminating butter with a predefined melting point

for making puff pastries, milk fats with added vanillin or carotene, fat blends or decolourised white butterfat. Even tailor-made milk fat compounds can be developed.

Uelzena has a fractionation plant, which is the only one of its kind in Germany and uses a purely thermal and physical process to separate milk fats into hard stearines and soft to liquid oleins. After that, these fractions can be recombined to produce milk fats with precisely defined properties, for example with regard to melting point, degree of hardness or melting behaviour.

A special deodorisation plant enables Uelzena to extract the colour and, if necessary, the typical butter taste from the milk fat – also by purely physical means. This „White butterfat” is ideal for producing light creams, sweets, biscuit and praline fillings or for further processing with nuts, brittle or flavourings, accentuating those flavours but





keeping the melting properties of the butterfat.

#### Skimmed milk powder

Uelzena delivers several types of low heat and medium heat skimmed milk powder. The powders are of high-quality and optimised for solubility, particle size, dust production, denaturation and mixing behavior. Different protein and water contents are available, and it is also certified as kosher and halal. A sweet butter-milk powder completes the milk powder range.

#### Sweetened condensed milk and cream

WS Warmseener Spezialitäten GmbH, a member of the Uelzena Group, is one of the largest manufacturers of sweetened condensed milk, cream and special milk based compounds as an ingredient for the food industry. Their great strength is the very wide range of different recipes and the variety of packaging options suitable for industrial use. This includes products according to halal, kosher and Fairtrade certification as well as blends of sweetened condensed milk with vegetable oils. All sweet condensed milk products have a nice smooth texture, a clean taste without any 'cooked' flavour, and are technologically resilient to further processing.

Thanks to these specialised, often tailor-made products, the company has achieved an excellent reputation in the sector and has established its status as a supplier for speciality milk ingredients. "We are proud of the confidence our customers place in us and our ingredients. They view us as a reliable partner to support them in implementing their product ideas," comments Johannes Rother, managing director sales and marketing.

The second great strength of this milk

specialist is the production of customised semi-finished products developed using milk, cream and/or milk fats. These liquid compounds are developed in close collaboration with customers specifically for their respective application and are always optimised for further



processing, taking into account the customer's existing production technology. This gives rise to a wide variety of products, for example, to manufacture confectionery, crème pâtissière, desserts, as well as frozen and ready meals.

#### Product safety and quality

The production conforms to the highest

technical and hygienic standards. These certified standards are strictly monitored in a high level quality management system and are repeatedly confirmed in the multiple successful audits conducted by global food companies.

#### New spray drying plant for contract drying

After a two-year construction phase, the new spray drying plant of Uelzena eG has gone into operation. The new spray tower will increase the technological possibilities for the manufacture of infant-quality products of the experienced contract spray dryer to a new level. With this, the specialist for spray drying of various product groups from the food sector is further expanding its leading position in the market.

The new state-of-the-art plant, known internally as "Tower 12", is designed for the spray-drying of vitamins and minerals as well as other ingredients to the highest quality standards. "High Care" is therefore the top priority for the configuration and equipment of the new spray-drying plant. This includes, for example, a strict hygiene zone concept with hygiene sluices to separate the different areas, containment systems at the active ingredient dosing and filling plants, elaborate cleaning concepts with separate washing and drying rooms for cleaning plant components, and sophisticated ventilation and filter systems for fresh air supply.

Besides the spray tower itself, the new plant includes other central areas such as the feeding stations for ingredients and active substances, a separate wet mixing area with various technologies for preparing the delivered customer raw materials before the spraying process, filling facilities for 5 to 25 kg aluminium tubular bags as well as technical and social rooms. The result is a completely self-contained new spray-drying plant that will be state-of-the-art in terms of hygiene and efficiency.



[www.ingredients.uelzena.com](http://www.ingredients.uelzena.com)



# Alland & Robert obtains first ever fair-trade certification for acacia gum



Alland & Robert advocates for ethical supply chains. The company introduces fair-trade certified gum acacia, a reflection of its strong commitment towards the local communities linked to gum acacia.

Both the seyal and senegal qualities of acacia gum manufactured by Alland & Robert are available Fair For Life-certified. This is the first time that such a certification is obtained in the gum acacia industry, thanks to the unique commitment of Alland & Robert towards sustainability and ethics.

Violaine Fauvarque, sustainability manager at Alland & Robert, declared: « This certification is the result of our ambitious corporate and social responsibility policy. To us, this is the recognition of our long-term efforts towards a gum acacia supply chain that is beneficial to all parties involved. Fair trade promotes healthy and beneficial trade for people and the Earth. Participating in this collective effort makes us particularly proud ».

Alland & Robert is committed to be the leader of a fair industry that respects human rights and the environment. Products displaying the FFL label are guaranteed to come from environmentally friendly processes practiced by fairly paid farmers, from a transparent and traceable supply chain.

Charles Alland, CEO of Alland & Robert, said: "As the leading expert of acacia gum worldwide, we have a responsibility to our stakeholders. Our commitment to fair relations and sustainable products has been part of this company and its values since our beginnings. This certification embodies our unique work towards the local communities, and it strengthens our lasting



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relationships with our suppliers in the Sahel. We are extremely proud to be the first to achieve this certification, as we know it will meet the consumers' demand for ethics, traceability, and transparency".

This certification comes in addition to several other initiatives of Alland & Robert for an ethical and sustainable supply-chain, such as being a member of the SEDEX (Supplier Ethical Data Exchange) since 2009, committing to the WE-USE-WILD pledge from NGO TRAFFIC and launching a reforestation initiative in partnership

with NGO TREE AID.

The Fair For Life certification, an international standard for Fair Trade and responsible supply-chains.

Fair for Life promotes an approach of Fair Trade that allows producers and harvesters to take charge of their destinies through the recognition of their work. It is a collective and meaningful construction of life and society. The Fair For Life certification is also a guarantee of strict economic, social and environmental standards, set by the Ecocert group.

Fair Trade is part of a broader context of sustainable development within a region that safeguards and supports the local social fabric, particularly in rural settings. Particularly demanding, the FAIR FOR LIFE label guarantees:

- a fair purchase price higher than market prices,
- purchase commitments over 3 years minimum,
- a protection mechanism for producers in the event of a crisis,
- decent and safe working conditions throughout the sector,
- strengthening the autonomy of producers,
- environmentally friendly agricultural practices.

These principles apply throughout the whole supply chain covering producers, traders, manufacturers and brand holders.

Acacia gum, also known as gum Arabic or E414, is a natural, vegetal, safe, functional, and healthy additive used in flavours, beverages, confectionery, dairy, bakery, dietary products, pharma and cosmetics among others. Acacia gum is today found in thousands of day-to-day products all over the world.



©: Véronique de Viguere





### Alland & Robert at Food Ingredients Europe 2023

Created in 1884, Alland & Robert is a French family company and pioneer in natural tree exudates. With a strong focus on acacia gum, an entirely natural additive and ingredient, Alland & Robert exports to over 70 countries through a network of 40 distributors. With the aim of providing high-quality natural gums, Alland & Robert is fully committed to sustainable growth in line with its active corporate social responsibility plan, including the manufacturing of low carbon and ethical products, as well as the support and protection of African communities and environment thanks to the company Corporate Foundation. This vision is supported by a large

network of raw material suppliers in Africa, compliance with international certifications, a dedicated R&D team and partnerships with internationally recognized universities including Montpellier University.

Alland & Robert will be present at Food Ingredients Europe 2023, on hall 3.0, booth C220.



[www.allandetrobert.fr](http://www.allandetrobert.fr)



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## dsm-firmenich achieves regulatory clearance in China for two HMO ingredients for early life nutrition

**dsm-firmenich**, the leading innovator in health, nutrition and beauty, has announced that two of its human milk oligosaccharide (HMO) ingredients have been approved as fortifiers for infant nutrition in China. This approval is a significant milestone as it will create new opportunities for innovation in the field of early life nutrition and make the unique benefits of HMOs accessible to infants and young children in China. The only two approved HMO ingredients in the Chinese market The two HMOs that received approval in China include GlyCare™ 2'-fucosyllactose (2'-FL), the most prevalent HMO in human breast milk, and GlyCare™ lacto-N-neotetraose (LNnT), a complex sugar in human milk that is biologically relevant in the early development of the infant gut flora. The 2'-FL HMO has been approved for use in four food categories, including: infant formula, formula for elder infants and young children, infant formula for special medical purposes, and formulated milk powder at a usage level between 0.7-2.4 g/L. LNnT is available for the same applications at 0.2-0.6 g/L. Data on concentrations of HMOs found in human breast milk globally were taken into consideration by the China National Center for Food Safety Risk Assessment (CFSA) to set the approved maximum usage level. Currently, 2'-FL and LNnT are the only HMO ingredients approved in the Chinese market. "We are extremely pleased to be able to announce this huge milestone for the China infant formula

market and dsm-firmenich," says James Young, Vice-President of Early Life Nutrition at dsm-firmenich. "As the only company with these two HMOs approved for use in China, this approval reaffirms dsm-firmenich's lead position in the global HMO market. HMOs are the next important ingredient for bringing the composition of infant formula closer to breast milk, the gold standard of infant nutrition, and this approval ensures that all infants in China now have access to this important nutrient."

Christoph Röhrig, Head of HNC Glycans & HMO Regulatory Affairs at dsm-firmenich added: "We followed a rigorous regulatory process to ensure all safety and health requirements were met. In the first phase of this process, we achieved safety clearance from the Chinese Ministry of Agriculture and Rural Affairs (MARA) for several of our HMO production strains, including 2'-FL and LNnT. This was followed by the food additive approval process, which comprised a rigorous multiple phase technical assessment by the China National Center for Food Safety Risk Assessment (CFSA), including the opportunity for public comments, that required questions of diverse stakeholders to be addressed. With this breakthrough approval of two of our leading HMO ingredients in China, we are now able to offer two very important HMOs to the domestic infant nutrition market." HMOs are a powerful emerging ingredient capturing increasing attention

across the health and nutrition space due to recent technological advancements and a growing bank of scientific evidence showing their potential benefits, modes of action and applications. An important component of human breast milk, HMOs have demonstrated to play a fundamental role in infant health by supporting immune function, gut health and potentially cognitive development.<sup>i, ii, iii, iv</sup> As a leader in HMO research, development and production, dsm-firmenich is continuously pioneering advancements in this field and expanding its offering across the early life nutrition and dietary supplement markets. The company's science-backed GlyCare™ HMO portfolio is already available for use in more than 160 countries worldwide.

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[www.dsm-firmenich.com](http://www.dsm-firmenich.com)





# Plant power for immune health support

Andrea Zangara, Head of Scientific Communication and Medical Affairs, Euromed

**A** strong immune system exists in surveillance mode, waiting to eliminate pathogens as and when they arise. This leads to a temporary inflammatory state, which is part of a healthy immune response. However, when the immune system cannot revert to its initial state, unhealthy chronic inflammation develops. Once triggered, it can go silent for years, contributing also to age-related deterioration ("inflammaging"). Many diseases, including atherosclerosis, arthritis, diabetes, metabolic syndrome and obesity are associated with such inflammation and a weakened immune system. Mounting scientific evidence has evaluated the potential of botanicals for prevention and immune health support.

## Traditional use and new approaches

There are botanical extracts that are able to directly modulate immune response – such as echinacea – and those that strengthen the body's natural defences, such as ginseng and rhodiola. All are backed by a long history of research which

provides, for example, evidence of echinacea's immune-enhancing, antibacterial and antioxidant effects. The adaptogen rhodiola has also been shown to offer antioxidant, stress-reducing, antimicrobial and immunomodulatory benefits. Ginseng, meanwhile, is one of the leading dietary supplements thanks to its active immune modulation potential, which plays an important role in boosting immunity against bacterial and viral infections.

Additionally, consumers are increasingly realising the importance of heart health to reduce the risk of mortality and viral morbidity, and are therefore taking a preventive approach to heart care. For cardiovascular health, which is also a major predictor of COVID-19 outcome<sup>1</sup>, pomegranate and olive fruit extracts such as Euromed's Pomanox® and Mediteanox® have proven successful. Several published studies confirm the well-known heart-healthy properties of pomegranate and olive polyphenols. In addition, a study investigated the cardiovascular benefits of their combined administration to middle-aged people: After 8 weeks of daily intake, participants

who initially showed altered but asymptomatic endothelial functions and serum lipid levels, as well as elevated levels of oxidized LDL cholesterol and blood pressure, displayed significant improvements in these early markers of cardiovascular disease, compared to a placebo.<sup>2,3</sup>

## Immunity begins in the gut

Microbiome health should not be underestimated either when it comes to immunity. More and more consumers are learning about the connection between a healthy gut and overall well-being. In fact, 70-80% of the body's immune cells are found in the gut. Disruption of the gut barrier has been associated with various pathological conditions in the gastrointestinal tract and other organs. There are many ways to support gut health, and one of the easiest is through the use of prebiotics. For an efficient immune response, Cynamed® artichoke flower extract combines the traditional digestive and antioxidant properties of artichoke with the prebiotic activity of inulin, naturally present in the edible part of the plant. It has been shown to increase the production of beneficial Bifidobacteria and Lactobacillus and therefore has strong prebiotic potential.<sup>4</sup> With inulin and caffeoylquinic acids, the natural artichoke extract may contribute to a well-balanced microbiome, a healthy digestive tract and improved quality of life.

## Challenges and chances

The coronavirus pandemic has changed the way people around the world view their health and sales of immune-supporting products are now booming all year round. However, increasing consumer demand for botanicals, along with raw material shortages due to logistical problems, opens the door for counterfeit materials to enter the supply chain. This means that adulteration has become an even more important concern than before the pandemic. Full traceability is a key tool of the industry to prevent adulteration and







guarantee quality. For this reason, suppliers should have an integrated supply chain in place, where each step – starting with the raw materials – is traceable and accountable.

Furthermore, adaptogenic plants like ashwagandha and astragalus have the potential to offer additional immune-boosting effects. Some well-known herbal extracts may also have unexplored immune potential. A noteworthy example is milk thistle: Euromed's milk thistle extract has been extensively researched in clinical trials showing liver support as the major indication. However, antiviral properties of its flavonoid component silibinin are now emerging too: a clinical study is testing the therapeutic efficacy of silibinin in the prevention of acute respiratory distress syndrome (ARDS) in patients hospitalized with COVID-19<sup>5</sup>. R&D in this area has great potential and there will no doubt be further findings in the future on how we can better support immune health with natural products.

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## Biofortis strengthens its service offerings with the acquisition of analyze & realize

**B**iofortis, a leading European contract research organization in nutrition clinical trials and microbiota investigations for health, is strengthening its clinical centers network in Europe and its service offering, particularly in regulatory and scientific consulting, with the acquisition of analyze & realize GmbH.

Based in Berlin, with more than 20 years of experience in innovation of natural health products, analyze & realize (a&r) is one of the leading consultancy and clinical research providers in Europe.

This strategic move strengthens Biofortis' position in the European market and enhances its capabilities in providing a comprehensive suite of solutions to accelerate research and development in the life sciences industry.

Biofortis' expertise in nutritional research, clinical trials and collection, and microbiome analysis, combined with analyze & realize's clinical facilities and skills in regulatory affairs and strategic innovation consulting, will strengthen their ability to drive advancements of clients in the field.

The combination of the two companies provides a third clinical investigation site in Berlin in addition to the Nantes and Paris sites, and the volunteer base extends to almost 50,000 in France and Germany.



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# Natural ingredients for artisanal baked goods on an industrial scale

With its newly relaunched Slow Milling® range, GoodMills Innovation enables wholesale and industrial bakeries to create enticingly authentic products



Like any industry, bakeries are driven by trends and market developments that significantly impact raw material usage, production and end products. An artisanal approach has been driving the baking industry for some time now, and it is a trend that looks set to continue. Consumers increasingly demand baked goods that promise natural ingredients, outstanding, artisan-like quality and additional health benefits. Yet they are concerned about sustainability, too, with the health of our planet the most important global issue, and consumers responding by taking action to reduce waste, according to Innova research. "As the cost of living crisis continues, brands can succeed by taking actions that combine economic benefits with clear health and sustainability goals," says Lu Ann Williams, Global Insights Director at Innova Market Insights. "Redefining value across the food and beverage industry will lead the way in 2023, as consumers seek brands that listen to them, understand them and respond to their core values. They want brands that provide quality, trust, and confidence via their product formulations, communications and wider sustainability actions."

In short, shoppers are seeking out clean label bakery products that contain natural, sustainable, health-promoting ingredients – and at a price that suits their budget.

This is where the recently relaunched GoodMills Innovation's Slow Milling® range plays a key role: The return to artisan methods was the guiding principle for the comprehensive revision of its raw materials and recipes, coupled with premium quality and convenience for bakeries.

Natural baking has always been the approach of the Slow Milling® range. However, its current recipes are even more in tune with today's zeitgeist, with a special focus placed on the use of pre-doughs and long dough resting times for a truly artisan feel. In contrast to baking mixes, Slow Milling® allows plenty of scope for modifications to create baked goods with highly desirable and individual characteristics.







### Natural ingredients for enhanced safety

Naturalness, aroma and dough maturation are the focus of the latest Slow Milling® range. Yet it also offers product safety, reproducible results and, for example, an increase in fermentation tolerances.

In order to offer a wide range of baked goods with consistent appearance and quality, manufacturers must be able to rely on a certain level of baking safety. Slow Milling® enables this process through the use of entirely natural raw materials, so that the artisanal and natural character of the baked goods is preserved, even on an industrial scale. For example, the range includes a high-protein flour made from wheat or spelt - both in conventional and organic quality - bringing more security to the process.

### Raw material selection in line with demand

Put simply, the Slow Milling® range is a construction kit of value-added raw materials for baking technology and safety, as well as taste and aroma.

Value-added ingredients are flavourful and visually outstanding, and give a bread or pastry a unique character. When selecting raw materials, GoodMills Innovation places particular emphasis on providing manufacturers with a real opportunity to differentiate their products with high-quality inclusions such as malted flakes made from rye or spelt.

In terms of baking technology and safety, the focus is on consistent quality of baked goods, their recognisability and certainty of success - a basic requirement, especially for businesses that bake on an industrial scale.

Flavour and aroma are achieved primarily



through the appropriate management of the dough. How long and under what conditions the dough rests, and the yeast and enzymes are able to work, results in different dough and pastry properties.

One product example from the Slow Milling® range is the natural baking agent Fermenttic. For its production, GoodMills Innovation uses a wheat germ sourdough. In the bakery, Fermenttic is particularly suitable for Mediterranean wheat pastries such as ciabatta or grilled offerings which, with a relatively short processing time, promise a round aroma full of character as well as an open and glassy pore, and hearty crust. Previously time-consuming process steps have been factored into the production of Fermenttic in order to significantly improve the quality of the pastries, without any loss of time in the bakery.

Fermenttic is a cost-efficient, clean label dough ingredient that allows for the creation of aromatic, crispy bakery products with outstanding taste.

### Ultimate flavour and freshness

Another highlight of Slow Milling® is Ammber® Flour, an ancient grain from the Emmer range. As an alternative to ordinary wheat, it allows for the production of a variety of pastries made from ancient grain for enhanced consumer perception: Traditional bread wheat is increasingly viewed as highly-bred grain and has become a synonym for "empty calories". As a result, consumers perceive it to be ultra processed and therefore something to avoid. In contrast, baked goods made with Ammber ancient grain flour are distinguished by their subtle yellow crumb, aromatic taste and outstanding freshness.

Ammber® Flour allows for the creation of pastries with ancient grain that is naturally rich in

carotenoids, promises ultimate taste and freshness, and extended shelf life.

Also in the portfolio is Slow Milling® Wood-fired malt designed to enhance the aromatic flavour of products baked in a wood-fired oven. This clean label ingredient supports water absorption and an attractive crumb colour for authentic artisan creations.

### On-trend recipe concepts

GoodMills Innovation's Slow Milling® range includes a large number of basic recipes that guarantee successful application of the raw materials. However, all baked goods can be modified or expanded according to individual requirements, current trends and market conditions. The recipes are designed in such a way that they can be easily implemented in large bakeries and by industrial bakers. The catalogue includes countless suggestions and concepts that industrial bakeries can successfully implement, be it for bread, rolls or cakes. Coupled with the application expertise of the baking experts at GoodMills Innovation, the Slow Milling® ingredients allow for significant cost-savings in production, so that bakeries can offer customers premium baked goods at an appealing price.



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



# Redefining fried food with fat block technology



**Authors: Kelly De Vadder, Marketing Director and Caroline Ecoffard, Product Platform Manager  
Kemin Food Technologies EMEA**

**C**onsumers around the world are actively prioritizing health in their food purchasing decisions, while simultaneously demanding delicious yet affordable food experiences. Meanwhile, edible oil prices have doubled, and the clean label market is estimated to keep thriving. How can food manufacturers remain competitive in the fried food sector while juggling increasing production costs and evolving consumer demands - without compromising the quality of fried food products?

