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Emerging Food Supplement Ingredients in 2027 /
The Gut-Stress Axis and Adaptogenic Resilience /
Sourcing Challenges in the Ashwagandha
Supplement Industry / Let's Demystify Greenwashing
/ SupplySide Global 2026. Preview

Editor's Word



What will shape the next generation of supplements and beauty solutions? Science-driven innovation, emerging bioactive ingredients, and a deeper understanding of the connection between gut health, stress, cognition, and healthy ageing are helping define what comes next.

In this issue, we explore promising ingredients for 2027, from precision-fermented actives and novel adaptogens to postbiotics. We also examine ashwagandha sourcing challenges, advances in gut health formulations, and emerging opportunities in skin, hair, and women's health.

Beyond science, we cover sustainable packaging, third-party certification, greenwashing, and industry developments shaping product innovation.

Our coverage of **Fi Europe 2026 as a Media Partner**, along with a sneak peek at Supply Side Global, offers further insight into the trends and partnerships driving the market forward.

We hope this edition inspires new ideas and opportunities for your business.

Daria Šurić,
EDITOR-IN-CHIEF

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in health, nutrition and cosmetics sector

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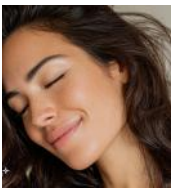
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Emerging Food Supplement Ingredients in 2027: Precision-Fermented Actives, Novel Adaptogens, and Postbiotics

These next-generation ingredients use designed molecules and microbes to help the body absorb them, keep them stable, and support specific health goals^{1,2}.

Engineered microbes turn simple raw materials into useful compounds, such as specialized oligosaccharides and polyunsaturated fatty acids, which were previously difficult to scale sustainably^{3,4}. Using biological data, producers can adjust how microbes work to make useful compounds and reduce environmental impact compared with animal farming^{5,6}. Beyond protein synthesis, these tools help produce heme proteins and enzymes that improve the taste and nutritional value of plant-based meat alternatives⁷. At the same time, AI helps researchers select microbes to produce functional bioactive compounds for specific health needs⁸. These advances are making production more predictable, replacing trial and error with data-led methods⁹.

Precision fermentation is one production route, not the only one. Plant cell culture offers a comple-

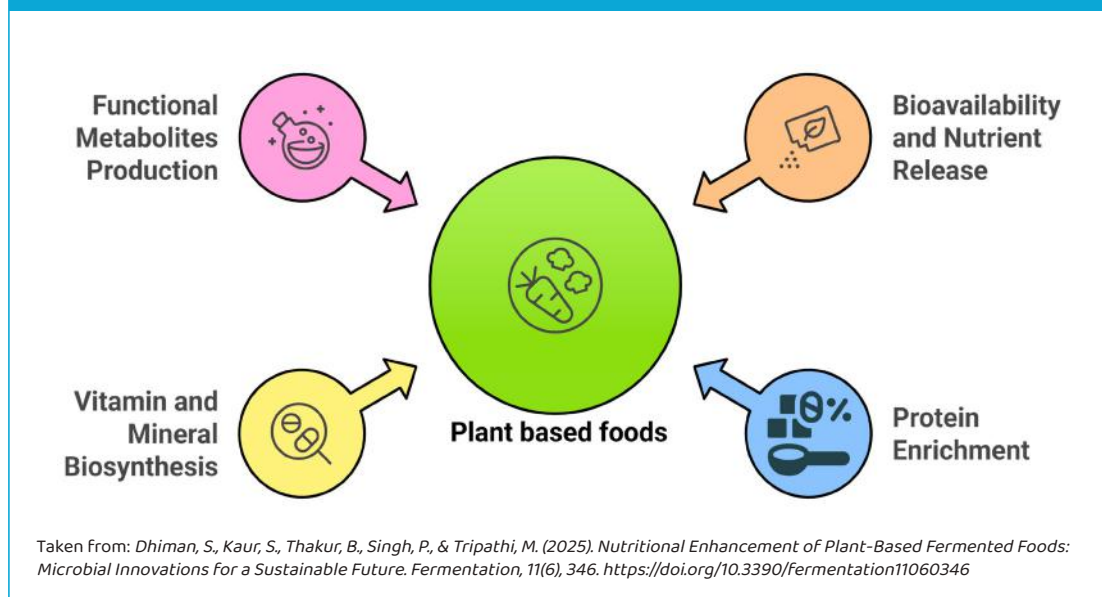
mentary platform for producing plant secondary metabolites, including ginsenosides. A balanced 2027 perspective should compare the platforms' scalability, product consistency, and regulatory pathways. PCC's use of cultured plant cells rather than engineered microbes may shape its regulatory considerations, but should not be assumed to eliminate regulatory review; requirements vary by product and jurisdiction.