## **Achieve a guilt-free Indulgence when enjoying Fried Food**

When we look at the fried food market today, some of the challenges include affordability as well

as healthiness and clean label demands. Pain points that are associated with fried food processing are cost, clean label, health, and wellness, but also demanding consumers.

The World Bank has reported that edible oil price has almost doubled between 2020 and 2022<sup>1</sup>. For instance, palm oil showed an increase from \$752 to \$1,276, impacting the global inflation rate. Almost two in three consumers noticed price rises when shopping over the past year and Innova Market Insight revealed that 69% of consumers are actively trying to save money when buying food and beverages<sup>2</sup>.

The desire for affordable nutrition is becoming increasingly relevant as 50% of global consumers report having spent more on food and beverages since 2020. This has resulted in consumers opting

for lower cost foods, cooking from scratch, and searching for discounted items. However, the demand for nutritious foods remains, with consumers of all income levels ranking health above affordability as the most important factor in new product development. Food companies started tackling this issue, resulting in an 86% y-o-y growth in new products with budget and affordability claims<sup>3</sup>.

According to recent data of the United Nations, more than one billion people worldwide are obese, including 650 million adults, 340 million adolescents and 39 million children<sup>4</sup>. Hence, consumers' desire is to enjoy fried food but at the same time achieve a guilt-free indulgence.

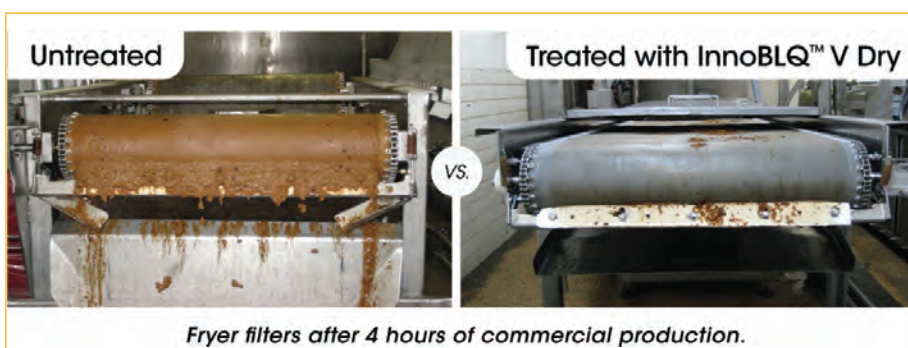
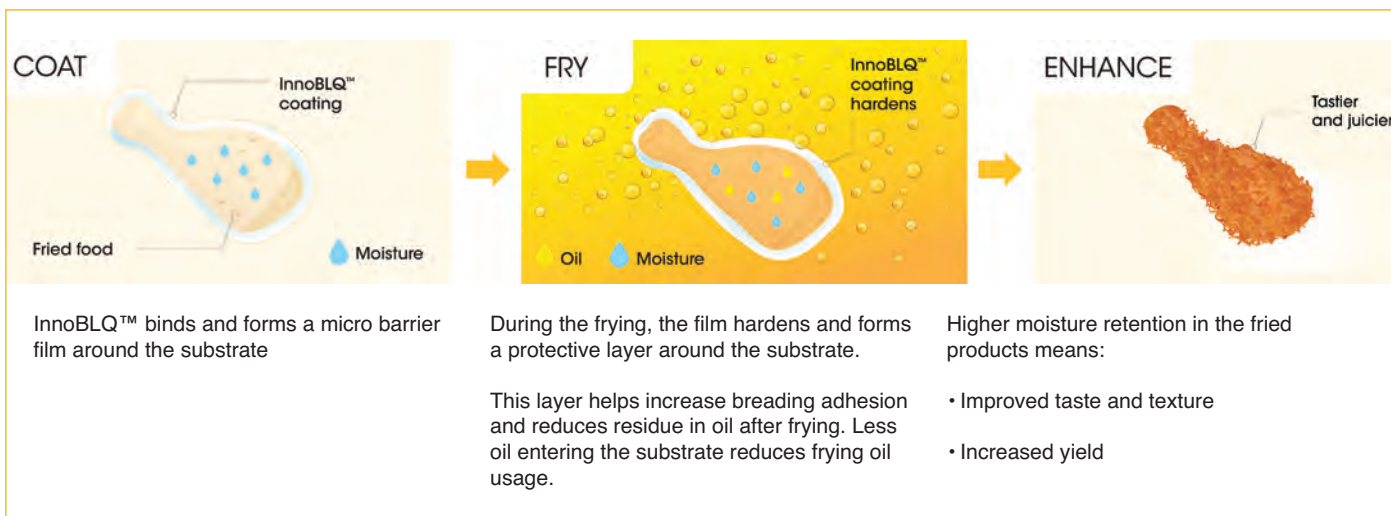
All above-mentioned aspects, including the demand for clean label claims, should be included



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InnoBLQ V Dry enables access to fried food products that are crispier and juicier with reduced oil absorption and fat content, all-in-all resulting in a less greasy mouthfeel food products.

into the developing process of new product innovation, meeting the needs of both manufacturers and consumers in today's challenging marketplace.

#### Adapting the production process to achieve cost optimization

Even though fried food can be unhealthy, strategies can be identified to make it healthier. Demanding consumers are expecting longer shelf life, at the same time they want to be stimulated sensorially – with unique product textures and enhanced quality.

The production of fried food products can be reviewed from an ingredient and production standpoint. Areas of pain points include raw materials, equipment, processing, and finished product. To reduce the cost of fried food products, the frying process can be optimized, improving production yield while reduce costs by using less oil to fry. Hence, the duration of the frying cycle will be extended while using the same amount of oil for longer. Furthermore, this will reduce the downtime in cleaning the fryers which offers energy as well as labor time savings.

Protective barrier technology by nature

Kemin scientists even went a step further creating a protective barrier technology for the fried food during frying. Introducing InnoBLQ™

V Dry, Kemin's fat-block technology made from a blend of plant-based proteins - specifically engineered to improve the quality of fried food while protecting the manufacturer's bottom line by reducing operational costs, increasing yield, and



meeting clean label demands. Highly versatile - InnoBLQ V Dry is applicable to a wide range of fried food products, including meat, seafood, vegetables, and various plant-based options. The product can be applied topically by dipping and spraying or added into the batter directly.

What makes InnoBLQ V Dry so effective? The secret lies in its modified protein technology. When food is fried in oil, the natural moisture content evaporates rapidly while oil is absorbed into the

food during the process. The end-product is a crispy food that is in fact dehydrated, but greasier with added calories.

However, when treated with InnoBLQ V Dry, a micro barrier is formed around the product and functions as a protective layer during the frying process. This layer maximizes moisture retention, reduces oil absorption, and increases breading adhesion - all of which directly contribute to improved product yield in terms of quantity and quality.

#### Economic savings and return on investment for your business

InnoBLQ V Dry offers economic benefits through cost savings and increased profitability through reducing oil usage by up to 18%, extending duration of frying cycle, increasing yield by up to 30%, and reducing time needed for Cleaning in Place (CIP).

#### Fat Content

18% reduced oil absorption in fried chicken nuggets treated with 4% InnoBLQ™ V Dry (before coating and in the batter solution)

Kemin's InnoBLQ V Dry is a game-changer that combats many of the challenges faced by quick service restaurants or by manufacturers of frozen packaged fried products. With increased yield and reduced costs, InnoBLQ V Dry is the answer for food manufacturers pivoting towards providing better quality and more profitable fried food products that meet evolving consumer demands.

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[www.kemin.com/innoblq-v](http://www.kemin.com/innoblq-v)

**The copy deadline for the February 2024 issue is January 31**

**Send your news to Terry Prior at [terryprior@innovationsfood.com](mailto:terryprior@innovationsfood.com)**

# What do we mean by immunity?

By Dr Carrie Ruxton – Fruit Juice Science Centre



With cold and flu season in full swing across Europe it's timely that we discuss the importance of our immune health.

The immune system is crucial for our survival, having evolved over hundreds of thousands of years. Without it, our body would be at considerable risk of disease-causing (pathogenic) microbes, such as viruses, fungi, bacteria and parasites. When working properly and looked after, our immune system can recognise our own cells from external threats and then enlist a proportionate immune response to deal with new or recurring pathogens.

In simple terms, when the body recognises a foreign protein – called an antigen – white blood cells produce antibodies. Once an antibody has been produced, our bodies make a copy so, if the same antigen returns, it can be attacked and treated more quickly - this is called acquired immunity and needs to be topped up throughout our lives. Another form, called innate immunity, is lifelong from birth and involves protection from the skin, and mucous membranes in the gut and lungs.

It is important to stress that optimal immunity is a fine balancing act between the body reacting to pathogens and tolerating things that are good – such as foods and our own body tissues. An immune system that is too fired up can lead to auto-immune conditions such as asthma, food allergies, Crohn's disease or rheumatoid arthritis.

However, an immune system that's too sluggish allows pathogens to flourish leading to a greater risk of infection.

This is why it is vital to build and support optimal immunity as much as possible all year round, to prevent the breakdown or imbalance of gut, respiratory and further immune barriers - which is hugely influenced by our nutritional and lifestyle choices.

## Which nutrients enhance immunity and protects us against seasonal illnesses?

Nutrition has a key and well-established role in immune health – to regulate and support both innate and adaptive immunity. Getting the right amount of vitamins and minerals proves vital in ensuring the proper function of immune cells, as well as the physical barriers of the skin and mucous membranes.

Many nutrients play an essential part in building immune support, but five that are particularly important are vitamin D found in oily fish and eggs, omega-3 fatty acids found in oily fish, seeds and nuts, gut modulators such as polyphenols and fibre, found in berries and wholegrains, alongside vitamin C and folate, found in fruits and fruit juices.

Although fruit juices are a great source of vitamin C and folate, and help to support the immune system, dietary intakes across the UK and Europe are low. According to the UK's National Diet and Nutrition Survey, adults typically drink just a quarter of a glass of fruit juice per day with

## About Dr Carrie Ruxton PhD

Dr Carrie Ruxton PhD, is an award-winning dietitian and health writer. With over 20 years' experience and 100+ published articles on health and diet, Carrie works extensively with the food industry, public sector, newspapers, radio and TV to communicate the science on nutrition and help people to choose healthier diets and lifestyles.

children and teens having less than half a glass. More widely across Europe, data from Statista suggest over a third (36%) of European adults drink less than a glass of fruit juice per week.

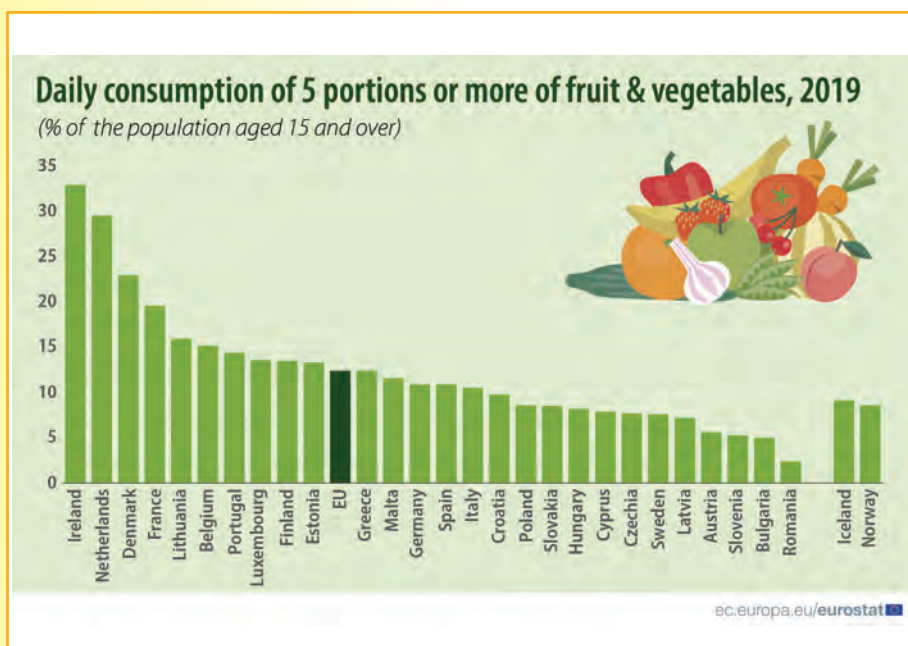
One of the key reasons why people are low in folate – and sometimes vitamin C – is that they don't eat the recommended 5 servings of fruit and vegetables per day. Staggeringly, on average across the 27 EU member states, only 12% of adults reported consuming five portions or more of fruit and vegetables daily in 2019 - according to EuroStat (2022). Data also indicates that 55% of people consume between one and four portions a day, with over a third (33%) eating less than one portion a day.

More than half a century of research has identified the multiplicity of roles played by vitamin C, being the first micronutrient to be recognised for its role in immunity. It is known to help recovery by counteracting the cell damaging effects of oxygen free radicals – loose electrons triggered by viral infections and collateral damage from the body's immune response. This makes it an active player in ensuring antioxidant protection and helping the body to recover from infection and inflammation.

It is also important to highlight that optimal immunity is not just about fighting off infection - but managing the impacts of inflammation. The polyphenols found in fruits and fruit juices are proven to be anti-inflammatory - helping to calm down and stabilise inflammation in the body. Fruit and fruit juice polyphenols also support healthy bacteria in the gut, which are instrumental in creating a strong barrier against pathogens and regulating the passage of nutrients and other useful substances between the gut and body cells.

## Top diet tips to support and enhance immunity?

Reassuringly, there are simple steps we can all embrace to strengthen our immunity – to fight pathogens, and ensure we stay fit and healthy throughout flu season and beyond. My top five tips to enhance immunity are:





**Eat the rainbow:** Aim for five portions of fruit and vegetables every day and go for the full rainbow of colours – green, red, orange, yellow, white and even blue – to top up on folate and other immunity nutrients.

**Drink up:** Drinking one 150 ml glass of 100% orange juice not only provides a serving of fruit but is a tasty, convenient way to get 80% of the daily vitamin C recommendation.

**Get fishy:** Go for two portions of fish a week to get immune support nutrients, vitamin D, zinc and selenium, as well as anti-inflammatory omega-3 fats.

**Fibre-tastic:** High fibre foods boost levels of good bacteria in the gut which add to your immune protection. Wholegrain cereals, nuts, seeds and vegetables are all good sources. It's also good to eat fermented foods such as yoghurt, sauerkraut and sour dough bread.

**Supplement:** Most of the vitamin D in our bodies comes from summer sunshine. In winter, top up vital supplies with a daily vitamin D supplement of 10-25 micrograms.

Ensuring our bodies are well fuelled with the right nutrients all year round is crucial for battling the risk of winter illnesses, such as colds, tummy upsets and flu. Weaving in simple, but important steps into our daily routine, such as drinking one 150ml glass of orange juice a day, can help us enhance our immunity and strengthen our bodies from the inside-out.

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Fruit juice consumption by country Europe 2021 | Statista

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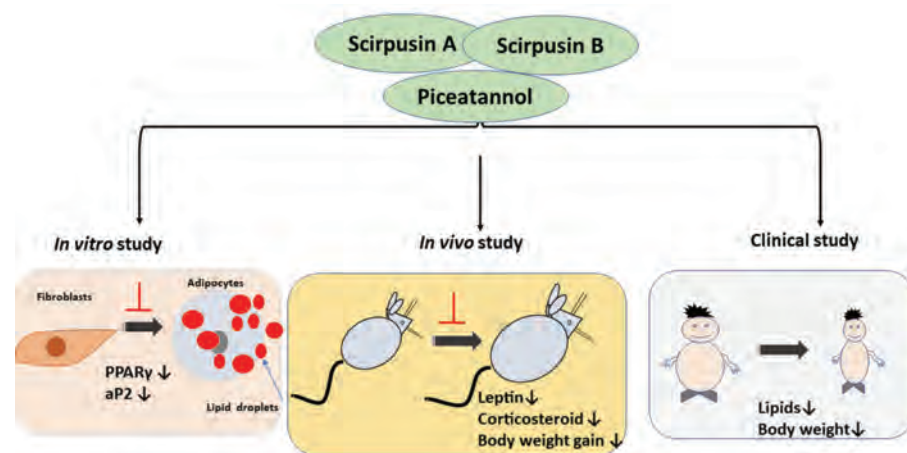


irpusins® is a standardized extract from the rhizomes of *Cyperus rotundus* containing 6-8 % stilbenes, in the form of Scirpusin A, Scirpusin B and Piceatannol. Scirpusin A is a dimeric hydroxy stilbene of resveratrol and piceatannol, whereas Scirpusin B is a dimer of piceatannol.

*Cyperus rotundus* is a perennial plant belonging to Cyperaceae family, grows naturally in tropical and temperate regions and is traditionally used to treat stomach disorders and emotional disturbances.

Obesity is a challenging condition involving excessive body fat that is a consequence of an imbalance in energy consumption and expenditure. It is the result of a complex interaction between environment, diet, genetics, lifestyle, endocrine disorders, medication, and psychological factors. More than just a cosmetic issue, obesity is a medical problem as it increases the risk of heart disease, diabetes, high blood pressure and certain cancers. Childhood obesity is now a growing public health concern where early prevention is critical. The prevalence of obesity is rising fastest in emerging economies. For most people body mass index (BMI) provides a reasonable estimate of body fat. As per the World Health Organization (WHO), individuals with BMI of 25-29 kg/m<sup>2</sup> is considered overweight and ≥ 30 kg/m<sup>2</sup> as obese.

Preclinical and clinical studies have shown the anti-adipogenic properties of Cirpusins®. Human clinical study showed that supplementation of Cirpusins® effectively managed the weight and hypercholesterolemia in overweight individuals (Majeed et al., 2022).



The stilbenes in Cirpusins® are polyphenols with multiple biological applications. Cirpusins® has been evaluated for weight management and maintenance of normal lipid profile.

Cirpusins® supplementation

Helps in weight management.

Supports normal lipid profile.

Promotes weight loss.

Cirpusins® can be used as a dietary supplement in the form of tablets, capsules, powder premix, and other food formulations, for weight management.



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

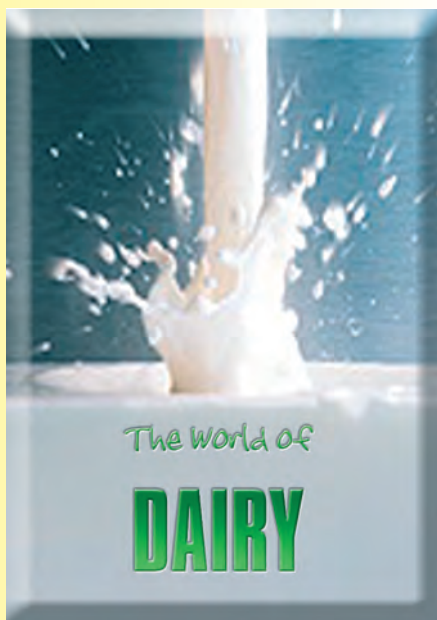


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## Chinese MARA approval of FrieslandCampina Ingredients' 2'-FL production strain brings unique prebiotics portfolio closer to launch

**M**anufacturers of infant milk formula in China will soon be able to access a unique range of prebiotic ingredients, following the approval of FrieslandCampina Ingredients' production strain of 2'-Fucosyllactose (2'-FL). The green light from China's MARA (Ministry of Agriculture and Rural Affairs) paves the way for Aequival® 2'-FL, a human milk oligosaccharide ingredient, to be launched in the world's largest early life nutrition (ELN) market. "Final nutrition fortifier" approval of Aequival® 2'-FL will mean FrieslandCampina Ingredients will soon become the



only provider of both human milk oligosaccharides (HMOs) and galacto-oligosaccharides (GOS) in China. This united proposition is highly appealing to brand owners in the ELN sector thanks to the complementary benefits the two types of oligosaccharide may offer when combined.

"This is great news both for us and for our Chinese customers – current and future," stated Cindy Zhao, general manager, FrieslandCampina Ingredients China, on the announcement. "The Chinese market has very specific circumstances that a combined GOS & HMO offering is the ideal response to. Here, health benefits are a significant priority for people selecting an infant milk formula: approximately 90% of parents say they are looking for them. For instance, gut health is a priority for 80% of parents of young children, and emerging scientific research is shedding a light on the gut health benefits that prebiotics like GOS and HMOs may have."

Scientists from FrieslandCampina Ingredients have particularly explored the possible benefits of combining GOS and 2'-FL, inspired by the variety and diversity of structures that exist in human milk. For instance, *in vitro* research has shown that these two types of oligosaccharide stimulate the beneficial bacteria *Bifidobacterium longum* in a species-specific manner. This suggests here is a clear opportunity for Chinese infant milk formula brands to respond directly to parental concerns about gut health. Nearly 30% of Chinese parents already recognise that prebiotics are beneficial in this area.

2'-FL is an ingredient found in an increasing number of infant milk formula products in other parts of the world, and is trusted by brand owners to deliver health benefits in infancy thanks to a growing body of research showing its value to infant health.

"From the point of final approval, Chinese customers will be able to purchase GOS and 2'-FL from one trusted and experienced supplier with a long heritage in the Chinese infant nutrition market," Zhao continued. "In doing so, they can increase the diversity of oligosaccharide structures in their formulations and thereby unlock exciting new opportunities to differentiate their products, add more value for consumers and attract more parents to their brands."

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

## Combining the goodness of milk and plant ingredients

**M**ilk is an important source of nutrients like protein, calcium, and vitamins, and provides several health benefits across all life stages. On the other hand, plant-based ingredients are also an important source of protein, essential amino acids, healthy fats, other nutrients, and come with sustainability benefits. To deliver the best of both worlds, Nestlé is innovating products that are made with a blend of milk and plant ingredients.

Laurent Alsteens, Global Category Head for Early Childhood Nutrition at Nestlé, says: "We continue to expand our offerings with nutritious, tasty, products that complement the everyday diet of children and their families. Through combining the goodness of dairy and plant ingredients, we can deliver a new flavor experience together with nutritional benefits."

This week, Nestlé launched the company's first affordable and nutritious instant powder in Central and West Africa that is made with a blend of milk and plant ingredients. By combining the double goodness of milk and locally sourced soy, it contains essential nutrients such as protein and fiber and is a source of iron and calcium. Developed locally by Nestlé experts at the regional R&D center in

Abidjan, Côte d'Ivoire, the versatile product can be enjoyed with a variety of cereals, porridges, and drinks. Nido Milk & Soya is now available in Nigeria.

Tesfalidet Haile, Head of Nestlé's R&D Center in Abidjan, says: "We used our local expertise in cereals and dairy innovation to combine milk powder with a plant-based ingredient, while ensuring that the product had a good taste, texture, and solid nutritional credentials. This combined with the use of locally sourced soy enabled us to deliver a nutritious and affordable milk and plant-based beverage with sustainability benefits."

Additionally, through the R+D Accelerator located at the R&D center in Konolfingen, Switzerland, Nestlé teams leverage the center's expertise in dairy and dairy alternatives to rapidly develop and test new concepts that combine both milk and plant ingredients.

Last year the teams developed a nutritious powdered beverage made with a blend of milk and soy, and fruit that was first piloted in Asia. The beverage was tailored specifically to meet the nutritional and taste preferences of children, in an affordable and sustainable way.

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







## Imagindairy obtains self-affirmed GRAS status for animal-free dairy protein

**I**magindairy, an Israeli-based food tech startup that is reinvigorating the dairy industry by producing sustainable, animal-free dairy proteins that have the same bold flavor, functionality, mouthfeel and nutritional properties as those from bovine sources. Imagindairy combines the age-old art and science of precision fermentation with its proprietary AI platform, which integrates both advanced computational biology and molecular biology technologies, to enable mass-scale production at costs that are in line with traditional dairy, making mass-market adoption a feasible reality.

Today, Imagindairy is announcing that it has obtained self-affirmed GRAS (generally recognized as safe) status for its animal-free dairy protein in accordance with the requirements laid out by the U.S. Food and Drug Administration for food. The novel ingredient underwent significant internal and external review and safety testing. The FDA has been notified of the ingredient's self-affirmed GRAS status.

In tandem, Imagindairy is opening its new and improved headquarters near Haifa, Israel. The space has been custom-designed to support Imagindairy in its next phase of growth with state-of-the-art laboratories for research and development of ingredient solutions, a test kitchen for culinary and ingredient applications testing, and its own fully operational pilot line that allows for testing in conditions similar to those in large scale fermentation processes. The space will also serve as the company's new headquarters with a variety of office spaces and shared workrooms.

Securing self-affirmed GRAS status is a pivotal step in the commercialization of Imagindairy's animal-free dairy protein. GRAS status signifies that the ingredient is safe to be used in food and beverage products, providing a regulatory 'green light' for food and beverage manufacturers to partner with Imagindairy. This empowers the company to partner with food brands and manufacturers to bring animal-free versions of beloved dairy products like milk, cream cheese and yogurt to consumers nationwide.

Organizations interested in working with Imagindairy to develop animal-free dairy products can reach out to [explore@imagindairy.com](mailto:explore@imagindairy.com) to learn more about product development opportunities. Imagindairy's new offices are located near the city of Haifa, a region booming with high-tech companies.

## dsm-firmenich launches Delvo® Fresh Pioneer starter cultures for impressive pH stability throughout indulgent mild yogurt production and shelf life

**dsm-firmenich**, a global leader in nutrition, health and beauty, has launched Delvo® Fresh Pioneer - a new generation of starter cultures for very mild yogurts. Enabling exceptional pH stability during processing and throughout shelf life, this launch addresses yogurt manufacturers' need for high quality ingredients, stable production processes and consistent mildness throughout shelf life. Part of dsm-firmenich's toolkit for fermented dairy, this range is the result of the company's biotechnology expertise and commitment to purpose-led science.

With this generation of cultures, yogurt pH is extremely stable for up to 60 days in cold storage, representing a significant improvement compared to other cultures for mild yogurt recipes.

### Consistency is key

The fermented milk market continues to grow and is expected to reach a value of approximately EUR 100 billion by 2027.<sup>1</sup> With this growth comes an increased need to ensure consistency during production, mitigating unwanted variations in taste, texture and overall yogurt characteristics. Parallel to this, many consumers are turning to premium retail products, with 59% of people regularly enjoying indulgent treats such as mild yogurts.<sup>2</sup> For fermented dairy manufacturers, the pressure is on to provide indulgent eating experiences and ensure taste and texture stay the same on shelf. As such, there is a need for a new generation of starter cultures that combine quality, consistency and pH stability.

### Cultures fit for purpose

Designed by dsm-firmenich experts, Delvo® Fresh Pioneer starter cultures offer modern dairy manufacturers remarkable flexibility to create various mild yogurt recipes with optimal consistency in taste, texture and quality from batch-to-batch. Guaranteeing a delicious, smooth, creamy yogurt throughout its shelf life gives consumers the confidence they will enjoy a great tasting indulgence – every time.

Delvo® Fresh Pioneer cultures lead to significant and measurable reductions in post-acidification compared to other mild cultures. The significant pH stability is even more apparent with more challenging storage conditions, such as higher



temperatures.

The new cultures are ideal for high-value recipes such as smooth, creamy yogurts and mild, reduced sugar yogurts with 'better-for-you' appeal.

"We're investing heavily in culture development as we know the possibilities are near limitless, and more taste, texture and health benefits are out there to discover. These new cultures complement our fermented dairy toolkit of starter, bioprotective and probiotic cultures, enzymes, hydrocolloids and nutritional solutions," comments Karoline Kjaerulf, Global Business Development Manager, Fermented Milk & Plant, dsm-firmenich. "The new Delvo® Fresh Pioneer cultures give yogurt manufacturers the tools needed to produce delicious, mild yogurt – consistently. The ideal pH stability enabled by these new cultures is what sets them apart, and for dairy manufacturers consistency and flexibility really are key to success. This launch was made possible by our biotechnology powerhouse which brings together renowned scientists, application experts and cutting-edge technology to solve the food industry's biggest challenges."

To learn more about the full capabilities of the Delvo® Fresh Pioneer portfolio and its potential to optimize yogurt production, visit [Delvo® Fresh Pioneer](https://www.dsm.com).

### References:

- 1 Euromonitor accessed 2023 (CAGR 2022-27)
- 2 FMCG Gurus top trends for 2023, FMCG gurus Growth Opportunities in Dairy - 2022 - Global Report, The Reinvigoration of the Dairy Sector 2022

[www.dsm.com](https://www.dsm.com)

## New Dragon cheese gems are launched with tasty recipes

**S**outh Caernarfon Creameries has recently launched its premium range of cheese, Dragon Handcrafted Range, with new flavours and new packaging and now stocked in Tesco, Asda and Morrisons.

Matured in Llanfair Slate Caverns in North Wales, the Dragon Handcrafted selection has been named after precious gemstones and metals – Cavern Platinum, a vintage cheddar, Cavern Ruby, a Welsh red Leicester, Cavern Emerald, cheddar blended with leek and lastly Cavern Onyx, cheddar with the award-winning Welsh Penderyn whiskey.



<https://dragonwales.co.uk/category/handcrafted/>

# Advancing science-based early-life nutrition through a proprietary blend of HMOs and probiotics

**N**estlé has announced its latest science-based innovation for early-life nutrition. The company has developed Sinergy, a proprietary blend that combines a specific probiotic with six human milk oligosaccharides (HMOs) to support age-adapted infant development by unlocking specific health benefits.

Probiotics play a key role in supporting the gut microbiome and immunity during infant development. Similarly, HMOs, a crucial component of breastmilk, support intestinal microbiota development and nurture the immune system during early life.

Over the years, Nestlé has been at the forefront of understanding the composition of various nutrients and bioactives that are present in breastmilk such as proteins and HMOs. Nestlé also has extensive expertise in probiotics and their role in nutrition and health.

Nestlé experts have now further explored the interaction of these different nutrients and bioactives. They have unveiled how a specific strain (*B. infantis* LMC11588) has the ability to efficiently absorb and metabolize HMOs, thereby producing key beneficial compounds, in addition to the direct benefits already provided by the HMOs and the probiotic individually. The combination of these elements creates a synergistic effect, resulting in a dominance of bifidobacteria which through their metabolic activity can lead to a more favorable gut environment and stronger immunity in the infant.

Laurent Alsteens, Global Head of Early Childhood Nutrition at Nestlé, said: "We are absolutely committed to engaging in ground-breaking research and are working with healthcare professionals to contribute to optimal nutrition in

early childhood through clinically tested solutions that provide the essential nutrients for babies that cannot be exclusively or who are only partially breastfed. In this way, we can help advance breakthrough nutritional solutions for infants with ingredient blends to support age-appropriate growth, digestive health, bone, muscle and cognitive development and the immune system."

Building on their deep expertise, Nestlé teams developed the new Sinergy proprietary blend containing an infant-specific probiotic strain along with a blend of HMOs. Research shows that the composition of HMOs in breastmilk changes during the lactation period. Therefore, to meet the specific needs of infants according to age, products containing the new blend have varying levels of six different HMOs.

Isabelle Bureau-Franz, Head of Nestlé's R&D for Nutrition, said: "Nestlé is a pioneer in the research and development of early-life science-based

solutions. Thanks to our continuous scientific advancements, we have discovered the important benefits of combining our proprietary *B. infantis* probiotic with a blend of six HMOs. Leveraging our innovation expertise, we developed this breakthrough solution by successfully translating the new scientific findings, scaling-up the production of the probiotic and carefully adapting the levels of six HMOs according to age."

The new blend has just been launched in Hong Kong. Its rollout will commence in Latin America towards the end of this year and in Europe early next year under the *NAN Supreme pro* brand.

This launch builds on Nestlé's commitment to develop science-based solutions for early-life nutrition. Nestlé was also the first company to introduce infant formula containing a complex of 5 HMOs globally, and the company currently has various products containing HMOs in more than 50 countries.



## FrieslandCampina Ingredients doubles whey protein isolate and milk fat globule membrane production

**F**rieslandCampina Ingredients, a global leader in proteins and prebiotics, has announced it is doubling its whey protein isolate and milk fat globule membrane (MFGM) production.

With the expansion of its Borculo (NL) plant, the company will significantly increase its whey protein isolate and milk fat globule membrane total capacity, helping to meet rising global demand for high-quality, specialised ingredients. The production expansion is part of FrieslandCampina Ingredients' commitment to driving innovation to meet the needs of customers and consumers around the globe.

Speaking on the announcement, Herman Ermens, President of FrieslandCampina Ingredients, said, "As consumers of all ages become more proactive about their health and well-being, and that of their families, they're increasingly looking for specialised ingredients that bring the benefits they value. As a result, now is the perfect time to bolster our production of two key ingredients for the performance, active and early life nutrition markets. Thanks to our agility and technological expertise, we're ensuring that we're delivering the high-quality, uncompromising ingredients that will help consumers with special

dietary needs or preferences to get the most out of life, always."

Herman continues, "I truly believe that the future of whey lies in higher performance, specialised ingredients that make the most of dairy's nutritional profile. With over 100 years of experience in dairy proteins, from research to processing technology and application know-how, this upscaling reflects our commitment to delivering premium whey ingredients and supporting our customers in meeting evolving consumer demands."

### Meeting surging demand for specialised ingredients

Demand for high-quality whey protein ingredients has grown significantly in recent years, especially in specialist applications such as protein bars, shots and waters. The early life nutrition and the performance and active nutrition markets have demonstrated a strong appetite for highly nutritious ingredients. Whey protein isolate and MFGM each have unique benefits in these segments, and FrieslandCampina Ingredients' investment will enable more brand owners to offer these advantages in their products.

Whey protein isolate is hugely popular in the

performance nutrition market, as it has an excellent amino acid composition and can be incorporated into a wide range of beverage and powder applications requiring specific qualities and characteristics. MFGM, on the other hand, has traditionally catered to the early life nutrition market and is backed by a growing body of evidence, enabling premium brands to offer appealing brain and immune health benefits in their product propositions. MFGM is now of increasing interest for adult nutrition due to its suggested cognitive health and gut health benefits.

The new ingredient expansion will commence commercial production early 2026. As capacity grows, FrieslandCampina Ingredients will use a unique combination of filtration processes to preserve the whey's bio-functionality, ensuring both the quality and the efficacy of the final ingredients. Production will comply with the best available manufacturing techniques. FrieslandCampina Ingredients is actively working on an integral reduction of CO<sub>2</sub> emissions for the Borculo plant in line with its 2050 climate plan ambitions.

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



## PGP International partners with bioactive ingredient innovators, Brightseed, to produce new Bio Hemp Fiber Crisps

**U**p to 7 in 10 consumers regularly seek out food and drinks to help improve their digestive health<sup>1</sup> and 75% of them consider fiber to be an effective gut health ingredient<sup>2</sup>.

That is why PGP International (PGPI) has partnered with AI-powered bioactives company, Brightseed, to develop their new Bio Hemp Fiber Crisp. This extruded crisp product is formulated with a blend of PGPI's high-quality rice flour and Brightseed's Bio Gut Fiber. Featuring two bioactives for gut health, Bio Gut Fiber is a novel insoluble fiber ingredient made from upcycled hemp hulls.

Brightseed Bio Gut Fiber is a dietary fiber ingredient containing two bioactive compounds, NCT (N-trans-Caffeoyltyramine) and NFT (N-trans-Feruloyltyramine). These were identified in hemp hulls by Brightseed's own Forager® AI and preclinical studies have shown that they support gut integrity to help maintain gut barrier function<sup>3</sup>.

PGPI's Bio Hemp Fiber Crisps provide a source of these bioactives as well as distinctive crispy or crunchy texture with 20% fiber content. This makes them ideal for applications such as snack bars, granolas, clusters and other functional foods looking to deliver added dietary fiber content and support gut health.

"As a company that was started by turning the waste product of rice processing into functional and nutritional ingredients, we're proud to partner



with other organizations that share our values," says Angelica Horst, CEO of PGP International. "With Bio Gut Fiber's recent Upcycled Certification and Non-GMO Project Verified certification, Bio Hemp Fiber Crisps not only provide nutritional value to product applications, but they also align with consumer desires for more natural and sustainable plant-based ingredients in their snacking choices. Bio Hemp Fiber Crisps are also gluten- and allergen-free to support a clean label nutritional declaration"

For more information about this product, or to request a sample, please visit: <https://www.pgpi.com/en/products/extruded-grain-and-protein-crisps/bio-hemp-fiber-crisps/>

#### References:

1. FMCG Gurus 2022
2. Innova Trends Survey 2021
3. Based on recently published preclinical data. (Bolster, D., Chae, L., van Klinken, J.-W., and Kalganekar, S. (2022). Impact of selected novel plant bioactives on improvement of impaired gut barrier function using human primary cell intestinal epithelium. J. Food Bioact. 20: 11–16.)

## AMF Bakery Systems welcomes Clint Adams as Commercial Director for Americas

**A**MF Bakery Systems (AMF) welcomes Clint Adams as commercial director, North America Specialty Segments. In this leadership role, Adams will elevate and strengthen AMF's sales, project management and customer care efforts within strategic bakery segments including artisan bread and rolls, pizza and flat-breads, cakes, pies, pastries and more.

An industry veteran and previous teammate at AMF, Clint Adams has over twenty years of experience working in the baking industry in roles of increasing leadership first in bakery operations and more recently in sales leadership in equipment manufacturing and automation. As commercial

director, Adams will partner closely with Americas Sales Director Adrian Dee on sales strategy and execution while also bringing leadership focus and oversight to overall project execution and after-market care for North American customers in these segments.

"This is a wonderful 'welcome home' to Clint, who spent 9 years with the former Tromp Group USA and AMF from 2011 to 2020," noted Jason Ward, president and CEO of AMF. "We look forward to bringing Clint's deep knowledge of bakery automation and operations, strong customer relationships and sales leadership capabilities back into our organization."

## Innophos releases new whitepaper showcasing LEVAIR® ESL patent-pending technology for the bakery industry

**I**nnophos, a global leader of specialty ingredient solutions that deliver far-reaching, versatile benefits for the food, health, and nutrition markets, announces the release of its latest whitepaper, "LEVAIR® ESL, A New Solution for Extending Shelf Life of Bakery Products."

The most recent whitepaper showcases LEVAIR® ESL technology, a patent-pending ingredient solution, that enhances product longevity, mitigates spoilage, and maintains freshness over time. LEVAIR® ESL also helps commercial bakeries achieve competitive advantage through efficiency gains, increased profitability, and higher quality products.

In the paper, Innophos experts provide details on multiple applications in three case studies highlighting muffins, pound cakes, and donuts.

Key insights from the whitepaper include:

- The environmental and economic impacts of reducing food waste
- How extending shelf life increases profitability for commercial bakeries and retailers



- Strategies for extending the shelf life of baked goods
- An in-depth exploration of the functionality of LEVAIR® ESL technology
- Comprehensive data, inclusive of physical characteristics, microbiological tests, and sensory evaluation outcomes

"We're thrilled to share the science behind our patent-pending ESL technology," said Sherry Duff, Senior Vice President of Marketing and Technology at Innophos. Duff added, "I'm excited to continue to build out our LEVAIR® portfolio of technology-based solutions for the bakery industry."

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

**The feature and advertising deadline for the February 2024 issue is January 31**  
**If you wish to have a feature or advertise please contact David Copperfield Tel: +33 466 580562**  
**Email: [davidcopperfield@innovationsfood.com](mailto:davidcopperfield@innovationsfood.com)**

# Kemin Food Technologies EMEA introduces SHIELD® V Plus Dry: Baking innovation for fresh and mould-free delights

**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, has developed a unique, potassium-sorbate alternative for the bakery industry. SHIELD® V Plus Dry, a natural ingredient made through cutting-edge technology, offers an unparalleled solution for inhibiting mould growth and extending the shelf life of bakery products, and is now available for food producers in the EMEA (Europe, Middle East and Africa) region.

Developed by a team of expert food scientists and industry professionals, SHIELD V Plus Dry combines the preservation properties of buffered vinegar with the anti-mould properties of a botanical extract. The result is a powerful food solution that significantly inhibits mould growth in cakes and delays the formation of mould in tortillas and flatbreads, naturally prolonging the freshness and quality of bakery products.<sup>1</sup>

The global cake market size was valued at USD\$42.94 billion in 2019 and is anticipated to grow at a compound annual growth rate (CAGR) of 3.3% from 2020 to 2027.<sup>2</sup> The high popularity of celebrating various types of special occasions and successes through cake cutting is expected to



remain a key driving force over the next few years. Moreover, the rising demand among Millennial and Generation Z consumers for cake as dessert following a meal when dining out and at weekend parties across the globe is projected to grow the industry.<sup>2</sup>

Unlike traditional preservation methods that rely on synthetic additives, SHIELD V Plus Dry is a consumer-friendly option that boasts a balanced flavour profile and heat stability. It allows manufacturers to meet the demands of health-conscious consumers<sup>3</sup> without compromising on taste or sensory attributes.

One of the key features of SHIELD V Plus Dry is its versatility. While specifically formulated for bakery products, this innovative solution can also be

applied as a natural alternative to potassium sorbate in emulsions, sauces, dressings and other highly aqueous foods. Its naturally occurring active molecules—such as acetic acid and sorbic acid—work in synergy to slow down the development of moulds, ensuring product freshness over an extended period.<sup>4</sup>

"We are thrilled to introduce SHIELD V Plus Dry to the bakery industry," said Caroline Ecoffard, Product Platform Manager, Kemin Food Technologies – EMEA. "Our product represents an additional step in natural preservation, offering bakery manufacturers a powerful tool to extend the shelf life of their products while meeting consumer demands for clearer labels and superior quality."

SHIELD V Plus Dry is the result of extensive research and development conducted with a strong commitment to sustainability and food safety. The product aligns with the industry's growing emphasis on natural ingredients and environmentally conscious practices.