Fermented vitamins

Microbial biotransformation can bind zinc to a food matrix, potentially improving its absorption. The GPM zinc analysed in this study was produced using *Lactobacillus* and *Bifidobacterium* strains¹⁰. However, these advantages are not universal: engineered production (Figure 1) does not inherently ensure greater bioavailability or clinical benefit. Re-



Figure 1 Nutritional enhancement of plant-based foods through fermentation



searchers also use CRISPR, a gene-editing tool, to improve these microbes and enhance bioactive compound production¹¹.

These products can make food safer and keep it fresh longer while replacing less sustainable synthetic additives in nutritional products¹². Researchers are also using synthetic biology to produce and formulate postbiotics: microbial derivatives that may support immune and metabolic health¹³. These compounds can influence gut microbes and support the intestinal barrier, which may contribute to gut health¹⁴. Researchers can also adjust how microbes produce flavour compounds, helping nutritious products taste better¹⁵.

Fermented fibers

Fermentation offers a route to produce prebiotic fibers and oligosaccharides with controlled chain lengths and glycosidic linkages. These structural features influence how selectively the fibers are fermented by gut microbes, while also affecting properties such as solubility and stability in food products. Encapsulation and other delivery approaches may further help protect some fiber structures during digestion and support their release in the colon¹⁶.

The effects of these ingredients are not automatic: they can vary with fiber structure, dose, and an individual's gut microbiome. Gastrointestinal intolerance and the need for stronger clinical validation remain important considerations for product development¹⁶.

Researchers use microbial fermentation to produce prebiotic fibres with controlled chain lengths and glycosidic linkages¹⁶.

These custom-made sugar chains are designed to support helpful gut microbes and promote metabolic health and immune function, finds study on mice¹⁷. These structures can be made to dissolve more easily and withstand digestion in the upper gut, so they reach the lower colon, where selected microbes can ferment them¹⁸. This flexible design lets us control several enzymes at once and build different sugar

chains for specific health needs. This control over microbial metabolism helps provide a steady supply of these health compounds while reducing the ethical and environmental costs of farming and harvesting them¹⁹. By combining these engineered groups of microbes, researchers can build controlled gut models to study and address imbalances in different hosts' gut microbes²⁰. These systems also let researchers measure how gut chemicals affect the body. For example, they can track levels of short-chain fatty acids such as butyrate, which can help heal the gut lining and guide immune responses^{21,22}.

Tiny protective coatings help these sensitive postbiotics and prebiotic structures stay active during production and as they pass through the gut¹⁶.

Emerging adaptogens

Microbes are being used to produce active adaptogen compounds, including specific ginsenosides and withanolides^{23,24}. These forms may offer potential for enhanced bioavailability, but clinical evidence directly comparing them with traditional plant extracts remains limited; microbial production can also support consistent batch strength.

Microbial production is one route for making plant-derived compounds, not the only alternative to agricultural sourcing. Plant cell culture (PCC) is a competing platform for producing plant secondary metabolites, including compounds also targeted by microbial synthesis. Its regulatory considerations differ from those for engineered microbes, but whether PCC faces fewer hurdles depends on the product and jurisdiction. Using robust microbes can nevertheless bypass seasonal variability and extraction inefficiencies associated with traditional botanical sources²⁵. This approach enables researchers to design flexible pathways that redirect cell chemistry and build up ingredients for higher yields²⁶.