#### References:

1 Kemin internal study 23-21175

2 Cake Market Size & Share | Industry Report, 2020-2027 | Grandview Research

3 Food Industry Executive - How Consumers View Food Ingredients, published June 2021

4 Kemin internal study 23-6369 & 23-6370

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

## Lallemand celebrates one century of yeast production on Montreal

**L**allemand recently celebrated a significant milestone: 100 years of yeast production in its production plant on rue Préfontaine, Montreal. Colleagues from all around the world, clients, partners, and local politicians joined company executives for the celebration of this important landmark.

"A 100 years! This is a great opportunity to pay tribute to our supportive business partners, valued customers and our talented employees who have all played a part in our success story," stated Antoine Chagnon, President and CEO of Lallemand. "I raise my glass to those who built this factory, originally dedicated to baker's yeast for the local market, and the visionaries who made it a launching platform for the global company that Lallemand has become today" he concluded. Mr. Chagnon took the helm of the company in 2015, succeeding his father Jean, and grand-father Roland before him.

Notwithstanding its respectable age of 100 years, Lallemand's Préfontaine plant has a bright and rich future ahead, due to the potential of microbes to help addressing some of the most pressing issues of our times.

"We are all facing new challenges: climate change and feeding the entire planet are on the menu for the coming decades, and innovative microorganisms can play a key role in facing them. Among others, they can help us reduce carbon emissions, lower the use of antibiotics and chemical preservatives, increase the amount of plant proteins in our diet, and promote the use of microbial fertilizers or biological crop protection

products that reduce the use of fossil products," said Antoine Chagnon. "We are also working on the next generation of probiotics to promote further health benefits," he added.

Lallemand has now a diverse and global presence in 50 countries over 5 continents, employs more than 5000 employees and operates 48 production facilities, including 24 yeast and 10 bacteria plants. The company develops, produces, and markets yeast, bacteria, fungi, and derivatives of these microorganisms for applications in baking, wine, beer, distilled spirits, fuel ethanol, animal and human nutrition, pharmaceutical industry, and

other food and agricultural industries.

Lallemand is present in the daily life of hundreds of millions of people around the world, including:

- 600 probiotic formulas, distributed in over 60 countries.
- In 1 out of 3 bottles of scotch whisky.
- In 22+ billion bottles of wine.
- In 30+ billion loaves of bread
- In tomatoes grown with without chemicals, feeding 10+ million people in Europe

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







## Wheat's the new meat when it comes to summer sizzlers!

**T**he Crespel & Deiters Group, one of the leading wheat processors in Europe that recently opened a U.S. subsidiary, Crespel & Deiters Food USA LP, is inviting U.S. food manufacturers to jump on the wheat-based meat alternatives bandwagon with an exciting range of Crespel & Deiters' wheat texturates to create outstanding BBQ-friendly meat-alternative products made with sustainable and innovative ingredients and solutions.

There's no denying that booming sales of meat alternatives show no sign of cooling off, largely as a result of an ever-increasing number of flexitarians – consumers who eat meat yet also enjoy plant-based products.

But to win over this target group and guarantee repeat purchases, authentic mouthfeel and taste are both crucial. That's why ingredients expert Crespel & Deiters has developed combinations of wheat texturates that can be used by manufacturers to create plant-based versions of grilled classics such as steaks, sausages, burger patties, fish fillets and much, much more.

Whether Americans are firing up the summertime grill or are getting ready to keep the party going all the way through Fall, they're increasingly seeking out sizzling plant-based alternatives for a lot of reasons, including the desire to prepare super-tasty vegetarian alternatives to saturated-fat-laden BBQ faves.

Two of the many advantages of choosing Crespel & Deiters as your meat-alternative-ingredient pitmaster partner are:

1. Sustainable and future-oriented

With a growing need for more sustainable foods, plant proteins will increasingly play an important role in the market for years to come. Wheat as a raw material scores high thanks to its multifunctionality and regionality: Almost 99% of each grain can be recycled through the production of co-products, thus ensuring a resource-conserving approach to the environment. The use of wheat-based ingredients is another step towards future-oriented end products that encourage consumers to make health or values-based repeat purchases.

### 2. Tailor-made texture

With the addition of water, texture can be adjusted and tailored to individual applications, as the degree of hydration determines bite strength. For a classic American "home-style" burger patty, different shapes and sizes be combined, and made firm or soft according to individual formulator preference. An authentic replica of the original animal-based 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 processing procedures and desired product properties.

The basis for "grillable" meat alternatives is extruded wheat proteins and wheat-based binding components from Crespel & Deiters, which are neutral in taste and smell. This gives manufacturers an unlimited opportunity to individually flavor their products, all of which can be easily produced using standard meat processing equipment.

Let Crespel & Deiters show you how to develop amazing plant-based BBQ favorites!

## Scoular acquires grain facility in Logan, Montana

**S**coular has acquired Circle S Seeds-Grains' grain handling facility in Logan, which will extend Scoular's Montana trade footprint and expand market opportunities for local producers.

The Logan facility has a storage capacity of 400,000 bushels. It will handle local red spring and

red winter wheat, in addition to feed barley.

Scoular also operates a facility in Butte, Montana, about 60 miles west of Logan. Scoular is a multi-generational agribusiness serving farmers since 1892. The company is headquartered in Omaha, Nebraska.

"Our merchandisers and elevator crew in Butte have built strong relationships with producers and customers throughout the region," said Scoular Regional Manager Brian Ring. "We look forward to creating new relationships and to building off the thriving business and local marketing solutions provided by generations of the McDonnell family and their Circle S employees."



## Plant-based tuna alternative with authentic mouthfeel

**I**ngredients specialist Loryma has developed several application recipes for vegan tuna that deliver authentic, fibrous sensory qualities and a delicate texture. The fish alternative can be prepared in the same way as the original, and promises an identical mouthfeel. Loryma offers application possibilities for the creation of deli and frozen food products, as well as a classic canned version. Manufacturers can adapt and flavour all concepts individually.

In order to achieve a realistic texture, fine Lory Tex® Snips and long, fibrous Lory Tex® Fibres are mixed together and then rehydrated with water. This blend can be further processed with colourings and flavourings to prepare various foodstuffs, such as meatballs, deli salads and toppings for frozen foods.

### Vegan tuna in a can

For an authentic eating experience, Loryma has also developed a recipe for fish-free tuna in a can. The concept combines Lory® Tex Snips and Lory® Tex Fibres with the wheat protein-based binder Lory® Bind and the modified wheat starch Lory® Starch Pearl. The result is a bound mass with loose texture that is then soaked in oil and packed in cans. The product is heated in an autoclave under high pressure, the same as for conventional tuna. This process allows for a long shelf life while the heat- and process-stable ingredients maintain optimal sensory properties.

The canned tuna alternative can be used in the same way as the original, for example, as a pizza or salad topping. The plant-based version contains around 19g of protein per 100g thanks to the extruded wheat protein, making it a valuable source of protein.

Norbert Klein, Head of Research & Development at Loryma, explains: "Fish stocks are becoming increasingly scarce due to overfishing of the oceans. Therefore, we offer a sustainable, authentic alternative using wheat, which we source mainly regionally in Germany. The sensory properties of our vegan version are every bit as good as the original. In addition, we are more than happy to support our customers in the development process and to customise the concept according to their own ideas."

For further information, please visit: <http://www.loryma.de/en/>



# new ingredients showcase

## GELITA introduces PeptENDURE®, the first collagen protein solution for enhanced endurance performance

**G**ELITA, the innovation leader in collagen peptides, is launching a new ingredient that elevates the body's ability to train harder and go further. PeptENDURE® is the market's first collagen protein that enhances the effects of endurance training long-term and increases performance as a result of adaptive changes in the muscles. It therefore offers a foundational, lasting change strategy, rather than a quick fix. The neutral-tasting powder can be used in a variety of ways, including supplement powders, RTD concepts, gels and bars. PeptENDURE® is first releasing in the United States and Europe.

PeptENDURE® are Bioactive Collagen Peptides (BCP®) that improve endurance performance by positively influencing metabolic processes. This is supported by two RCT studies (one in men, one in women) where study participants took either 15g PeptENDURE® or a placebo daily for 12 weeks alongside resistance and endurance training 3 times a week.

Results showed that the PeptENDURE® groups were able to increase the distance run in a one-hour time trial significantly compared to the placebo group: the men by an average of 662m, the women by 331m. Additionally, both PeptENDURE® groups had an increase in distance of more than 14% over the baseline run. Partici-



pants also showed improved energy metabolism and significant improvements in body composition, with reductions in fat mass among both men and women.

### Versatile to use

The benefits of these novel BCP® are relevant to participants in any sport that requires sustained performance – from endurance sports like distance running and triathlon to team events like football

and hockey and high-intensity gym-based activities like rowing. PeptENDURE® can be used in various applications, such as powder, beverages, gels and sport bars. It combines easily with other nutrients, has excellent bioavailability and its safety is well documented in human and animal studies. To achieve results, it should be consumed daily.

Martin Walter, GELITA Category Manager Healthy Aging & Sports Nutrition, says: "PeptENDURE® offers a whitespace opportunity for manufacturers to target a broader range of consumers with a wider spectrum of benefits than typically associated with protein and/or collagen. As a daily use product, it also promotes long-term brand loyalty."

PeptENDURE® is Generally Recognized as Safe (GRAS), certified kosher, non-GMO, and gluten-free. Further, it is accepted by the World Anti-Doping Agency (WADA). As a natural ingredient, it is free from E-numbers and suitable for clean label products.

GELITA is excited to be offering brands a new ingredient that will help them leverage a white space in the buoyant global sports nutrition market. Currently valued at around USD 40bn, the market is expected to grow at a CAGR of around 8 percent between 2023 and 2030.<sup>1</sup>

Reference:  
1 <https://www.vantage-marketresearch.com/industry-report/sports-nutrition-market-1532>  
www.GELITA.com

## Veal sausage, thuringer, liver loaf and obazda as plant-based alternatives

**R**oast chicken, pork knuckles, and the familiar wurst classics are getting some back-up. For Oktoberfest Planteneers is offering favorites like Bavarian veal sausage, Thuringer, and Nuremberg bratwurst as plant-based alternatives. An entirely plant-based liver loaf is also available. The best part is that manufacturers only need one system to make all of them. "Our fiild-Meat flexible stabilizing system is based on pea and fava bean protein, hydrocolloids, and starch," explains Dr. Pia Meinschmidt, Team Leader Product Management at Planteneers. "It lets manufacturers use conventional processing and filling lines to make a wide variety of products simply and easily."

Meinschmidt adds that the demand for plant-based alternatives to brats like Thuringer and Nuremberg is currently high due to the summer grilling season. To meet it, Planteneers has finished

formulations ready to go, likewise for liver loaf and veal sausage. "We can supply the systems either as all-in compounds including seasonings, flavorings, and colors, or as purely functional systems to which the customer then adds their own seasonings," says Dr. Meinschmidt.

The Bavarian veal sausage alternatives are interesting in this context. "Here, our intensive research and many application trials really paid off. The final products have the authentic flavor and texture in every way," reports Meinschmidt. In addition, like the other Oktoberfest alternatives they are very declaration-friendly, as the stabilizing system is free of phosphates, soy, and allergens.

Alongside the sausage alternatives, Planteneers offers a plant-based version of obazda cheese spread that can be ready at short notice, as Meinschmidt explains. "If caterers need to



add plant-based products to their lineup for Oktoberfest, it's no problem for us. We can supply the systems for sausage, liver loaf, and obazda alternatives very quickly."

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



# MartinBauer launches line of premium tea and botanical syrups



MartinBauer, the vanguard of tea and botanical ingredients for the food, beverage, and dietary supplement industries, has launched a line of premium tea and botanical syrups for use in beverage applications. Crafted with passion and precision, these syrups provide brilliant flavors, enhanced functionalities, and vibrant colors to a wide range of beverages, from lemonades and lattes to cocktails and beyond. They are free from artificial colors and flavors, a testament to MartinBauer's commitment to delivering high quality, all natural beverage solutions.

Gerardo Santiago, Vice President of Beverage Sales & Marketing at MartinBauer, emphasized the importance of offering consumers a choice. "Customization has transformed from an added luxury to the standard on menus. Our tea and botanical syrups not only deliver on authenticity and quality, but they also allow consumers the freedom to craft captivating creations through flavor pairings and functional options."

MartinBauer's newest collection consists of 6 syrups: Black Tea, Green Tea, Matcha, Butterfly Pea Flower, Hibiscus, and Energy Blend. Thoughtfully designed to be shelf-stable and concentrated, these syrups require just a single pump. This eliminates the need for intricate brewing processes, powder scooping, or the use of multiple ingredients.

Santiago commented on the syrups' practicality, recognizing the ever-present need for streamlined customization in the fast-paced Foodservice Industry. He noted, "Operators are perpetually seeking ways to offer modifica-



tions without compromising on efficiency, as every second counts in this industry. Our product line offers choice for the consumer and ease of use for the operator. No more laborious scooping of consumer favorite Matcha. No more brewing of Butterfly Pea Flower to unlock its vibrant color. We are thrilled to introduce these syrups and inspire new and exciting beverage experiences." [www.martin-bauer.com](http://www.martin-bauer.com)

## Cultured meat: The next level of alternative proteins



In June the US Department of Agriculture granted two companies final approval for the sale of cultured chicken meat. This makes the US the second country after Singapore in which meat from cell cultures can be sold. Companies on all five continents are researching cultured meat. According to market research, last year the focus was on beef and mutton, followed by poultry and pork. Fish and seafood are another area of interest.

Alternative proteins remain on a growth course. Alongside plant-based alternatives and proteins made through fermentation, the focus is increasingly on cultured meat, also known as in-vitro meat. The main drivers are the challenge of feeding a growing world population, climate and environmental protection, and animal welfare. "Both new vegan meat substitutes and cultured meat have disruptive potential," notes Katharina Schäfer, Team Lead Product Management at Hydrosol. For her dissertation, she is studying the opportunities for meat from cultured cells as well as the challenges this new protein generation must overcome. "Right now consumer acceptance is the biggest hurdle," says Schäfer. "Studies show differences in consumers' willingness to try cultured meat. While in Brazil and Switzerland about three-quarters of people would be willing to try meat from cell cultures, in Germany and India the number is not as high but still over half. In the US and Great Britain, on the other hand, it is only about 40%. What's more, willingness to try something can only be considered the lowest level of acceptance. Making a purchase is the next highest, and the highest is consuming something regularly and thus replacing a familiar product with it."

Essential factors that influence the acceptance of cultured meat include public awareness and knowledge, ethical and ecological concerns, and emotional and personal factors. Product characteristics likewise play a role, as does – not least – the availability of alternatives. That being said, cultured meat has numerous advantages, including from the nutritional point of view. "The composition of



cultured products can be adjusted flexibility," explains Katharina Schäfer. "For example, it might be possible to configure the production of cultured fat in such a way that it contains omega-3 fatty acids, for a healthier product," explains Schäfer.

Hydrosol helps companies with product development. "Our years of experience with conventional meat products enable us to offer various services," adds Schäfer. "The most important is improving the functional properties of products with cultured meat." Getting the texture, fibrousness, frying behaviour, and mouthfeel close to conventional meat products is not a problem. "For cost reasons, most companies will start by taking hybrid products to market, i.e. combinations of cultured and plant-based proteins."

Hydrosol has long experience in the use of plant proteins, which led to the founding of Planteneers three years ago. In the Group's Stern Technology Center, depending on the respective customer requirement and cultured product base, Hydrosol develops stabilizing and texturing systems for a wide variety of products. Another plus point is synergies with the other companies in the Stern-Wywiol Gruppe. For example, the nutritional profile of cultured meat products can be improved in collaboration with sister company SternVitamin.

### An exciting future

The cultured meat field has developed rapidly since the presentation of the first cell-cultured

burger ten years ago. Manufacturing costs have dropped substantially, and new industrial plants enable large-scale production. The first regulatory approvals are documenting the breakthrough of this new market segment, and step-by-step market launches of cultured meat products can be expected in the coming years. According to Katharina Schäfer, "there are initial small-scale sales in high-price restaurants in Singapore and the US. In addition to those markets, Switzerland and the United Kingdom could smooth the way for cultured meat in Europe. The first applications for approval were submitted to regulatory agencies there in recent weeks. Cultured meat will probably become a mass market product between 2028 and 2030."

Optimistic prognoses see cultured meat becoming a big player by 2040. Experts predict that with a sales share of 35%, it will almost catch up to conventional meat at 40%, while the remaining quarter comprises vegan meat alternatives. "Acceptance of this disruptive innovation will be critical to achieving this kind of market success," emphasizes Schäfer. "There are various factors that can favour future sales growth. The most important ones are government and regulatory measures, investment, and innovations that make scaled production of more varied products possible. Educating consumers to a greater degree is another important step. Cultured meat is probably not going to be the meat of the future, but it will definitely be a meat of the future."

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

Send your Product News to  
Terry Prior  
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# SIRIO launches new consumer health gummies

**S**IRIO Pharma (SIRIO) – the leading global nutraceuticals contract development and manufacturing organization (CDMO) – will further expand its offering in the consumer health market, building on last month's 'pharma targeted' softgel launch, with the introduction of a range of herbal gummies for trending consumer health categories.

The three new formulations are designed to help its partners, particularly pharma and OTC brands who want to grow in the active health space, accelerate into the fast-growing nutraceutical gummy industry. The products launched will support customers in trending consumer health categories, such as 'cough and cold', 'oral care' and 'Urinary Tract Infections' (UTI). All three gummies are vegan (pectin based), contain low-to-no sugar, and are ready to go to market immediately for product launch.

"We have come to CPHI to help our OTC customers – or any consumer health brand for that matter – launch complementary health gummies rapidly across Europe. Our ready-to-market gummies will enable them to address trending over-the-counter health areas in the most consumer-friendly dosage form. We all know gummies are the top growth dosage for nutraceuticals" commented Sara Lesina, General Manager Europe at Sirio.

The Sirio R&D team has taken much of the hard work away from brands by using its global network to track trends and design tailored formulations based on consumer desires.

Sirio's 'cough and cold' formulation is designed to bring a new offering to products in the conventional consumer throat lozenges category, but with

improved texture and taste characteristics. The unique centre-filled gummy combines citrus extract with eucalyptus, herbal ingredients that are well embedded into the consumer mind and are used to help relieve congestion, sinus pressure, and open airways. Additionally, it includes a liquid center with soothing acacia honey that- once the gummy is bitten-provides a unique sensorial experience.

A second gummy, this time focusing on oral care, will be introduced, both vegan and sugar-free, with natural berry flavour and combining a protective mix<sup>1</sup> of Vitamin D3, calcium, cranberry and elderberry extracts. These herbal ingredients not only contribute to strong teeth and gums, but they also have potential efficiency in preventing bacteria from adhering to the teeth (oral biofilm)<sup>2</sup>. Oral prevention is a new area for gummies and Sirio believes they will become a key consumer innovation beyond the traditional toothpaste, mouthwash and chewing gum formats.

A third sugar-free and vegan UTI gummy will be launched with a powerful herbal blend of hibiscus and cranberry. Cranberry has been shown in studies to be beneficial in helping regulate bacterial fauna and reduce the severity of outbreaks, while hibiscus may help prevent bacteria adhering to the linings of the urinary tract and bladder wall.<sup>3</sup>

"Consumer health gummies, thanks to far better experiential and organoleptic properties, enable brands to recruit new consumers and grow traditional categories - such as cough & cold-formulations that are ripe for format-disruption. But consistency of quality in delivery is a must if brands are to consider a line extension under their well-known format umbrella.



This means working with a CDMO that has decades of experience, quality certificates, raw materials traceability standards and crucially solid bioavailability studies. In fact, the skill and experience of the CDMO is now often the difference between 'just launching' and having a market-leading product. It's also why -at Sirio- we invest heavily in R&D and have done our due diligence before introducing innovations like centre-filled gummies," added Lesina.

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- 1 Formulated with Vitamin D3 (20 IU); Calcium (15 mg); elderberry extract (30 mg); and Cranberry extract (20 mg)
- 2 <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4033875/>
- 3 <https://www.lifeextension.com/magazine/2010/4/halt-the-vicious-cycle-of-urinary-tract-infections#:~:text=Like%20cranberry%2C%20extract%20of%20Hibiscus,may%20also%20possess%20bacteriocidal%20effects.>

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

# Nestlé launches tasty and nutritious alternatives to white fish

**A**s people are increasingly looking for fish alternatives, Nestlé has announced the launch of exciting new innovations - a range of plant-based alternatives to white fish.

The products which include alternatives to breaded fish fillets, nuggets, and fingers, stand out for their strong nutrition credentials, as well their great taste and texture that is close to white fish. They are also certified vegan.

Torsten Pohl, Global Head of R&D for Nestlé's food category, says: "These new fish alternatives are the result of our deep expertise in plant-based proteins and our strong commitment to continue delivering exciting innovations that meet consumers expectations. During consumer testing, our products received high praise for the great taste and texture that is close to white fish. They also come with strong nutritional credentials, making them competitive in the marketplace."