Researchers can also search genomes and adjust versatile enzymes to create new versions of these molecules, then test their activity²⁷. Integrated syn-

thetic biology toolboxes and metabolic models enable precise tuning of enzymatic activity to limit shunt-product formation and improve the purity of complex therapeutic plant natural products²⁸. Machine learning can help track and control these changing chemical processes, easing the challenges of making complex plant enzymes work in microbes^{26,29}.

Rationally engineered microbial consortia may also support scalable production of bioactive compounds previously sourced from rare botanical reservoirs³⁰. Research is also exploring microbial-derived tryptophan catabolites as mediators of the gut-brain axis and developing next-generation probiotics for specialized pharmaceutical applications, including targeted delivery; their therapeutic roles remain under investigation³¹. Large-scale fermentation-based manufacturing may offer a more sustainable alternative to resource-intensive harvesting³².

Yeast-based microbial cell factories have demonstrated the feasibility of producing complex plant-derived secondary metabolites, potentially reducing dependence on field cultivation and its yield fluctuations³³. Modular synthetic co-cultures and metabolic engineering can help address bottlenecks in complex enzymatic pathways and low-yield extraction^{34,35}.

Postbiotics opportunities in health categories

These microbe-made substances, from immune-regulating fats to compounds that fight infection, could help us develop treatments that target the relationship between the body and its microbes³⁶.

Beyond their effects on the immune system, these inactivated microbial preparations are easier to store and dose consistently than live microbes³⁷. These preparations are more consistent and safer, especially for people with weakened immune systems, and can stay stable at room temperature for long periods¹³. These products contain cell wall fragments, organic acids, and enzymes. They can shape the gut environment and limit pathogens without

the regulatory hurdles that come with living or genetically modified organisms³⁸. They can also be added to foods and drinks, including dairy products, without damaging their active components³⁹. Research shows that these molecules can affect many functions in the body and may help meet health needs at different stages of life⁴⁰. Because they are not alive, these preparations do not need to survive digestion. This helps enough of their metabolic end-products reach the lower colon to act there^{41,42}. Clear rules and standard production methods are now needed to help bring these metabolites from research into widespread use⁴³.

Conclusion

Combining precision fermentation with postbiotics is changing the supplement field, moving towards targeted approaches with clear biological effects⁴⁴.

To move forward, we need clear names and categories for non-viable microbes so regulators in different countries can apply consistent standards⁴⁵. Shared rules can also clarify food and supplement labels and improve communication among scientists and regulators. Researchers should use structured clinical-trial methods to evaluate health claims and ensure bioactive components are present at required levels to achieve meaningful health benefits⁴⁶. Ultimately, these fermentation-made products must be produced at industrial scale to reach more people and reduce reliance on resource-intensive farming^{46,47}.

References:

- ¹ Mishra B, Mishra AK, Mohanta YK, et al. Postbiotics: the new horizons of microbial functional bioactive compounds in food preservation and security. *Food Prod Process Nutr*. 2024;6:1. doi:10.1186/s43014-023-00200-w.
- ² Zhao L, Ju W, Wang L, et al. Functional ingredients: from molecule to market—AI-enabled design, bioavailability, consumer impact, and clinical evidence. *Foods*. 2025;14:3141. doi:10.3390/Foods14173141.
- ³ Elazzazy AM, Baeshen MN, Alasmi KM, et al. Where biology meets engineering: scaling up microbial nutraceuticals to bridge nutrition, therapeutics, and global impact. *Microorganisms*. 2025;13:566. doi:10.3390/microorganisms13030566.