Leveraging its strong plant-based innovation expertise and global reach, Nestlé is launching three different types of fish alternatives across geographies and brands.

In Europe, under the Garden Gourmet brand, Nestlé will launch marine-style crispy fillet and

marine-style crispy nuggets. Made with wheat and pea protein, the great-tasting and nutritious products are high in protein and low in saturated fat. They also come with a Nutri-score A in countries that use the Nutri-score front-of-pack labelling system. They will launch both online and in store in



countries across Europe, including in Germany, Spain, Italy, Austria, Poland, the Czech Republic and Slovakia.

In Asia, Nestlé has already launched crispy fish-free fingers for both retail and out-of-home under the Harvest Gourmet brand in Malaysia and

Singapore. Made from soy and wheat, the fish finger alternatives are a source of protein and fiber and come in a crispy coating that is infused with herbs like oregano and rosemary.

Massimo Zuccheri, Global Category Lead for plant-based meals, Nestlé says: "People continue to seek out plant-based options for their favorite dishes. These new alternatives to fish are a great addition at mealtimes and can also be shared as an appetizer or small meal. They are tasty, nutritious and can also help to reduce overfishing and protect the biodiversity of our oceans."

The new launches complement Nestlé's Garden Gourmet Vuna, an alternative to tuna fish that has been available in Europe since 2020, as well as Nestlé's wide-ranging plant-based portfolio. Moreover, Nestlé is actively exploring cutting-edge technologies for animal-free products such as precision fermentation and cultured meat to further expand its offerings.

Nestlé remains committed to help people achieve balanced and sustainable diets. Recently the company announced a sales target for more nutritious foods, including efforts to innovate more products made with plant-based ingredients.

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



# BASF Aroma Ingredients expands its Isobionics® portfolio with new natural flavors

**I**sobionics®, a brand of BASF Aroma Ingredients, is launching two new natural products on the flavor market. Isobionics® Natural alpha-Bisabolene 98 and Isobionics® Natural (-)-alpha-Bisabolol 99 are the latest additions to our Isobionics® portfolio being proof points of our commitment to developing natural flavors driven by customer needs.

"We are delighted to introduce the two new products, which are natural flavors and produced with our cutting-edge fermentation technology. Therefore, they are independent from harvest conditions and pesticide free," says Toine Janssen, CEO of Isobionics®. "This is a major milestone for us and for the flavor industry, as it is the first time that two natural flavors are being launched and marketed together. Building on our cutting-edge fermentation technology we can constantly expand our natural flavor portfolio beyond our well-established citrus products to address further customer and market demands."

Breaking new ground beyond the citrus portfolio, Isobionics® is unlocking a world with new possibilities for food, beverage, and flavor enthusiasts and is proud to introduce the following two products:

- Isobionics® Natural (-)-alpha-Bisabolol is a known product, traditionally derived from natural sources and with a complex and captivating aroma pro-

file. Renowned for its delicate floral notes, it offers a subtle hint of chamomile, along with hints of sweet, woody undertones, resulting in a truly unique flavor experience. This groundbreaking innovation allows culinary professionals and beverage creators to boost other flavors such as Vanillin and Nootkatone to add a distinctive twist to their creations.

- Isobionics® Natural alpha-Bisabolene 98 is a breakthrough in the flavor industry as its purity improves better flavor development. Moreover, with its creamy milky flavor, it makes a major contribution to the expansion of the Isobionics® portfolio.

One of the most exciting aspects of the two new flavor ingredients is their great versatility. These flavor ingredients, produced at very high concentration via fermentation technology can be found not only in citrus essential oils, but also in several other natural oils, such as chamomile, ylang-ylang, black pepper, and basil oils. The very high quality of our natural flavors opens a world of possibilities for flavor enhancement in a variety of applications. Whether it is adding crispness to mild flavors, complexity to your beverages and confectionery formulations, or a savory punch to culinary creations, the new products offer limitless potential for creating memorable taste experiences. These natural products, use only renewable raw materials

and they are produced via fermentation technology, which makes them independent from harvest conditions and seasonality and free from agricultural residues, thus ensuring a constant quality in your products.

Steffen Götz, Vice President of Aroma Ingredients at BASF, highlights the dedication to customer-centric innovation: "Isobionics® new flavor solutions embody our ongoing commitment to providing sustainable and high-quality ingredients. These new product launches complement and expand the existing portfolio and answer the need for fermentation-based natural flavors. Dedication to providing natural and sustainable flavor solutions forms the core of our new product developments. Our biotech platform plays a significant role in developing future ingredients to deliver exceptional flavor profiles that are geared to consumer preferences."

The new natural flavors Isobionics® Natural alpha-Bisabolene 98 and Isobionics® Natural (-)-alpha-Bisabolol 99 have now been officially launched. Customers can already reach out to their designated sales contact and schedule an exclusive presentation of the new flavors to experience these extraordinary flavor innovations firsthand.

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

# Kemin Industries launches ButiShield™ encapsulated butyrate for humans to provide next-generation support for gut health and beyond

**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, has launched ButiShield™, an encapsulated form of calcium butyrate for humans that can help fortify overall gut health by supporting the strength and integrity of the intestinal wall.

Butyric acid is an extensively researched short-chain fatty acid (SCFA) that plays an important role in intestinal health, which also extends to overall health and well-being. Despite its benefits, products containing butyrate have many formulation and operational challenges due to its unpleasant odor and difficult handling.

Kemin is producing ButiShield using proprietary MicroPEARLS™ spray freezing technology to encapsulate the butyric acid, allowing for sustained and controlled release along the gastrointestinal tract—and with easier handling due to its low odor. The MicroPEARLS encapsulation technology neutralizes butyric acid's typically off-putting odor and helps to ensure its benefits are being delivered to the gut, where they're most beneficial for gastrointestinal tract health.

ButiShield is a low-odor, non-GMO, allergen-free, gluten-free, kosher, halal and vegetarian ingredient solution providing greater than 35% butyric acid.<sup>1</sup> Butyrate provides science-based health benefits for intestinal and digestive health and works by:

- Helping to shape a healthy microbiome and

gastrointestinal environment<sup>2-5</sup>

- Serving as a signaling molecule to regulate numerous metabolic processes at the cellular level<sup>6-9</sup>
- Serving as a primary energy source for healthy intestinal cells<sup>10-15</sup>
- Supporting intestinal barrier integrity<sup>10-15</sup>

"ButiShield is an exciting new offering for brands that are looking to reformulate or expand into the digestive health category," said Chris Sadewasser, Global Product Manager, Kemin Human Nutrition and Health. "Our latest innovation delivers well-known butyric acid in a novel way to support a healthy gut, improve the consumer experience and help formulators overcome manufacturing challenges. Kemin has mastered encapsulation technology with cutting-edge MicroPEARLS, originally developed to support gut health in animals. Now, we're elevating the proprietary application to reach a new level in human health, providing a unique solution to the evolving gut health market."

ButiShield is a microencapsulated calcium butyrate that provides sustained and controlled release of butyrate and masks the odor typically associated with butyric acid to provide a better experience for consumers. Butyrate has well-established benefits to help support the intestinal barrier and promote gut health.

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# food & safety analysis

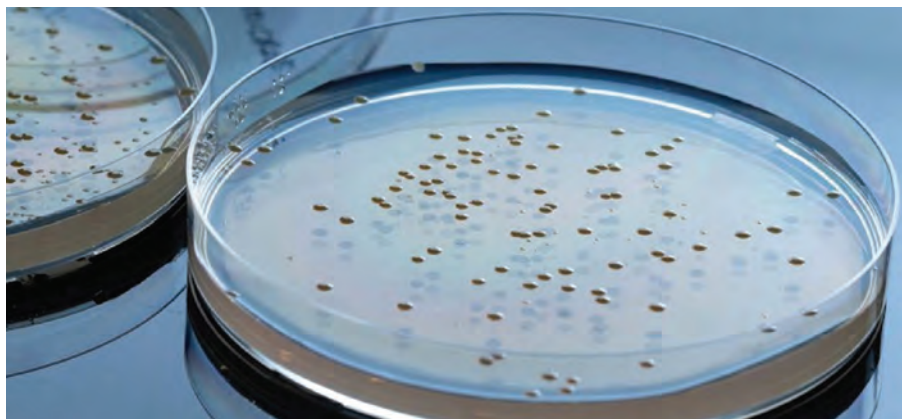
## One of the world's largest datasets on antimicrobial resistance is now digital

**D**ANMAP Explorer is a new digital tool from the DTU National Food Institute that makes it possible to explore data on antimicrobial resistance from animals and foods in Denmark from more than 25 years of surveillance. Data can be visualized in charts and graphs.

For more than 25 years, the DANMAP programme has collected one of the world's largest datasets on antibiotic resistance in bacteria from production animals and their meat in Denmark.

Previously, the figures have been published in an annual report, but now the DTU National Food Institute has launched a digital visualization tool which allows everyone to explore trends in antimicrobial resistance across historical data, with the opportunity to select different antibiotics, bacteria and animal species. The data can be downloaded and visualized in charts and graphs that can be exported in various formats.

"DANMAP Explorer is a new way of making



DANMAP data available, so that it is even more targeted to the knowledge needs of our stakeholders and partners. It can be used by everyone, but is probably particularly relevant for veterinari-

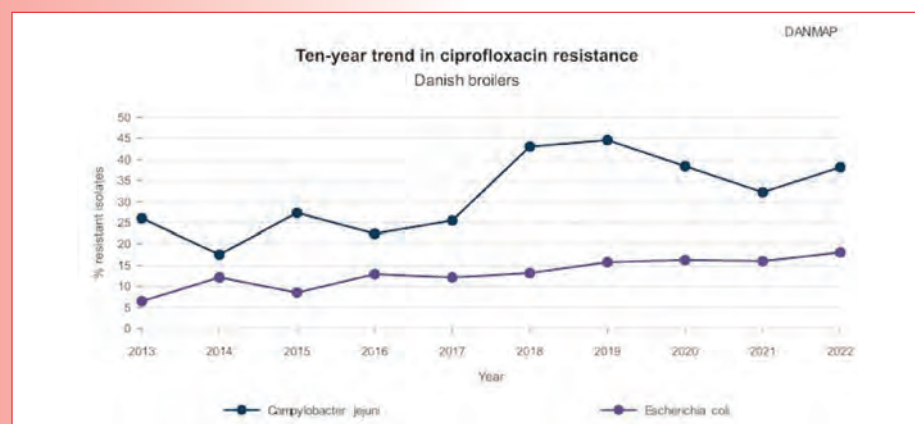
ans, farmers, agricultural organizations, the authorities and journalists in this field", says director of the DTU National Food Institute Christine Nellemann.

DANMAP Explorer is an important step in terms of communicating and visualizing data in a user-friendly way.

"It is now fast and easy to find the data you need and visualize them in a manageable way", says Ana Sofia Ribeiro Duarte from the DTU National Food Institute. She is one of the researchers behind DANMAP Explorer.

The researchers are working on further developing the tool, so that it will be updated with real-time data in the future.

"A monitoring system in real time will make it possible to follow the development more closely and thus allow to adapt efforts to the current challenges in order to prevent an increase in antibiotic resistance", says Ana Sofia Ribeiro Duarte.



## 2023, a much-awaited new service by Capsulae: opening of an analysis and characterization platform

**C**APSULAE, Research & Innovation center of INNOV'IA in La Rochelle, now offers its partner customers a high-performance and complete set of analytical and characterization tools.

These services are carried out independently, or as part of contract research and prototype-development services.

A strong argument for industry professionals who call on Capsulae researchers: the design of their innovative solutions and the resolution of their

ingredient formulation issues now follow a 100% integrated development process.

This additional service offers Capsulae and Innov'ia customers an optimized approach to meet cost and deadlines of their projects.

Services offered

- Particle size analysis: powder, suspension, emulsion (micrometric to nanometric) by laser diffraction
- Morphological analysis: optical, electron (ESEM), interferometric (surface state) microscopy

- Physical characterization of powders: Residual humidity, aw, bulk/packed density, absolute density, flowability
- Characterization of liquids: rheology, pH, conductivity, osmolality, zeta potential
- Chemical/thermal characterization of powders: FTIR, DSC, DVS, melting point
- Stability tests, release kinetics: HPLC-DAD, UV-Visible spectrophotometer, oil oxidation test, kinetic tests in a simulated in-vitro environment, stability tests in oven with controlled humidity



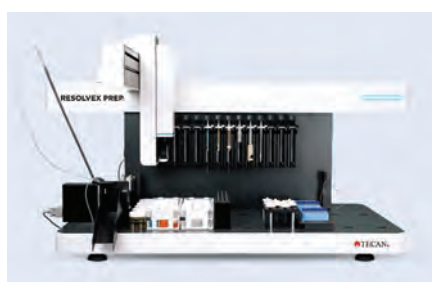
# Tecan launches Resolvex® Prep: a leap forward in automated sample prep for chromatography

**T**ecan has launched of Resolvex Prep, a mid-range, benchtop automation solution for chromatography sample prep. The instrument will enhance the efficiency, accuracy and reliability of chromatography sample prep, with implications for analytical chemistry, proteomics and applications in biomedical research.

Sample preparation for chromatography applications is a critical and technically demanding task. Even minor inconsistencies can have a significant impact on the quality of downstream assays. By automating the process, labs can save time, effort and costs, while enhancing the reliability of their results.

Resolvex Prep is purpose-built for chromatography workflows, and it is especially suitable for LC-MS\* sample prep. It can handle a range of batch sizes (from five to 100 samples), making it an ideal solution for medium-throughput labs. It is a cost-effective tool for increasing productivity and sample quality.

Resolvex Prep overcomes several challenges associated with chromatography sample prep by using direct displacement pipetting to avoid the hazards associated with volatile solvents and accommodating sealed sample tubes to prevent evaporation during processing. This automated system also helps to address the current shortage of trained laboratory staff while complying with chain of custody requirements.



A special feature of Resolvex Prep is its combination of high quality, precision-engineered hardware with intuitive, user-centric software, which can be mastered in under an hour. The robust yet flexible set-up maximizes efficiency while minimizing the potential for human error, leading to accurate and dependable results.

"We're very pleased to be launching this new instrument," said Luca Vallengia, Senior Vice President of Lab Automation at Tecan. "Bringing automation to the critical task of LC-MS sample prep will accelerate progress in a whole range of applications, from MS-based proteomics to biologics quality control, as well as food and environmental testing. It's another contribution Tecan is making to help scale healthcare innovation globally."

To highlight its versatility, Resolvex Prep would be a useful addition to analytical laboratories in

pharmaceutical, environmental and food and beverage applications, as well as forensics and quality control processes.

[www.tecan.com/resolvexprep](http://www.tecan.com/resolvexprep)

## New AccuPyc from Micromeritics exceeds benchmarks in speed, accuracy, and ease-of-use for true density measurement

**M**icromeritics Instrument Corp., a leader in characterization of porous and particulate materials, released the new AccuPyc gas pycnometer, featuring innovative technology that makes it the fastest, easiest, most accurate system for measurement of true density.

Solid density is important to characterize many solid materials. Porous, particulate, and irregularly-shaped solids are difficult to measure accurately by traditional methods, but gas pycnometry provides a reliable measurement of true density.

Every AccuPyc features new AccuTemp thermoelectric temperature control. Temperature stability within  $\pm 0.025^{\circ}\text{C}$  enhances measurement repeatability and reduces analysis time. Analyses can be performed in 30% less time than other pycnometers, making the AccuPyc the fastest gas pycnometer available. An analysis temperature range of  $4^{\circ}\text{C}$  to  $60^{\circ}\text{C}$  – the widest available – empower users to measure density at their process temperature, whether replicating refrigerated biopharmaceutical storage or elevated-temperature manufacturing.

A new hinged, self-aligning lid provides frustration-free operation and constant chamber volume, ensuring reproducibility. The new Breeze touchscreen interface provides intuitive instrument control and results review for users with any level of experience. The integrated MIC Net centralizes density data across the lab, including forward compatibility with existing AccuPyc systems. A wide analysis volume range from 100 cm<sup>3</sup> to 0.1 cm<sup>3</sup> permits large volumes that eliminate sampling error in heterogeneous materials through low volumes that conserve scarce materials. These features, plus new capabilities like PowderSafe mode and the stored Method Library make the AccuPyc the easiest pycnometer in the world to operate.

Advanced gas modeling allows operators to change analysis gas from helium to nitrogen, air, or other gases without additional calibrations and reduces errors associated with pressure variation. The system is the most accurate gas pycnometer available; its measurement accuracy of 0.02% is a 30% improvement over prior generations and is a product of the self-aligning lid, AccuTemp, and advanced gas modeling. Micromeritics Vice President of Science, Dr. Jeffrey Kenvin said, "This next generation AccuPyc incorporates technology available in research grade instruments; improving upon the speed, accuracy, and repeatability of previous generations. The new AccuPyc establishes a new standard for performance and ease of use."

[www.micromeritics.com/accupyc/](http://www.micromeritics.com/accupyc/)

## Foodchain ID launches new global standard for regenerative agriculture certification

**F**oodChain ID, one of the world's leading food safety, sustainability, and product certification providers, announced a new global standard for the certification of regenerative agricultural practices to support farmers and their customers in the journey towards a more sustainable supply chain.

FoodChain ID's Regenerative Agriculture Standard is an independent, global, business-to-business certification standard for any type of farming, whether conventional or organic, that incorporates environmental elements and regenerative farming requirements for soil health and land management.

Created by Cosmocert S.A, a FoodChain ID company, in collaboration with agronomists, farmers, academia, and industry input under principles of ISO 17065, the new standard applies to food, fiber, or other agriculture products. It offers certification levels from "under conversion" through to "full expert" regenerative principles, allowing the farmers to progress in their journey towards more regenerative practices.

Regenerative agriculture aims to ensure healthy soils, increase biodiversity, restore ecosystem balance and mitigate the acceleration of climate change while enabling farmers to create a sustainable business. Those practicing regenerative agriculture seek to minimize mechanical operations and the use of inputs such as pesticides that can cause damage to soil, organic matter, water

systems and living organisms.

"Our new Regenerative Agriculture Standard is the latest milestone in FoodChain ID's long history of supporting a transparent and sustainable food supply chain," comments Dr. Chetan Parmar, FoodChain ID's SVP of Technical Services for Europe and Asia. "As well as providing value chain transparency with chain of custody principles and audit flexibility with other standards or certification schemes, the standard's tiered nature offers farmers recognition as they progress towards full regenerative practices."

"As the food industry explores new ways to build resilience against climate change, regenerative agriculture will play a vital role in creating a more sustainable supply chain and limiting the environmental impact of farming," adds Kostas Diamantopoulos, CEO of Cosmocert. "This new global certification standard will help prepare farmers for inbound initiatives as the food system moves towards decarbonization – for example, the carbon credit exchange market – while scaling up regenerative farming methods for the good of both people and planet."

FoodChain ID's Regenerative Agriculture Standard is applicable to individual producers or groups of producers within any agricultural system, as well as processing and commercial companies for chain of custody and traceability.

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

## Not just for vegans: Plant protein has broken into the mainstream, new research shows

**PLANT PROTEIN POWDER** is no longer exclusive to vegans and athletes, with significant numbers of mainstream consumers now shopping the category, according to new research commissioned by MycoTechnology, Inc., the mushroom mycelial fermentation specialist.

The survey of 725 plant protein powder users, carried out by Brightfield Group in Q1 2023, found that just 17% of them identified as vegan. Furthermore, 38% of the respondents in the survey who declared that they purchase only plant-based protein powders said they mixed them with dairy milk, indicating that they buy such products for reasons other than dietary lifestyle choices.

Meanwhile, fewer than half of the respondents in the survey (46%) identified as athletes, even though as many as 77% of them said they exercised at least three times a week. The vast majority (93%) stated that they exercise to support their mental health.

When asked to describe themselves, 34% of respondents were identified as 'early adopter' consumers. Another 31% were 'early majority' shoppers, indicating a shift for plant protein powder into a more mainstream demographic.

When it comes to product quality, plant-based protein powder consumers are in broad agreement. Nearly all of them (92%) said they would find a

product more appealing if it offered higher quality protein, with 91% attracted by a protein that is more complete. Beyond nutritional factors, 91% of respondents said they favor products that promise a better taste.

MycoTechnology's Marketing Director, Jonas Feliciano, commented: "These findings demonstrate that plant protein is smashing apart outdated stereotypes and is now earning strong support among mainstream consumers. The fact that so many blend their plant protein powder with milk is a strong sign that non-vegans consider plant protein to be a conventional product and a key part of a healthy diet. Most notably, all but a few of the respondents to our survey said that they considered protein quality and flavor to be of the utmost importance. The successful plant proteins of the future will be those which are able to tap into the needs and preferences of these highly discerning consumers."

Bethany Gomez, Managing Director at Brightfield Group, added: "Plant-based protein users are a young, affluent group that prefers cleaner eating—no sugar added, all natural, preservative free—and they're willing to pay for high quality products with that strong health profile. This group is also more likely to be using functional ingredients, like mushrooms and adaptogens, so we know

they're open to new and alternative ways to get the types of sustenance and nutrition they're looking for. Brands that strive to offer high quality products, using cutting edge ingredients, will find a group of users ready and willing to dig in."

A trailblazer in the development of next-generation plant proteins, MycoTechnology offers a line of plant proteins including FermentIQ™ PTP – a pea and rice protein blend fermented by mushroom mycelia to deliver superior performance and nutrition. Providing all essential amino acids, it has a PDCAAS (Protein Digestibility Corrected Amino Acid Score) of 1.0 for ages 3 and above. Its unique fermentation process also enhances digestibility, enabling 99.9% of the protein consumed to be easily digested. As a result, FermentIQ™ PTP offers a nutritional value competitive with animal and soy proteins.

MycoTechnology's proprietary process also deodorizes and de-flavours the plant proteins, offering better tasting, more neutral solutions with superior functionality in a range of applications. For those looking to take the taste of their products to the next level, MycoTechnology also offers ClearIQ™ – a natural, clean-label bitter blocker and flavor clarifier.

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

## Kemin granted European Patent for use of Neumentix™ in improving the growth of new Neurons in the human brain

**KEIN INDUSTRIES**, a global ingredient manufacturer that strives to sustainably transform the quality of life every day for 80 percent of the world with its products and services, has been granted a patent by the European Patent Office for its method to promote the growth of new neural cells using Neumentix™, a water-soluble spearmint extract that supports working memory. The patent (number EP 3 538 085 B1) was granted on July 12, 2023, and validated in Spain, France, Germany, Italy, the Netherlands, and the United Kingdom. This is the fourth patent that Kemin Human Nutrition and Health has filed and been granted for its proprietary spearmint extract.<sup>1</sup>

Neumentix, a natural nootropic rich in polyphenols, was developed for neural health and contains more than 50 phenolic compounds, including rosmarinic, salvianolic and lithospermic acids. Neumentix targets the hippocampus—one of the few areas of the adult human brain that can produce new nerve cells throughout one's lifespan. The rate of neurogenesis in the hippocampus has been found to decrease with age, stress, sleep deprivation and other factors affecting cognitive performance. Research shows that the phenolic complex in Neumentix promotes new neuron growth in the hippocampus, which can improve the ability to learn, manage information and react.<sup>2-5</sup>

"This patent confirms the novelty of research

findings on Neumentix's ability to grow new neurons in the brain," Brenda Fonseca, Global Technical Services Lead, Kemin Human Nutrition and Health, and inventor listed on the patent. "Our research has indicated that Neumentix, sourced from patented plants and characterized by its phenolic complex, works to nourish the neurons in the brain and may increase new neural growth in specific areas of the brain, providing an important source of neuronutrition to fuel brain performance in healthy adults."

In addition to working memory, Neumentix provides other cognitive benefits, such as focus, sustained attention and enhanced physical performance, and can be formulated into a variety of applications. Neumentix acts on adults' neural tissues in six key ways:<sup>6-11</sup>

- Decreasing oxidative stress
- Reducing inflammatory markers
- Increasing neurotrophin levels
- Protecting neuronal cells
- Elevating neurotransmitter levels
- Promoting new neuronal growth

"Delivering high-quality, unique, patented and science-backed ingredients is extremely important to Kemin, because our customers provide supplements, foods and beverages that help improve the quality of life for those around the world," added Fonseca. "Backed by over 19 peer-reviewed scientific



publications covering clinical and preclinical research, as well as spearmint plant features, Neumentix is a great choice for manufacturers looking to formulate with safe, sustainable and scientifically backed brain health ingredients to help promote new neuronal growth."

### References:

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# New study shows chicory root fibres selectively increase Bifidobacteria independent of food application and matrix

**A RECENTLY PUBLISHED** study conducted by researchers from The Department of Food and Nutritional Sciences University of Reading (UK), in collaboration with the BENEIO-Institute, demonstrates that prebiotic chicory root fibres support the selective growth of Bifidobacteria in the human gut, no matter which food application and food matrix they are used in. This is good news for producers wanting to bring the bifidogenic effect and gut health benefits of prebiotic chicory root fibre to a wide variety of consumer food products.

Encouraging the growth of beneficial bacteria such as Bifidobacteria is important as it supports human health via positive effects on the gut environment. It also creates less favourable living conditions for potential pathogen bacteria and has benefits beyond digestive health for overall well-being. The bioavailability and therefore, efficacy, of some ingredients and nutrients has been found to be impacted by the food matrix they are in. As a result, certain benefits cannot be credibly claimed by producers, as the ingredient's function may differ depending on the application or matrix it is used in. However, the study shows that when incorporating prebiotic chicory root fibre into food application, this is not the case. This is a key factor for producers to consider given that three in four consumers who buy prebiotics state product efficacy as a key purchasing factor (76%).

Though several studies of inulin-type fructans in various food applications and matrices already exist, this is the first time that the effects of chicory root fibre in different food applications have been included within one study design, enabling their direct comparison. This study was designed as a

prospective, parallel-group, randomised trial. The participants were split into four groups - with 24 participants in each. The foods reflected a wide range of matrices, such as baked, semi-solid and liquid, and were consumed as part of the populations' habitual diet. While the first group received pure inulin (for comparison purposes), the other participants were given inulin-enriched foods in the format of shortbread, milk chocolate, or a rice drink, depending on which group they belonged to. All groups consumed a total of 10g of chicory root fibre (BENEIO's Orafit® Inulin) per day (5g in the morning and 5g in the evening), and stool samples were taken at the beginning and at the end of the ten day intervention.

At the end of the intervention period, the four groups' results were analysed and in all cases, the bacterial enumeration demonstrated a significant increase in Bifidobacteria on day ten. In fact, an average 92% increase of Bifidobacteria was seen across all four groups compared to the baseline, and no significant differences were detected between any of the intervention groups on day ten. Irrespective of the food application and matrix, the prebiotic chicory root fibres were shown to support the selective growth of Bifidobacteria and the results were consistent across two different study methods used within the research. Thanks to these findings, product developers can have even more science-based trust in the functional benefits of BENEIO's chicory root fibres.

Anke Sentko, Vice President Regulatory Affairs & Nutrition Communication at BENEIO comments: "Thanks to this study, product developers can 'tick off' one key question from their check list: does the

functional ingredient deliver the desired benefit when used in the final application? And the answer for chicory root fibre enrichment clearly is 'yes'. It has now been scientifically proven that the intended Bifidobacteria growth is independent from the food matrix that is used. These findings add to the large body of studies about the beneficial effects of chicory root fibres that already exist and are based on more than 25 years of scientific research on the proven prebiotics inulin and oligofructose."

BENEIO's chicory root fibres, Orafit® Inulin and Oligofructose, are the only proven plant-based prebiotics, comply with the ISAPP (International Scientific Association for Probiotics and Prebiotics) definition of prebiotics and are backed up by the highest level of scientific evidence established in more than 25 years of scientific research. The prebiotic effect of chicory root fibres has been shown to support a number of health aspects in numerous human intervention studies, including improved bowel function, the inner defense system, weight and blood sugar management.

## References:

Jackson PPJ, Wijeyesekera A, Theis S, Van Harsselaar J, Rastall RA (2023) Effects of food matrix on the prebiotic efficacy of inulin-type fructans: a randomised trial. *Beneficial microbes*. Published 29 August 2023: <https://brill.com/view/journals/bm/aop/article-10.1163-18762891-20220120/article-10.1163-18762891-20220120.xml>

FMCG Gurus, Prebiotics survey, Q2 2022. A total of 10,000 consumers were surveyed across 10 countries (1,000 per country), here: filtered by consumers who purchase prebiotics, N = 1,260.

Gibson GR, Hutkins R, Sanders ME et al. (2017) Expert consensus document: The International Scientific Association for Probiotics and Prebiotics (ISAPP) consensus statement on the definition and scope of prebiotics. *Nat Rev Gastroenterol Hepatol* 14(8): 491–502.

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

## Pomella®: New Study investigates gut derived metabolites urolithins

**A NEW PHARMACOKINETICS** study was conducted at the University of Mississippi. Researchers investigated the metabolism of Pomella® extract with emphasis on the major polyphenol, punicalagin, and the gut derived metabolites urolithin A and B.<sup>1</sup>

The study showed that punicalagin rapidly metabolised to ellagic acid which then rapidly absorbed and conjugated after oral administration. The conjugated ellagic acid exposure was approximately 5-8x higher than unconjugated EA for both dose groups, while urolithin A appeared in the bloodstream at a delayed rate, starting approximately 8 hours after dosing. The results support the gut microbiota-mediated metabolism of ellagitannins, specifically punicalagins to ellagic acids and then to urolithins.

In the study, subjects were given 250mg or 1000mg of Pomella® standardised to contain not less than 30% punicalagins, and not less than 50%

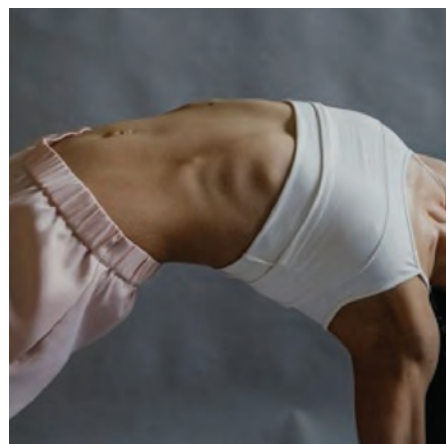
polyphenols. Plasma samples were collected over a 48hr period.

Given the recent interest in specific gut microbiota and their roles in metabolising ellagitannins to UA and their association to positive health, this study supports the polyphenol capability in Pomella®.

Pomella® Pomegranate Extract is a scientifically researched, clean-label, plant-based ingredient offering potent antioxidant properties that support a wide variety of applications, including gut health, beauty from within, cardiovascular, oral health and much more.

## Reference:

1 Wang et al-2023- Journal of Pharmaceutical and Biomedical Analysis: Development of a liquid chromatography-tandem mass spectrometry (LC-MS/MS) method for characterizing pomegranate extract pharmacokinetics in humans. DOI: 10.1016/j.jchromb.2020.122278.



[www.lehvoss-nutrition.com](http://www.lehvoss-nutrition.com)

## New MenaQ7® K2 cardio study in kidney patients published

**GNOSIS BY LESAFFRE** is eager to share that Kidney International Reports has published a new study using MenaQ7® Vitamin K2 as MK-7 that explored the relationship between vitamin K2 menaquinone-7 (MK-7) supplementation on coronary artery calcification progression in 138 kidney dialysis patients. The study concluded that 360 mcg MK-7 thrice weekly for 18 months was not enough to provide statistically significant improvement in slowing vascular calcification progression in this population.

It has been established that individuals on hemodialysis have impaired function of matrix GLA protein (MGP), a powerful vitamin K-dependent inhibitor of vascular calcification. MK-7 activates MGP, and increased activated MGP helps protect arteries from calcification. The researchers hypothesized that oral menaquinone-7 (MK-7) would enhance the carboxylation of MGP, reduce levels of under-carboxylated (inactive) MGP, and therefore reduce coronary artery calcification (CAC) in the hemodialysis (HD) population.

The kidney population participating in the Treatment to Reduce Vascular Calcification in Hemodialysis Patients Using Vitamin K (TReVasc-HDK) study<sup>1</sup>, a single-center, prospective, open-label interventional clinical trial on HD patients at the National University Hospital, Singapore, represented a multiethnic Asian population with an extremely low extrahepatic K status represented by high dp-ucMGP, inactive form of MGP. They were randomized to vitamin K2 supplementation or standard care between July 2016 and February 2019.

After 18 months, the researchers found that there was no statistical difference between the supplementation group and placebo group in CAC scores, although K2 supplementation was found to reduce undercarboxylated MGP. The researchers concluded, "TReVasc-HDK does not suggest a

beneficial effect of oral vitamin K2 supplementation in attenuating VC or arterial stiffness at a dose of 360 µg 3x/week despite a significant reduction in dp-ucMGP. Our findings are consistent with three prior smaller RCTs on vitamin K supplementation which reported progression of VC in HD patients."

They added that there may be a possibility that K2 supplementation at higher doses or provided earlier in the development of vascular calcification may provide a quantifiable benefit in this population. Further, many other factors might contribute to the initiation and progression of VC via non-vitamin K-dependent mechanisms.

"This study found that vitamin K2 supplementation did not attenuate vascular calcification or arterial stiffness at a dose of 360 mcg three times per week, which strongly suggests that kidney patients on dialysis would need higher doses to achieve protection benefit against arterial calcification," says Sophie Legrain-Raspaud, Gnosis Research & Application Director.

While the dose of 360mcg of vitamin K2 as MK7 three times a week was able to produce a 20% reduction in dpucMGP in this trial, the dose was too low to optimally improve extrahepatic K status.

Two previous studies of MenaQ7® in kidney patients yielded some promising data. Kurnatowska et al. published the first clinical trial in kidney patients in 2015, which yielded positive results with just 90 mcg daily combined with 10 mcg of vitamin D3.<sup>2</sup> Mansour et al. showed an improvement in arterial elasticity in kidney transplant patients with 360 mcg/daily in 2017.<sup>3</sup> These outcomes were repeated by others in 2022.<sup>4</sup>

"There is a clear need for the optimization of vitamin K status in kidney patients, and this study is critically important in helping to understand what doses will ultimately work to provide protective cardiovascular benefits to individuals on hemodialysis," adds Legrain-Raspaud. "In the progress of

researching an ingredient, some studies will not find a conclusive benefit due to any number of reasons. This knowledge gained helps guide future trials that could yield the hypothesized results, particularly once a beneficial dose range is pinpointed."

Other K2 research has yielded many important insights since this study was initiated in 2016. To that end, other MenaQ7® trials have considered higher dosages, such as the VIKIPEDIA trial in Greece<sup>5</sup>, which will study the effects using the highest dosage to date: 1 mg MK-7 daily. Further, outside of the optimization of extrahepatic K status, VIKIPEDIA will optimize vitamin D, vitamin K2, and magnesium levels – three nutrients known to support vascular health.

"While the present study findings might be characterized as 'unsuccessful', it should not hinder enthusiasm to proceed forward as this is integral to a sound exploratory scientific method," adds Marc Philouze, Gnosis by Lesaffre General Manager. "Rather, the insights gained help design future trials to answer clinically highly relevant questions. The pursuit of scientific knowledge and discovery is not always so straightforward."

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- 5 <https://clinicaltrials.gov/ct2/show/NCT04900610?term=peritoneal&cond=vitamin+k&draw=2&rank=1>

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

## The Mediterranean diet, olive oil and gut microbiota may benefit the prevention of some obesity-related cancers

**OLIVE OIL IS ONE** of the most relevant elements of the Mediterranean diet. Moreover, both the Mediterranean diet and olive oil are rich in compounds that are beneficial to health and there is growing evidence that they could improve health factors related to obesity. However, the relationship between the Mediterranean diet, olive oil, obesity-related cancers and the role of the microbiota has not been clearly studied.

A new study published in the scientific journal 'Seminars in Cancer Biology' by a team of researchers from the Nutrition and Cancer Unit of the Catalan Institute of Oncology and IDIBELL, in collaboration with the Food and Health team of the Basque scientific and technological centre AZTI, offers a relevant review and update of evidence showing that eating habits play a key role in cancer prevention, and the relationship between obesity and the risk of having different types of cancer such as endometrial, oesophageal, renal, colorectal,

pancreatic and liver cancer, among others.

### The Mediterranean diet and olive oil: tools for preventing cancer

This study has examined the epidemiological evidence linking the Mediterranean diet and olive oil to obesity-related cancers, as well as the biological and gut microbiota mechanisms that may explain this connection. The results suggest that adherence to these dietary habits has a positive impact on the prevention of aerodigestive, gastrointestinal, and gynaecological cancers.

In fact, it has been observed that in some cancers, especially gastrointestinal cancers, an imbalance in the intestinal microbiota is present, which leads to inflammation and an altered production of metabolites that can contribute to an acceleration of the carcinogenesis process. For Marta Farràs, researcher at the Catalan Institute of Oncology and the Bellvitge Biomedical Research

Institute and lead author of the study, "both in vitro and clinical studies show that the Mediterranean diet and olive oil can modify the composition of the intestinal microbiota and its mechanisms and, therefore, modulation of this through diet could play an important role in the prevention and treatment of obesity-related cancers". The researcher Ainara Cano, co-author of the review, gives her view on the applications that are already being implemented at AZTI "the modulation of the microbiota through probiotics and prebiotics (foods that are beneficial for our microbiota) is already a reality that plays a role in the prevention and treatment of obesity-related cancers and other pathologies".

The full article is available through this link:

<https://www.sciencedirect.com/science/article/pii/S1044579X23001116?via%3Dihub>

[www.azti.es](http://www.azti.es)



# Probi® Sensia - New probiotic concept within cognitive health

**COGNITIVE FUNCTION, MOOD,** Sleep and Stress – keywords that are addressed in the new clinically supported probiotic solution, Probi® Sensia was launched by Probi® at SupplySide West in October 2023.

Mental health supplements have emerged as the fastest-growing benefit within the global dietary supplements market. Over five years (2017-2021), we've seen a 30% growth in probiotic launches positioned within Brain-Mood Health<sup>1</sup>, showing how psychobiotics is a fast-rising niche<sup>2</sup>.

Within the scientific community, the connection between gut and neurocognitive functions has been a major research topic during the last couple of years. Stress, anxiety and depression-like symptoms were the first to be addressed, but today there are more and more research being carried out in healthy individuals, as the focus has shifted towards finding solutions to the "everyday" issues that many of us struggle with – poor sleep quality, moody-behavior and issues with cognitive functions such as memory and focus.

Probi® Sensia is a new probiotic concept by Probi® based on clinical and scientific data that

supports improved cognition by boosting learning and working memory as well as improved mood and sleep. These cognitive functions are important in enhancing people's overall mental health. The new probiotic solution will be available to meet diverse consumer needs, supported by global health-related claims and customizable with local support. Furthermore, it can be combined with selected vitamins, minerals or other ingredients, and is ideal for dietary supplement formats like capsules, stick packs and functional foods such as beverages and powder products.

Probi® Sensia is based on the well-documented probiotic strain *Lactiplantibacillus plantarum* HEAL9 (HEAL9™). Three clinical studies and totally five scientific articles have repeatedly showed that intake of HEAL9™ affects the so-called gut-brain axis in a positive way. The clinical endpoints include decreased cortisol and stress-induced inflammation in chronically stressed but otherwise healthy students, as well as decreased symptoms of depression and anxiety. In the latest publication healthy individuals with moderate stress were evaluated. Improved memory and cognitive

function, improved sleep quality and decreased daytime dysfunction, as well as improved mood was found after intake of the HEAL9™ strain.

"We are proud to launch our new concept Probi® Sensia, based on a strong clinically proven effect, which optimizes and maintains important cognitive functions such as memory as well as mood, sleep and stress. With Probi® Sensia we now offer a wide-ranging solution to help our customers to meet diverse consumer needs from a health-related perspective with a broad usage from dietary supplements to functional foods and beverages.

The latest study "Intake of *Lactiplantibacillus plantarum* HEAL9 Improves Cognition in Moderately Stressed Subjects: A Randomized Controlled Study" was recently published in *Nutrients* (2023) 15 (15), 3466, and can be found here: [LINK](#)

#### References:

1 Innova Market Insight 2022

2 Further insights: "The gut-brain axis: Psychobiotic opportunity in 25 countries" (March 2022)

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

## New study on seniors shows the benefits of products rich in MFGM and protein

**LEADING FINNISH DAIRY** company Valio collaborated with top nutritional scientists in a new study about the effects of MFGM and milk protein on the physical functioning of the elderly. The results show significant improvement in balance and physical performance even without an exercise intervention. This study is among the first conducted in Europe on the benefits of partially hydrolysed, high-protein milk products rich in MFGM when introduced to a regular everyday diet instead of through dietary supplements.

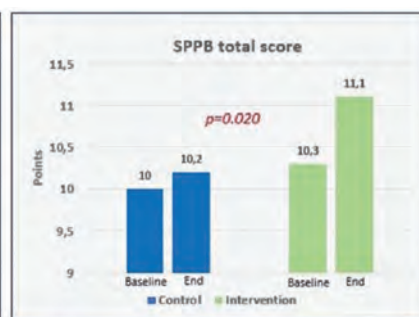
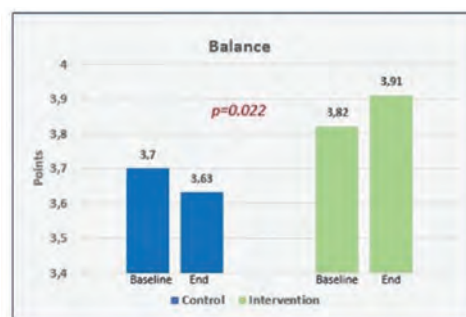
### Separating the benefits of nutrition and exercise

"We wanted to separate the effects of nutrition, specifically MFGM, from exercise, which has been a component in most, if not all of the previous studies conducted in this particular field," says Anu Turpeinen, PhD, Nutrition Research Manager at Valio.