- ⁴ Siddiqui SA, Erol Z, Rugji J, et al. An overview of fermentation in the Food industry—looking back from a new perspective. *Bioresour Bioprocess.* 2023;10:85. doi:10.1186/s40643-023-00702-y.
- ⁵ Graham AE, Ledesma-Amaro R. The microbial food revolution. *Nat Commun.* 2023;14:2231. doi:10.1038/s41467-023-37891-1.
- ⁶ Jatoti AS, Nguyen HM, Ahmed S, Aurangzeb J. Microbial enzymes and genetic design: driving innovation in food bioprocessing. *Sustain Food Technol.* 2026. doi:10.1039/d5fb00661a.
- ⁷ Rojas AAR, Swidah R, Schindler D. Microbes of traditional fermentation processes as synthetic biology chassis to tackle future food challenges. *Front Bioeng Biotechnol.* 2022;10:982975. doi:10.3389/fbioe.2022.982975.
- ⁸ Priyadarshini D, Muthuvel I, Saraswathy S, et al. Precision to plate: AI-driven innovations in fermentation and hyper-personalized diets. *Front Nutr.* 2025;12:1659511. doi:10.3389/fnut.2025.1659511.
- ⁹ Obayomi OV, Malomo AA, Olaniran AF, et al. Transition from fermentation to precision fermentation: role in sustainable food system. *Biotechnol Rep.* 2026;50. doi:10.1016/j.btre.2026.e00952.
- ¹⁰ Jäger R, Purpura M, Davis J, et al. Glycoprotein matrix zinc exhibits improved absorption: a randomized crossover trial. *Nutrients.* 2024;16:1012. doi:10.3390/nut16071012.
- ¹¹ Dhiman S, Kaur S, Thakur B, et al. Nutritional enhancement of plant-based fermented foods: microbial innovations for a sustainable future. *Fermentation.* 2025;11:346. doi:10.3390/fermentation11060346.
- ¹² Vermelho AB, Cardoso VS, Domingos LTS, et al. Advancements in microbial applications for sustainable food production. *Foods.* 2025;14:3427. doi:10.3390/foods14193427.
- ¹³ Mafe AN, Sharifi-Rad J, Călina D, et al. Postbiotics in functional foods: microbial derivatives shaping health, immunity and next-generation nutrition. *Food Frontiers.* 2025;7:1. doi:10.1002/fft2.70205.
- ¹⁴ Salminen S, Collado MC, Endo A, et al. ISAPP consensus statement on the definition and scope of postbiotics. *Nat Rev Gastroenterol Hepatol.* 2021;18:649–667. doi:10.1038/s41575-021-00440-6.
- ¹⁵ Hossain MJ, Alam AN, Kim SH, et al. Techniques and emerging trends in flavor and taste development in meat. *Food Sci Anim Resour.* 2024;45:266–281. doi:10.5851/kosfa.2024.e131.
- ¹⁶ Sandra KS, Vithalkar MP, Beere V, et al. Oligosaccharide prebiotics in functional foods and therapeutics: innovations and challenges. *3 Biotech.* 2026;16:254. doi:10.1007/s13205-026-04776-1.
- ¹⁷ Tolonen AC, Beauchemin N, Bayne C, et al. Synthetic glycans control gut microbiome structure and mitigate colitis in mice. *Nat Commun.* 2022;13:1244. doi:10.1038/s41467-022-28856-x.
- ¹⁸ Zhou P, Chen C, Patil S, Dong S. Unveiling the therapeutic symphony of probiotics, prebiotics, and postbiotics in gut-immune harmony. *Front Nutr.* 2024;11:1355542. doi:10.3389/fnut.2024.1355542.