The study followed 101 Finnish women, aged 70 or over, for 12 weeks. The group was divided into an intervention group (n=51) and a control group (n=50). The studied women were all able to move independently but showed some signs of sarcopenia or slight deficits in physical functioning in the baseline tests.

The intervention group was given a powder or a ready-to-drink product that contained 23g hydrolysed protein and 3g MFGM, for daily consumption. The products were made using Valio buttermilk concentrate. To rule out the effect of exercise, both groups were given the same minimal exercise guidance.

Physical functioning was then tested for both



Jyväkorpi et al., 2023

groups by measuring hand grip strength and SPPB (short physical performance battery), which includes testing balance, walking speed, and the ability to rise from a chair unaided. Both groups were tested twice, at baseline and the end of the study.

Results indicate that combining MFGM and milk protein may improve physical performance

The results showed significant improvements in physical functioning among the participants, especially in the balance and the SPPB total scores.

Another notable difference was that the protein intake increased significantly in the intervention group from 0.9 to 1.1 g/kg body weight. There were no significant changes in the energy intake or the participants' weight during the study.

The participants thought that the ready-to-drink protein shake was delicious and easy to use and that it may have helped them feel less hungry and have fewer sweet cravings.

"Next, we are planning a second study that focuses on the possible cognitive benefits on elderly individuals with issues in cognitive functioning," Turpeinen concludes.

Why hydrolysed protein?

- Absorbed more efficiently than intact protein in elderly
- Causes fewer gastrointestinal problems in sensitive individuals
- What is the milk fat globule membrane (MFGM)?
- A unique component of cow's milk fat, not found in vegetable oils
- Contains complex lipids, such as phospholipids, necessary for the brain and nervous system and stimulate neuromuscular function
- Shown to have benefits on physical function in earlier studies with seniors

For more information on the NutriSen study, please visit the Valio website.

Further information and interview requests  
[Valio.Mediadesk@valio.fi](mailto:Valio.Mediadesk@valio.fi)

## Good night, sleep tight with affron® natural melatonin booster

**RESULTS OF A NEW STUDY** demonstrate that the standardized affron® saffron extract boosts the body's endogenous production of melatonin.

Melatonin—nicknamed the “sleep hormone”—is naturally produced in the body from the dietary amino acid tryptophan. Among other roles, melatonin helps synchronize the sleep-wake cycle and other circadian rhythms and helps adjust for seasonal changes in sleep timing. It has become one of the most commonly used treatment for sleep disorders.

Pharmactive Biotech Products, SLU, owners, and manufacturer of affron brand natural saffron ingredient, prized for, for its action in maintaining positive mood, induce relaxation, improve occasional stress, and mitigating psychological symptoms of menopause, announces results of a new in vivo study that shows that affron® can help boost the body's endogenous production of melatonin.

“Results of a previous clinical study showed that Pharmactive's potent saffron extract significantly improves sleep quality, helps to support mood balance after awakenings, reduce sleep-onset latency, ease difficulties in falling asleep, and allow for more continuous and less-interrupted slumber,” says Alberto Espinel, Open Innovation & IP Director. “The new study<sup>1</sup> clarifies the mechanism for affron's positive effects on sleep, providing solid scientific support to the previous studies.”

The placebo-controlled animal study was designed to assess of the effects of affron on melatonin synthesis and the Kynurenine Pathway. Melatonin is a hormone that is synthesized in the pineal gland from tryptophan (only a very minor part of the available tryptophan is used for melatonin synthesis), which is first converted into serotonin—the so-called “feel-good” hormone—and finally into melatonin.

Tryptophan also can follow another pathway and be enzymatically transformed into several molecules on the kynurenine pathway. This unbalanced pathway is negatively involved in

several biological processes. The results of the new study indicate that affron® inhibits the enzymes that allow this conversion from tryptophan to kynurenine metabolites, demonstrating the antioxidant and anti-inflammatory properties of affron, while promoting the synthesis of enzymes responsible for transforming tryptophan into melatonin, resulting in a significative improvement of plasma melatonin levels.

In summary, the study shows unequivocally that affron has an effect on sleep quality because it stimulates endogenous melatonin production. Furthermore, it was observed throughout this process that the consumption of affron is safe and has no toxic effects on the body.

Lack of sleep has long been recognized by the US National Institutes of Health as a global crisis, a situation only exacerbated by the recent pandemic. A number of surveys suggest some two thirds of people report getting insufficient sleep. Insufficient Sleep is defined by The Sleep Foundation as “curtailed sleep that persists for three months or longer,” as well as “poor sleep that occurs because of sleep fragmentation or other disruptions.”

Long-term sleep deficit (defined as fewer than seven hours per night)—which now affects around a third of adults—has been linked to a host of physical, cognitive, and emotional diseases and dysfunctions that range from increased risks of obesity, high blood pressure, diabetes to heightened levels of occasional stress and low mood.

Twice as many persons are taking daily sleep aids as there were in 2010, according to the Centers for Disease Control, and in the past five years, melatonin has been increasingly favored by consumers as an aid to better slumber. Used as directed, melatonin is a safe and effective, natural supplement that can help users fall asleep more quickly and to get longer, and better quality, sleep. However, a study published last spring in the *Journal of the American Medical Association* revealed that nearly nine in 10 melatonin supplements were mislabelled, having inaccurately

presented amounts of the hormone and some having none whatsoever.

The primary conclusion of the new in vivo study is that, with affron, the body can more efficiently generate its own melatonin without the need for melatonin supplements.

This is positive because it benefits population groups that do not metabolize exogen melatonin properly, such the elderly. Yet affron also is safe and effective for use by teenagers, making it a perfect ally for treating occasional sleeplessness in this often sleep-deprived age group. Moreover, no negative effects such as headaches, dizziness, drowsiness, etc. were observed.

“Better sleep is as much about good sleep as it is about duration of sleep,” explains Espinel. “Supported by previous studies on affron's ability to act as a natural sleeping agent, this latest study demonstrates that it is actively involved in aiding the body's natural capacity to fall asleep and stay asleep.”

Pharmactive works with selected saffron farmers, supporting local and sustainable agriculture to ensure that the stigmas of *Crocus sativus* L. used are always of the highest quality. Their craft has been part of their cultural heritage for centuries and consists of traditional methods that bring unique characteristics to the final product. The fresh stigmas are dried on-site, immediately after harvesting, to ensure maximum stability of the active ingredients.

Affron® is naturally extracted from saffron via a proprietary extraction process AFF®ON Cool-Tech, using zero chemicals, with less energy and less industrial processing, using only water. Furthermore, thanks to the exhaustive quality controls carried out, it is possible to certify that the saffron used for the production of affron is 100% *Crocus sativus* L. It is water-soluble and versatile across multiple applications at a recommended daily amount of 28mg for improving mood and occasional stress, and 14mg one hour before bedtime to improve sleep quality. [www.pharmactive.eu](http://www.pharmactive.eu)

## Biozyme: A fermented vegetable postbiotic effective for constipation and skin health

**THE FERMENTED VEGETABLE** extract Biozyme, a powerful postbiotic, was effective in improving bowel movement and skin condition in a human clinical trial. The study consisted of 20 female subjects ages 20 to 39 who tend to have constipation. The subjects were given 20mL of Biozyme drink twice a day for 4 weeks and observed for frequency and quantity of bowel movement and skin condition.

Within one week, the frequency of stool in subjects significantly increased 3.1 times compared to before intake and within 4 weeks increased to 4.8 times. The quantity of stool also increased significantly after 4 weeks of intake. In addition, subjects reported the following skin conditions to have improved: dry face, dry skin around eyes and

lips, poor condition for make-up, poor skin penetration of cosmetics products, and pimples. It is hypothesized that there may be a correlation between constipation and the appearance of rough skin and pimples because of the harmful substances from the stool that are absorbed into the blood. This may provide an explanation for why skin condition is improved with Biozyme intake in addition to constipation.

Biozyme is an extract of at least 40 different vegetables and herbs that are fermented and matured over 6 months. Biozyme is a postbiotic that is rich in physiologically active substances that are produced by a fermentation process with *Bacillus* sp. Biozyme and then followed by a maturation process to break down the active components into

low molecular compounds for better absorption in the body. These active substances include amino acids and peptides from broken down enzymes, polysaccharides and oligosaccharides, organic acids, vitamins, and minerals. Because Biozyme is a low-molecular fermented extract, it more efficiently promotes the formation of enzymes in the body compared to typical enzyme extracts.

Biozyme is a product of Japan Bio Science Laboratories and has been produced since 1974 using JBSL's original bacteria *Bacillus* sp. Biozyme. Biozyme is formulated into health drinks that are consumed in Japan for constipation relief as well as a “Beauty from Within” supplement. For more information regarding Biozyme contact JBSL-USA at [sales@jbsl-net.com](mailto:sales@jbsl-net.com) or call 925) 938-2732.



# Aged black garlic extract for relief of mild hypertension

**RESULTS OF A NEW** clinical study have confirmed the blood pressure balancing effect of Pharmactive Biotech Products, SLU's ABG10+. Aged Black Garlic (ABG10+) has demonstrated the positive effect in blood pressure in patients exhibiting Grade-1 hypertension receiving prescribed drug treatment.

Aged Black Garlic is a whole raw garlic bulb (*Allium sativum* L) that has been aged under controlled temperatures for a certain period of time. Pharmactive's proprietary ageing process potentiates the accumulation of garlic's bioactive complex of antioxidant compounds, including polyphenols, flavonoids, and melanoidins—particularly S-allyl cysteine (SAC).

The study, published in the research journal *Nutrients*, was a randomized, triple-blind controlled trial conducted at the Hospital Universitari Arnau de Vilanova (Lleida, Spain), and in collaboration with the Atherothrombotic Disease Detection and Treatment Unit (UDETMA). Led by Dr. José Carlos Serrano, Ph.D., the study involved 81 volunteers suffering from Stage 1 hypertension and who were already on blood pressure-reducing medication.

Over a period of 12 weeks, the subjects received 250mg of ABG10+ daily, which provided 0.25mg of SAC, or a placebo. No changes were made to diet or lifestyle and the subjects were instructed to continue taking their blood pressure medication. Blood pressure measurements were recorded daily at home by the participants as well as at baseline and at the end of the study by specialists.

The addition of ABG+ supplementation helped better control blood pressure levels, with reductions

observed in both systolic and diastolic blood pressure of 1.8 mmHg and 1.5 mmHg, respectively.

Moreover, it was observed via blood serum tests that ABG10+ supplementation may boost the release of nitric oxide and increase the body's antioxidant capacity. ACE (angiotensin converting enzyme) activity seemed to be reduced, and lower blood uric acid levels also were observed.

"These secondary parameters help us gain an understanding of the likely mechanism behind ABG10+'s effect on blood pressure," explains Alberto Espinel, Open Innovation Director of Pharmactive. "Nitric oxide is a natural vasorelaxant produced in the body to maintain cardiovascular function, improving blood pressure, and increasing blood flow. Nitric oxide also is a cellular antioxidant and thus helps mitigate oxidative stress and its associated negative effects on blood vessels and the cardiovascular system. Reducing the angiotensin converting enzyme activity is a key strategy to decrease blood pressure in hypertensive patients."

The majority of the volunteers enrolled in the study had a medical history of high blood pressure spanning 15 years on average. Despite adhering to their prescribed pharmacological routine, they were still unable to maintain blood pressure levels within a normal range. "This study suggests that incorporating food bioactives such as aged black garlic extract into the treatment regimen could serve as a valuable complement to conventional drug therapy, and could contribute to reduced cardiovascular risk," Espinel adds. "Such intervention could be especially beneficial for the manage-

ment of arterial high blood pressure in persons experiencing resistance to drug therapy—all without inducing side effects."

Hypertension is a leading risk factor for cardiovascular disease, including stroke and heart failure. Research has demonstrated that even modest reductions in blood pressure can lead to meaningful gains in the prevention of such incidents. For example, a reduction of 2mm Hg in systolic blood pressure can reduce the risk of stroke by 10% in middle age.

The new study followed favorable outcomes of a 2022 clinical trial involving ABG+, where participants with moderately elevated cholesterol levels achieved significant reduction in diastolic blood pressure (5.85 mmHg on average) compared to placebo.

"As garlic ages, its fresh compounds like allicin and sulphur undergo chemical changes, forming new compounds, including SAC and melanoidins," explains Carlos Rodríguez, Communication Manager. "These compounds create the special flavor, aroma, and color of aged black garlic which is why it is a culinary favorite of chefs. Yet these same bioactive compounds are believed to possess powerful antioxidant and support cardio health."

Pharmactive's ABG10+ extract is derived from garlic grown and cultivated in Castilla la Mancha, two hours away from the company's facility in Madrid, and gently processed using green technology, without the use of solvents, or chemicals. The ingredient can readily be incorporated into supplements as well as functional foods.

[www.pharmactive.eu](http://www.pharmactive.eu)

## Consumers vote LIPOFER™ iron an easier pill to swallow

**LUBRIZOL LIFE SCIENCE**, has announced results of its new study which reveals its proprietary melt-in-your-mouth iron supplement LIPOFER™ has taste appeal. The data was presented at the recent SupplySide West 2023.

Iron supplementation, while crucial for many, carries a reputation for being unpalatable largely due to its tendency to leave a powerful and unpleasant metallic aftertaste. This can be off-putting enough to lead some consumers to forego this necessary supplement.

"Many consumers turn to iron supplements to improve blood deficiencies, increase iron count and energy, while others are required to take iron supplements under medical advice," explains David Padró Escayola, Global Business Manager for LLS Nutraceutical business. "These consumers are eager for a supplement that is easy to swallow, does not cause stomach upset or constipation, and does not have an unpleasant aroma or flavor. Above all, they want it to effectively improve wellness. LIPOFER was specifically designed to tick all those boxes, overcoming many of the challenges manufacturers face in the effort to create consumer-friendly sources of iron. Ours delivers the daily recommended dose of iron in a single, 1.5g stick that satisfies the demands for science-backed, clinically substantiated

ingredients with sensory appeal."

Lubrizol's orosoluble iron is a highly concentrated, micronized, and microencapsulated iron source designed specifically to reduce iron's reactivity in the mouth and digestive tract while delivering a fully absorbable mineral that is significantly easier and pleasant to digest.

The recent trials involved 100 volunteers who were instructed to blind-test a series of five orosoluble powder sticks in a single session. Two of the powdered iron candidates were LIPOFER iron sachets at differing doses. LIPOFER-14 delivers the fully recommended daily dose, whereas LIPOFER-5 offers a more moderate dose of the ingredient. The other three powdered sticks were composed of conventional iron salts in an orosoluble format.

The consumers were asked to rate various sensory characteristics of each product, including appearance, homogeneity, and metallic aftertastes. They then ranked the products in the order of their preferences.

Consumers found that the LIPOFER formulations exerted the mildest metallic aftertaste, and that lingered for a much shorter duration compared to the standard iron formulations. They also noted that LIPOFER demonstrated exceptional homogeneity, with a silky-smooth texture that

melts instantly upon consumption.

In follow-up interviews, the panellists related high levels of satisfaction, with many expressing extreme satisfaction with the LIPOFER orosoluble sticks as a supplement format. Additionally, they indicated that they would be likely to incorporate LIPOFER into their daily regimen.

This consumer study is part of Lubrizol nutraceutical division mission, "Connecting the Dots: Guiding supplement makers through the consumer mind." This focus reflects Lubrizol's consumer-led, insights-driven approach to serving the end-user.

"We also conducted an analysis on the iron category using a consumer insights AI-powered platform to gain an understanding of what drives good or negative sentiments regarding iron supplementation," says Isabel Gómez, Global Marketing Manager for LLS Nutraceutical business.

LIPOFER powdered stick is water dispersible and can easily be integrated into a wide variety of supplement formats and to fortify convenient foods including dairy products and fruit juices. It has already successfully featured in a flavorful, pectin-based gummy, elevating the iron-supplementation experience.

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

## Meta-analysis confirms ferrous bisglycinate has greater efficacy and lower risk of side effects compared to other iron salts in pregnant women

**A NEW SYSTEMIC REVIEW** and meta-analysis published in *Nutrition Reviews*<sup>1</sup> has concluded that ferrous bisglycinate supplementation in pregnant women provides significantly higher efficacy at raising hemoglobin status, and results in a 64% lower rate of gastrointestinal adverse events<sup>2</sup> compared to other iron salts.<sup>3</sup>

Conducted by a team of researchers from the University of British Columbia in Vancouver, Canada, the research sought to evaluate the effects of ferrous bisglycinate supplementation compared to other iron salts\* on iron status and gastrointestinal (GI) adverse events.<sup>1</sup> Multiple chelated iron products were used in this research, including Albion® Minerals' Ferrochel®. The findings present supplement manufacturers with an exciting opportunity to innovate with high efficacy iron forms.

### Iron deficiency: a global concern

Iron deficiency is a worldwide issue and is estimated to affect over 40% women of child-bearing age in certain countries.<sup>4</sup> However, many consumers are reluctant to take iron supplements during pregnancy as they often cause side-effects to the digestive system, which can pose a significant challenge in patient compliance and decrease efficacy. The data in this latest study compared rates of GI adverse events observed in trials of pregnant women, showing that ferrous bisglycinate supplementation was 64% less likely to result in GI adverse events compared to other iron salts.

The meta-analysis included 17 different

randomized controlled trials, focusing on over 1,100 children and pregnant women. The results demonstrated that ferrous bisglycinate supplementation led to greater improvements in haemoglobin status among pregnant women - a commonly measured biomarker of anemia and iron status. The research also reported ferrous bisglycinate supplementation led to greater changes in ferritin, another iron status biomarker, however this difference did not achieve statistical significance. However, this was partially attributed to differences in reporting adjustments between trials. While analysing the available data related to the children group, these differences failed to reach statistical significance, likely due to the relatively small number of clinical trials included and differences in trial design (n=4).

Following this initial study, Balchem has now commissioned a new clinical trial on Ferrochel® in pregnant women with the same research team, which aims to begin recruitment in Fall 2023. This research aims to provide further insights into the optimal forms of iron to be used across various ages and stages of life.

"These findings are important as they confirm that not all oral iron supplements should be considered as equal. The ideal form of iron in prenatal multiple micronutrients should be highly bioavailable and have a low risk of gastrointestinal side effects in order to optimize adherence and reduce the risk of iron deficiency anemia during pregnancy. Ultimately, our findings show promise for ferrous bisglycinate as a superior form of

supplemental iron compared to iron salts", adds Crystal Karakochuk, Assistant Professor of Food, Nutrition and Health at The University of British Columbia, and the lead researcher on the study.

"We're pleased to see that this latest study provides further evidence to show the enhanced efficacy and tolerability that ferrous bisglycinate, such as Ferrochel®, is commonly associated with", comments Jonathan Bortz, MD, Vice President Nutrition Science at Balchem. "For decades now, we have been investigating the role iron can play in supporting healthy pregnancies and we are confident that additional data will provide additional proof of the superiority of ferrous bisglycinate over other iron salts."

Ferrochel® is the flagship product within Balchem's Albion® Minerals portfolio, with decades of research supporting its use. A unique, fully chelated iron product formed by binding iron to two organic glycine molecules, its small molecular size allows it to remain intact throughout the GI tract for optimal absorption. This more bioavailable form of iron is essential for gestating mothers and growing children.

### References:

- 1 Fischer JAJ, et al., *Nutr Rev* 2023; 81(8): 904-920.
- 2 GI adverse events defined as Heartburn, Nausea, Constipation, Diarrhea, Abdominal Pain
- 3 Other iron salts defined as Ferrous Sulfate, Ferrous Fumarate, Carbonyl Iron, Iron Multi-Amino Acid Chelate, Ferrous Ascorbate, Sodium Ferredelate, Ferrous Glycine Sulfate, and Polymaltose Iron
- 4 Stevens GA, et al., *Lancet Glob Health* 2022; 10: e1590-99.

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

## New study highlights impact of proactive bone health strategies

**A NEW AUSTRALIAN STUDY** published in the *Journal of Bone and Mineral Research* that suggests that simple strategies to strengthen bones, implemented by healthy as well as at-risk populations, could lead to a substantial decrease in hip fractures.

Analyzing data from the Dubbo Osteoporosis Epidemiology Study, one of the longest-running studies on osteoporosis in the world, which includes more than 3,000 individuals over 60 years of age tracked over time for fracture incidence and risk factors, researchers found that between the first cohort in 1988-92 and the second in 1999-2001, bone mineral density (BMD) increased by 3%. During the same period, there was a 45% decrease in hip fractures, a decline typically associated with a 10% rise in BMD.

The authors concluded their findings "suggest that a population-wide strategy aiming at enhancing BMD across the entire population could lead to a substantial decrease in the incidence of hip fractures."<sup>1</sup>

Gnosis is excited about these findings because

they emphasize the importance of the overall population paying closer attention to supporting their bone health - not just those who have discovered their bone health is compromised - and are indicative of how protecting against loss of BMD is critical to health and well-being.