- ¹⁹ Sajid M, Stone SR, Kaur P. Transforming traditional nutrition paradigms with synthetic biology driven microbial production platforms. *Curr Res Biotechnol.* 2021;3:260–268. doi:10.1016/j.crbiot.2021.07.002.
- ²⁰ Martínez-Porchas M, Medina-Félix D, Vargas-Albores F, et al. Genetic improvement of a synthetic microbiota: a step further? *Front Microbiol.* 2025;16:1619874. doi:10.3389/fmicb.2025.1619874.
- ²¹ Zeng L, Qian Y, Cui X, et al. Immunomodulatory role of gut microbial metabolites: mechanistic insights and therapeutic frontiers. *Front Microbiol.* 2025;16:1675065. doi:10.3389/fmicb.2025.1675065.
- ²² Aggarwal N, Kitano S, Puah GRY, et al. Microbiome and human health: current understanding, engineering, and enabling technologies. *Chem Rev.* 2022;123:31–72. doi:10.1021/acs.chemrev.2c00431.
- ²³ Ahmad Z, Niyazi S, Ganie IB, et al. Enhancing withanolide production in the *Withania* species: advances in in vitro culture and synthetic biology approaches. *Plants.* 2024;13:2171. doi:10.3390/plants13152171.
- ²⁴ Chu LL, Nguyen QH, Tung NH. Microorganisms for ginsenosides biosynthesis: recent progress, challenges, and perspectives. *Molecules.* 2023;28:1437. doi:10.3390/molecules28031437.
- ²⁵ Romero-Suárez D, Keasling JD, Jensen MK. Supplying plant natural products by yeast cell factories. *Curr Opin Green Sustain Chem.* 2021;33:100567. doi:10.1016/j.cogsc.2021.100567.
- ²⁶ Courdavault V, O'Connor SE, Jensen MK, Papon N. Metabolic engineering for plant natural products biosynthesis: new procedures, concrete achievements and remaining limits. *Nat Prod Rep.* 2021;38:2145–2153. doi:10.1039/d0np00092b.
- ²⁷ Mao J, Zhang H, Chen Y, et al. Relieving metabolic burden to improve robustness and bioproduction by industrial microorganisms. *Biotechnol Adv.* 2024;74:108401. doi:10.1016/j.biotechadv.2024.108401.
- ²⁸ Holtz M, Acevedo-Rocha CG, Jensen MK. Combining enzyme and metabolic engineering for microbial supply of therapeutic phytochemicals. *Curr Opin Biotechnol.* 2024;87:103110. doi:10.1016/j.copbio.2024.103110.
- ²⁹ Саданов АК, Бaimakhanova BB, Orasymbet S, et al. Engineering useful microbial species for pharmaceutical applications. *Microorganisms.* 2025;13:599. doi:10.3390/microorganisms13030599.
- ³⁰ Brooks SM, Marsan CB, Reed KB, et al. A tripartite microbial co-culture system for de novo biosynthesis of diverse plant phenylpropanoids. *Nat Commun.* 2023;14:4448. doi:10.1038/s41467-023-40242-9.
- ³¹ Zhang J, Zhou Y, Mei X, et al. Molecular mechanisms and therapeutic potential of tryptophan metabolism in gut-brain signaling transduction: a narrative review. *J Neuroinflammation.* 2026. doi:10.1186/s12974-026-03763-w.
- ³² Xu Y, Wang X, Zhang C, et al. De novo biosynthesis of rubusoside and rebaudiosides in engineered yeasts. *Nat Commun.* 2022;13:3040. doi:10.1038/s41467-022-30826-2.
- ³³ Naseri G. A roadmap to establish a comprehensive platform for sustainable manufacturing of natural products in yeast. *Nat Commun.* 2023;14:1916. doi:10.1038/s41467-023-37627-1.