"At Gnosis, we offer clinically validated ingredients that support health and well-being on numerous fronts," says Xavier Berger, Global Market Manager with Gnosis by Lesaffre. "From a bone-health perspective, our MenaQ7 Vitamin K2 as MK-7 is leading the charge."

A groundbreaking three-year study in healthy postmenopausal women showed that MenaQ7® K2 supplementation (180 mcg/daily) made a significant improvement in vitamin K status outside the liver and slowed down the age-related decline in bone mineral content (BMC) and bone mineral density (BMD) in crucial areas like the lumbar spine and femoral neck, which are the bones most prone to weakness. Furthermore, it had a positive impact on bone strength as well.<sup>2</sup>

"These findings strongly suggest that taking

vitamin K2 in the form of MK-7 supplements can help inhibit bone loss and enhance bone strength," Berger adds, noting that these results also support the health claim endorsed by the European Food Safety Authority (EFSA), affirming the vital connection between vitamin K and the maintenance of normal bone health. "MenaQ7 is the best-researched K2 as MK-7 for preserving bone health, not only in adults but children, too. This new study underscores the opportunity for the population to consume Vitamin K2 as menaquinone-7 to protect their BMC and BMD as they age to remain active and vibrant in their later years."

### References:

- 1 Tran et al. Prevention of hip fractures: trade-off between minor benefits to individuals and large benefits to the community. *Journal of Bone and Mineral Research*. 28 Aug 2023; <https://doi.org/10.1002/jbmr.4907>
- 2 Knapen et al. Three-year low-dose menaquinone-7 supplementation helps decrease bone loss in healthy postmenopausal women" *Osteoporos Int*. 2013 Sep;24(9):2499-507.

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



# Milk from carbon dioxide and electricity

**SOLAR FOODS JOINS** forces with academia and contract partners in a EUR 5.5 million European Innovation Council (EIC) project HYDROCOW. The project will develop a novel biological tool to produce sustainable milk protein from CO<sub>2</sub> and electricity.

EIC is part of Horizon Europe, an EU research and innovation funding programme focused on identifying, developing, and scaling up breakthrough technologies. The HYDROCOW project funding comes from the EIC Pathfinder instrument which targets the exploration of exceptionally bold ideas for radically new technologies and early-stage research.

In spirit of the Pathfinder call, HYDROCOW aims to create a scientific breakthrough. Our goal is to engineer a microbe that converts carbon dioxide (CO<sub>2</sub>) and hydrogen, produced from water using electricity, into beta-lactoglobulin, a major constituent of milk. In other words, HYDROCOW aims to produce milk with CO<sub>2</sub> and electricity, removing the cow from the process.

## A challenging endeavor – but with a high reward

As far as we know, milk protein production with this type of microbe has never been done before. We expect the hydrogen technology platform to be orders of magnitude more efficient and environmentally friendly compared to traditional animal-based dairy farming which in turn has inherent environmental problems.

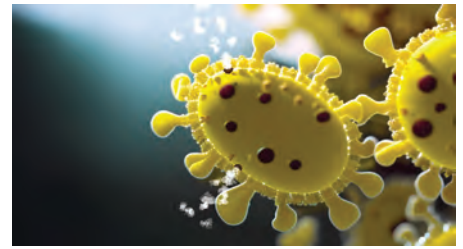
Hydrogen-oxidizing microbes are known for

their unique ability to extract energy from hydrogen and carbon from CO<sub>2</sub> gas, not for their protein production capabilities. Engineering microbes to secrete nutritional proteins in general has been a keen point of interest over the last years. However, most solutions rely on heterotrophic microbes that feed on sugar or other high-energy carbon sources derived from agriculture.

The HYDROCOW project takes things one step further by building a carbon neutral system that works independently from agriculture and photosynthesis. Instead of starting from heterotrophic microbes that use feedstocks from agriculture, we are modifying a hydrogen-oxidizing microbe to secrete milk proteins. This removes agriculture from the equation.

Despite such an attractive goal, attempts to achieve this objective have been scarce. The challenge lies in the fact that hydrogen-utilizing microbes are typically not naturally equipped for protein secretion. In nature, they require little protein transport through their cell outer membranes because they do not need to secrete sugar-dissolving enzymes to their environment to sustain growth. The protein secretion machinery of hydrogen-utilizing microbes needs a lot of groundwork, as opposed to the sugar-loving microbes that tend to contain most of the required secretion components naturally.

Having to do multiple substantial modifications to a single microbe is challenging and may compromise its viability. This is why this project is a great fit for the Pathfinder funding instrument



specialized in high-risk/high-reward ventures.

## Loading the full potential of our technology

The HYDROCOW mission is inspired by Solar Foods' proprietary microbe that feeds on CO<sub>2</sub> and hydrogen to grow a high-protein food ingredient called Solein®. While firmly building its foundation on Solein, Solar Foods has also been actively researching new food microbes for years and has lately developed engineering methods to modify those microbes.

HYDROCOW is another exciting branch reaching deeper into to the full potential of our technology. If successful, we expect to gain not just a microbe that produces milk protein, but a platform that in the future could be modified to produce other proteins as well. There is a vast pool of ideas to extract from, ranging from edible proteins to various functional and even pharmaceutical proteins, like antibodies.

With this new tool, opportunities to turn hydrogen and CO<sub>2</sub> into valuable products would expand tremendously, making Solar Foods' vision of disconnecting food production from agriculture a reality for other products as well.

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

# New Chr. Hansen review of 26 clinical studies reports beneficial effects of HMO in gut health and immune system

**CLINICAL STUDIES IN INFANTS**, children and adults consistently found that HMO supplementation was safe and well tolerated. Infant studies reported a shift in outcomes such as gut microbiome and immune markers towards those observed in breast-fed infants.

In recent years, analytical and technological advances have offered valuable insights into the multiple health benefits associated with HMOs (human milk oligosaccharides).

Global bioscience company Chr. Hansen is a leading supplier of HMOs, manufactured on a large scale in addition to e.g. infant formula and dietary supplements.

In a new systematic review published in *Nutrients*, the HMO science team from Chr. Hansen has compiled data from 26 clinical studies on HMOs published until the end of 2022, using manufactured HMOs in various study populations. These populations include healthy-term infants, infants with medical indications, children, and adults.

Conclusions:

- All studies reported safety and tolerance of the respective single HMO and HMO blends, the HMOs applied differed in complexity and dosage.
- Several studies reported a positive shift in outcomes towards those observed in breastfed infants - including stool characteristics, gut microbiome composition, intestinal immune

markers, and beneficial effects on gut health and the immune system.

- Beneficial gut health and immune system effects have also been observed in other populations following HMO supplementation.

## Focus on strengthening scientific insights and expertise

In addition, Chr. Hansen published a new study in June 2023 focusing on how infant formula supplemented with five human milk oligosaccharides shifts the fecal microbiome of formula-fed infants closer to that of breastfed infants. It showed an increase in the relative abundance of bifidobacteria in the 5 HMO Mix cohort compared with the formula-fed control.

"At Chr. Hansen, we continuously create research and clinical trials to further explore the effects of HMO supplementation on human health and to understand the structure and dose dependency of HMOs. It is a strategic priority for us to invest in building in-depth knowledge in this emerging field and provide insights on the benefits of HMOs," says Dr. Katja Parschat, Head of Research & Development, Chr. Hansen HMO.

"Our aim is to support the healthy development of infants that cannot be breastfed by providing HMOs as an ingredient for infant formula. With the publication of the in-depth systematic review,

Chr. Hansen contributes to building knowledge on the beneficial effects of HMO, assessing the current study level. We are happy to provide this to customers and researchers to facilitate and to collaborate on further insight building around HMOs," she concludes.

Only in June, Chr. Hansen received EU authorization for the final HMO in its MyOli™ 5 HMO Mix, containing 2'-FL, 3-FL, LNT, 3'-SL and 6'-SL and approved for infant formula and follow-on formula at the currently highest use levels in the industry.

Human milk oligosaccharides (HMOs) are a major component of human milk, associated with multiple health benefits including shaping a healthy infant gut microbiome, possibly supporting brain development and the maintenance of a well-balanced immune system, reducing the risk of bacterial imbalance and maturing and maintaining the integrity of the intestine. Read more here

The new HMO study review includes 26 published relevant clinical trials and five publications describing follow-up studies. The clinical trials varied in study populations, including healthy term infants, infants with medical indications, children, and adults. They tested eight different HMO structures individually or as blends in varying dosages.

[www.chr-hansen.com](http://www.chr-hansen.com)

# A new study asserts resB® lung support improves lung function through microbiome-mediated mechanisms along the gut-lung axis in asthmatic population

**ASTHMA IS A MAJOR** cause of disability, poor quality of life world-wide and health resource utilization. The World Health Organisation (WHO) estimated that 262 million people suffered from asthma in 2019 and it caused 455 000 deaths. ResBiotic Nutrition Inc is a university startup out of the University of Alabama, Birmingham, USA, who partnered with Atlantia Clinical Trials Ltd., a world leading contract research organisation, to explore the effects of their novel supplement resB® Lung Support on lung function targeting the gut-lung axis. The gut-lung axis serves as a powerful means of communication between the gut microbiome and the inflammatory and immune microenvironment of the lungs. Patients with respiratory diseases often have gastrointestinal symptoms and show distinct gut microbiomes compared to healthy individuals.<sup>1</sup> This new study asserts resB® Lung Support improves lung function through microbiome-mediated mechanisms along the gut-lung axis in asthmatic patients.

## The gut-lung axis

Alterations in the gut microbial species and metabolites – also known as dysbiosis – have been linked to changes in immune response and inflammation in the lungs. Specific bacteria such as *Lactobacillus* species have been found to promote lung health by maintaining proper uptake of short chain fatty acids (SCFA) in both healthy and diseased populations.<sup>2</sup> Metabolites from gut microbiota such as SCFA produced by gut bacteria travel through systemic circulation, thereby stimulating and promoting the differentiation of T-cells, which further supports anti-inflammatory and immunomodulatory actions in the lungs.<sup>3</sup>

Another downstream effect of dysbiosis, whether in the gut or the lungs, is inflammation associated with white blood cells called neutrophils. Neutrophilic inflammation is a common feature of many chronic lung diseases, and other cytokines including C-reactive protein (CRP) contributing to neutrophil recruitment and increased inflammatory response.<sup>4</sup> Dysbiosis in the gut can also be exacerbated with poor nutrient intake. Therefore, nutrition and a balanced gut microbiota are key components of a multi-factorial approach to support proper lung function.<sup>5</sup>

In a previously published trial of asthmatic patients, a *Lactobacillus* probiotic supplement taken once daily for eight weeks resulted in a significant improvement in lung function in terms of *Forced Expiratory Volume in one second* (FEV1%) and *Forced Vital Capacity* (FVC) measured by spirometry.<sup>6</sup> These tests calculate the amount of air that a person can force out of their lungs in 1 second (FEV1%) and the total amount of air exhaled during the FEV test (FVC). This study was significant as it was conducted with a robust design: a randomized, double-blinded, placebo-controlled

## ABOUT THIS GUT-LUNG-AXIS CLINICAL STUDY



### STUDY PRODUCT

- Blend of probiotics and herbal extracts



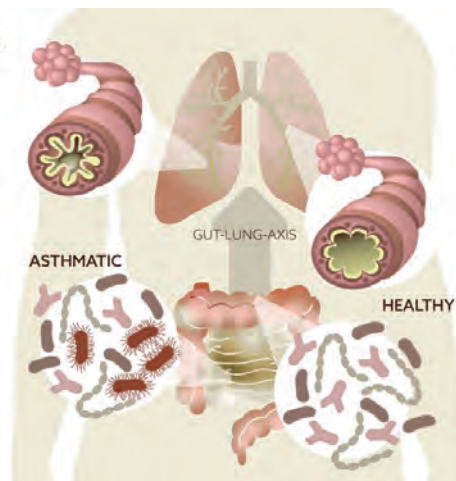
### STUDY CONDUCT

- Open label, pilot study
- 22 both healthy and asthmatic participants were involved
- 4 weeks of intervention



### STUDY RESULTS

- Product deemed safe
- Product improved lung function
- Difference in bacterial gut microbiota found across asthmatic and healthy subjects



trial. Another clinical study of probiotics, primarily conducted in children, have also shown improvements in asthma severity, allergic response, and immune biomarkers.<sup>7</sup>

## About this study

The research team was led by ResBiotic Nutrition Inc., Birmingham, USA. Their goal was to assess the safety of a probiotic in asthmatic and healthy participants and to explore its impact on lung function. They collaborated with Atlantia Clinical Trials who designed and carried the clinical outcomes of this study. The study was an open-label, pilot, cohort study to evaluate the safety of a 4-week intake of resB® Lung Support in asthma and healthy participants. The product was a blend of three probiotic *Lactobacillus* strains, namely *L. plantarum*, *L. acidophilus*, *L. rhamnosus* and three herbal extracts, turmeric, holy basil, and vasaka. The

study focused on the vital signs and adverse events to assess the safety, whereas changes were documented for lung function measured by spirometry and questionnaires such as Saint George's Respiratory Questionnaire (SGRQ) to measure respiratory health quality of life.

## The results

resB® Lung Support was found to be safe and tolerable in asthmatic and healthy participants. The statistically significant improvements in lung function (FEV1%, and positive trends in FVC) and SRGQ are promising. This improvement may have been due to the significant uptick in serum SCFA which traveled through systemic circulation to reach the lung microenvironment. resB® Lung Support is thought to improve lung function by supplementing microbes in the gut to increase SCFA production in systemic circulation in patients with asthma.

## Looking ahead

In the future, microbiome amplicon sequencing and analysis of gut and lung microbiota in

patients with respiratory conditions may provide an insight into the possible microbial changes associated with resB® Lung Support. The respiratory microbiome has been shown to play roles in human health and disease and is an area of rapidly emerging interest in pulmonary medicine. It is necessary to understand the relationship between microbiome changes and the development of lung disease to identify new pathway targets, which will bring major breakthroughs in targeted screening models and microbial-based therapies with the ultimate goal of improving patient care and outcomes.<sup>8</sup>

In conclusion, the study presented positive results as the safety and tolerability of resB® Lung Support was confirmed. The improvements in lung function associated with the *Lactobacillus* probiotic and herbal blend were accompanied by potentially beneficial increases in SCFA in asthmatic patients. Clinical relevance of these findings affects people with and without existing respiratory conditions who are seeking a means to support their lung health.

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# University of Minnesota study suggests even more reasons to eat your fiber

**HEALTH PROFESSIONALS HAVE** long praised the benefits of insoluble fiber for bowel regularity and overall health. New research from the University of Minnesota suggests even more reasons we should be prioritizing fiber in our regular diets. In a new study published in *Nutrients*, researchers found that each plant source of insoluble fiber contains unique bioactives — compounds that have been linked to lower incidence of cardiovascular disease, cancer, and Type 2 diabetes — offering potential health benefits beyond those of the fiber itself.

"People understand the need for fiber and how it relates to gut health — an area of wellness that is becoming increasingly important as scientific research continues to reveal its impact on overall health and wellbeing," said Joanne Slavin, co-author of the paper and a professor in the College of Food, Agricultural and Natural Resource Sciences at the University of Minnesota. "Fiber is the marker of health that is included in our dietary guidelines and found on product labels, but our research indicates that we need to ensure the other valuable components of fiber-containing plant sources — the bioactives — are also recognized as providing valuable benefits for human health."

The study aggregated the available literature on

the health benefits of bioactives in plant sources of insoluble dietary fiber.

They found:

- A variety of plant foods, including fruits, vegetables, legumes, nuts, seeds, and whole grains, contain insoluble dietary fiber, and each source contains unique bioactives that support health in different ways.
- Desirable bioactives like Quercetin, Resveratrol, Catechins, Anthocyanins, Lutein, Lycopene, and Beta-Carotene were found in a variety of plant foods that also contain insoluble dietary fiber.
- Plant sources with bioactives and insoluble dietary fiber could be used to fortify processed foods to increase their nutritional value. Food production byproducts such as peel, hulls, pulp, or pomace are generally high in fiber and bioactives and therefore offer unique nutritional value from sustainable sources.
- Consumer research found that utilizing this fortification at a low level did not decrease consumer acceptability of the food product.

"The suggestion to eat more fruits and vegetables isn't a novel idea, but it's something most people still struggle to do," said Jan-Willem Van Klinken, co-author of the study and senior vice

president of medical, scientific, and regulatory affairs for Brightseed. "If we can offer widely accessible fiber-fortified products that have been developed to enhance rather than negate bioactive content, we can provide consumers with increased nutritional value."

This most recent research on bioactives' impact on human health further illuminates the need for industry, academia, and government to join forces to champion broad awareness and education of bioactives in food and health systems.

"The collection of literature we reviewed and the results of this research can serve as a paradigm shift in how the food and health industries, as well as consumers, view insoluble dietary fiber and bioactives," said lead author Madeline Timm, who co-authored the research for her graduate project at the University of Minnesota. "Continued research and broad inclusion of bioactives in foods and supplements can have a real impact on human health."

Further research is required to identify extraction and processing methods that preserve and optimize bioactive compounds.

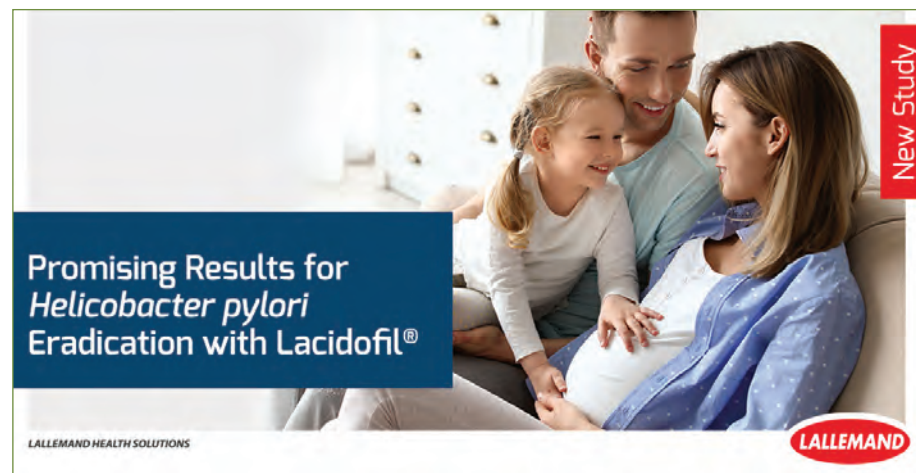
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## New study reveals promising results for *Helicobacter pylori* Eradication with Lacidofil®

**A NEW STUDY** highlights the potential of Lacidofil® as an adjuvant to standard therapy as an effective approach for *Helicobacter pylori* eradication.

"Backed by over 29 positive clinical trials with over 1,000 participants and pre-clinical scientific evidence, Lacidofil® has consistently demonstrated its beneficial effects on maintaining a healthy intestinal microbiota, leading to overall well-being. This new study strengthens the evidence already available showing that Lacidofil® is an effective adjuvant to standard therapy for *H. pylori* eradication and reduces the side effects of the antibiotics in this therapy" confirms Marie-Laure Oula, Clinical Program Manager at Lallemand Health Solutions.

This new double-blind, randomized, placebo-controlled study [Kiattiweerasak, 2023] shows the efficacy and safety of Lacidofil® a unique formula combining two proprietary probiotic bacteria strains *L. rhamnosus* Rosell®-11 and *L. helveticus* Rosell®-52. The study included 90 adults, taking either a placebo or Lacidofil® with standard triple therapy for two weeks and then continued with either the placebo or the probiotic alone for four additional weeks. Gastrointestinal comfort and general health-related quality of life criteria were analyzed at baseline, and after two and six weeks of probiotic intervention. The analyses showed a statistically significant decrease of gastrointestinal discomfort and increase of general health-related quality of life at week six compared to placebo group ( $p < 0.001$  and  $p = 0.02$ , respectively). The study also highlights that Lacidofil® is able to increase the eradication rate



of *H. pylori* ( $p = 0.047$ ).

Lacidofil® has been on the market since 1995 and is now available in over 20 countries, both as a standalone product and as an ingredient in combination with other strains. With a proven record of safe use and a robust pharmacovigilance program, Lacidofil® has earned strong Canadian claims approval for various health applications, including promoting healthy microflora in infants as young as 2 months old, addressing Antibiotic-Associated Diarrhea (AAD), managing acute diarrhea, supporting GI balance during *Helicobacter pylori* eradication therapy, and offering specific

benefits for pregnant women.

Offered in various galenic forms, including powders, capsules, and drops, Lacidofil® is a versatile probiotic solution meeting market demand.

For more information about Lacidofil® and its range of health applications, please contact us at [healthsolutions@lallemand.com](mailto:healthsolutions@lallemand.com)

The findings of this study were also published in *Frontiers in Gastroenterology*

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