- ³⁴ Reed KB, Brooks SM, Wells JM, et al. A modular and synthetic biosynthesis platform for de novo production of diverse halogenated tryptophan-derived molecules. *Nat Commun.* 2024;15:3188. doi:10.1038/s41467-024-47387-1.
- ³⁵ Zhao Y, Liu G, Yang F, et al. Multilayered regulation of secondary metabolism in medicinal plants. *Mol Hortic.* 2023;3:11. doi:10.1186/s43897-023-00059-y.
- ³⁶ Götze S, Beemelmans C. Advances in the discovery and functional analysis of anti-infective and immunomodulatory natural products from host-associated microbiomes. *Nat Prod Rep.* 2026. doi:10.1039/d6np00003g.
- ³⁷ Chen X, Yuan C, Jiang H, et al. Current research status and trends in the bioactivity of postbiotics. *Front Food Sci Technol.* 2025;5. doi:10.3389/frfst.2025.1692683.
- ³⁸ Pandey M, Bhati A, Priya KGGLS, et al. Precision postbiotics and mental health: the management of post-COVID-19 complications. *Probiotics Antimicrob Proteins.* 2022;14:426–448. doi:10.1007/s12602-021-09875-4.
- ³⁹ Vinderola G, Duart C, Gosálbez L, et al. Postbiotics in the medical field under the perspective of the ISAPP definition: scientific, regulatory, and marketing considerations. *Front Pharmacol.* 2023;14:1239745. doi:10.3389/fphar.2023.1239745.
- ⁴⁰ Aggarwal S, Sabharwal V, Kaushik P, et al. Postbiotics: from emerging concept to application. *Front Sustain Food Syst.* 2022;6:887642. doi:10.3389/fsufs.2022.887642.
- ⁴¹ Duysburgh C, Miclotte L, Green JB, et al. *Saccharomyces cerevisiae* derived postbiotic alters gut microbiome metabolism in the human distal colon resulting in immunomodulatory potential in vitro. *Front Microbiol.* 2024;15:1358456. doi:10.3389/fmicb.2024.1358456.
- ⁴² Scott E, Paepe KD, Wiele TV de. Postbiotics and their health modulatory biomolecules. *Biomolecules.* 2022;12:1640. doi:10.3390/biom12111640.
- ⁴³ Moghadam SK, Homayouni-Rad A, Shokouhian SMJ, et al. Postbiotics in food, feed, and culture media: mechanisms and applications of microbial metabolites in sustainable systems. *Food Prod Process Nutr.* 2026;8. doi:10.1186/s43014-025-00356-7.
- ⁴⁴ Gabriele M, Fabbri LP, Ventimiglia M, Łepecka A. From waste to worth: the role of fermentation in a sustainable future. *Foods.* 2026;15:664. doi:10.3390/foods15040664.
- ⁴⁵ Guglielmetti S, Boyte ME, Smith C, et al. Commercial and regulatory frameworks for postbiotics: an industry-oriented scientific perspective for non-viable microbial ingredients conferring beneficial physiological effects. *Trends Food Sci Technol.* 2025;163:105130. doi:10.1016/j.tifs.2025.105130.
- ⁴⁶ Gumulya Y, Peng H, Ebert BE, et al. Advancing Australia's food future: opportunities and challenges in precision fermentation. *Future Foods.* 2025;11:100630. doi:10.1016/j.fufo.2025.100630.
- ⁴⁷ Nielsen M, Meyer AS, Arnau J. The next food revolution is here: recombinant microbial production of milk and egg proteins by precision fermentation. *Annu Rev Food Sci Technol.* 2024;15:173–187. doi:10.1146/annurev-food-072023-034256.



Fine Foods at CPHI 2026: The Power of Technological Innovation, Science And Industrial Expertise

At CPHI, the leading international industry event held in Milan from 6-8 October this year, Fine Foods Group demonstrated how it brings together scientific expertise, proprietary technologies and industrial capabilities to deliver customer value. The company's presence at the event centred on the distinctive strengths of its solutions: sustained investment in production capacity, high-calibre technical and scientific expertise, proprietary technology engineering and rigorous scientific validation.

This structured approach reflects the company's ongoing evolution towards a Contract Solutions Development & Manufacturing Organization (CSDMO) model. The Group is a "Solutions Provider", supporting customers across the entire product lifecycle and translating market needs and complex formulation challenges into practical industrial solutions.

Expanded industrial capacity

At CPHI, Fine Foods showcased its industrial plat-

form's expansion, driven by recent investments to increase capacity production at its existing Pharma site and integrate the newly acquired facility. This last development has broadened the company's capabilities to include liquid and semi-solid pharmaceutical forms.

Together with the Cosmetics' expansion and the planned Nutra development, the Pharma division's growth further strengthens the Group's established technological and manufacturing expertise. It gives partners access to a more flexible and versatile development and production platform, equipped to re-





spond rapidly to complex and evolving market demands.

Proprietary technologies and innovation platforms

At CPHI, Fine Foods demonstrated how its capacity to advance technology within the nutraceutical sector translates into practical innovation, showcasing two proprietary solutions:

- **WETSOL™ MATRIX:** a patent-pending technology developed to address the wettability, solubility and dispersion challenges associated with certain powdered active ingredients. By enhancing formulation performance and the end consumer experience, WETSOL™ MATRIX demonstrates Fine Foods' contribution as a scientific and formulation development partner which is well beyond manufacturing.
- **NEXTCAPS®:** a cutting-edge proprietary technology engineered to overcome the structural limitations of conventional capsules. By combining different ingredients and physical forms within a single capsule, NEXTCAPS® shows how Fine Foods can turn an established pharmaceutical dosage form into a versatile innovation platform, delivering tangible benefits in component stability, active ingredient concentration, modified release and consumer compliance.

Scientific validation through a science-driven approach

At the event, Fine Foods highlighted the science-driven approach underpinning its Research and Development activities by presenting new *in vitro* studies on a supplement formulation from the **Biotic3®** range. Combining prebiotics, probiotics and postbiotics in a synergistic, optimised formulation,

the product exemplifies the company's rigorous end-to-end development process, from careful raw material selection to full scientific validation of the final formula.

The evolution of Companion Solutions in the GLP-1 era

As the market for GLP-1 therapies continues to evolve, Fine Foods presented a forward-looking, practical approach at CPHI centred on people's needs: **Companion Solutions**. This integrated portfolio of nutraceutical and cosmetic solutions is designed to specifically address actual needs at each stage of the therapeutic journey. The strategic approach extends beyond weight loss and primary metabolic support to address the broader person experience through an **"IN&OUT"** model: from helping to mitigate side effects and sustain outcomes to supporting aesthetic wellbeing.

By bringing together expertise across its Pharma, Nutra and Cosmetics BUs, Fine Foods strengthens its position as a strategic, high-value partner for the integrated management of health and wellbeing.



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The Gut–Stress Axis and Adaptogenic Resilience

Stress does not stay in the head. It reaches the gut, and the gut answers back. The Gut–Stress Axis is a new framework for understanding that conversation, and for supporting resilience, health and wellbeing at both ends of it.

AUTHOR:

Liki von Oppen-Bezalel,
Ph.D., Chief Scientific
Officer, TriNutra

The Gut–Stress Axis: reconnecting the dots

The Gut–Stress Axis, a term introduced by TriNutra, describes the two-way loop that links the body's stress-hormone system to the balance of the gut microbiome. It builds on the established gut–brain axis but puts stress physiology at the center: how cortisol reshapes gut bacteria, and how those bacteria in turn shape mood, immunity and the stress response itself.

The framework matters because most stress-support strategies address only one side. Products for calm and sleep target the hypothalamic–pituitary–adrenal (HPA) axis; probiotics target the gut. Under chronic stress, however, each side keeps restarting the other.

How the loop works

- 1. HPA activation.** Sustained stress keeps cortisol elevated, dampening immune readiness and eroding sleep quality.
- 2. Microbiome disruption.** Stress-driven hormonal shifts alter gut composition. Beneficial commensals decline and opportunistic species gain ground.
- 3. Gut–brain feedback.** An imbalanced microbiome signals back on mood, mucosal immunity and HPA

tone.

- 4. Self-reinforcement.** Each side amplifies the other, so physical and psychological strain persist.

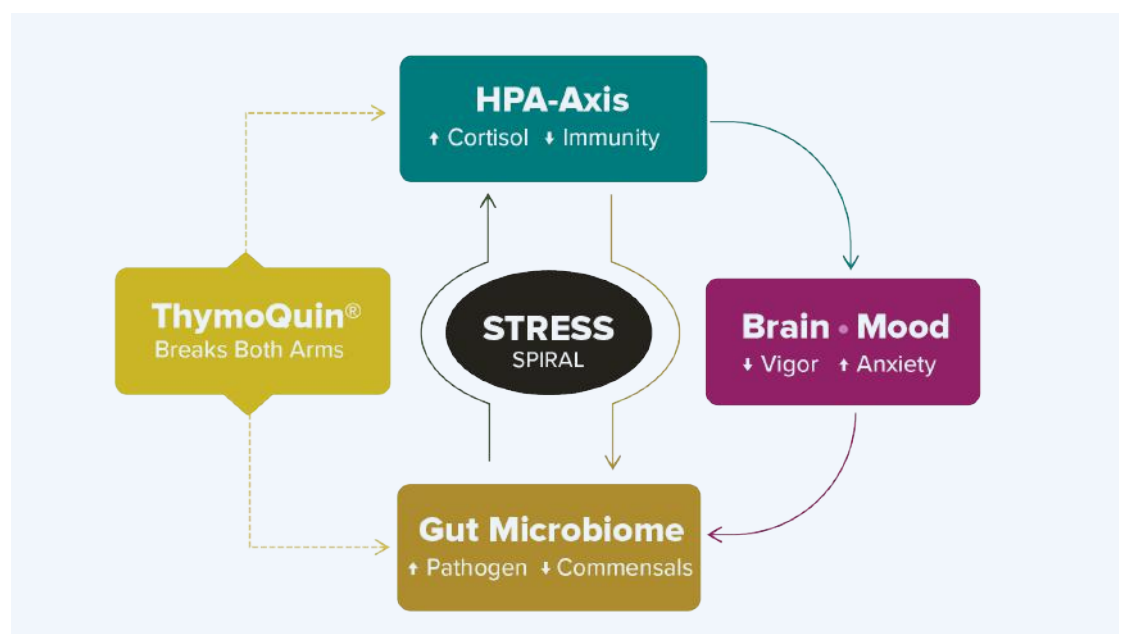
Recalibrating the axis therefore means acting on both sides at once: supporting a balanced stress-hormone response while restoring a healthy microbial community.

ThymoQuin has been shown to simultaneously act on recalibrating and balancing the spiraling biofeedback loop that the stress response and gut microbiome have on each other and on our well-being.

ThymoQuin®: a premium USP standardized tool for the axis

Black seed (*Nigella sativa*) has been used as a general tonic in Unani, Islamic and Ayurvedic medicine for at least 2000 years. Its key constituent, thymoquinone (TQ), shows antioxidant and anti-inflammatory activity in pre-clinical research, including effects on NF-κB signaling and cytokines such as IL-6 and TNF-α¹.

ThymoQuin® is a patented, cold-pressed, full-spectrum USP black seed oil. It is standardized to at least 3% thymoquinone (TQ), more than 1% p-cymene, and no more than 1.25% free fatty acids, meeting the USP monograph standards for black seed oil². That preci-



sion matters on the Gut–Stress Axis because, as the data below show, its hormetic effects on gut bacteria depend strongly on concentration.

Recalibrating both sides of the axis

Four ThymoQuin® studies, three in humans at 500 mg/day and one in the laboratory, map onto the loop.

The gut side: selective support for beneficial bacteria. A 2026 laboratory study tested three ThymoQuin® batches against four gut species³. At intermediate concentrations (0.125–0.5%), the oil:

- stimulated *Streptococcus thermophilus*, an immune-regulating lactic acid bacterium, up to 53-fold
- preserved the probiotic *Lactiplantibacillus plantarum*
- largely spared the mucin-associated commensal *Akkermansia muciniphila*
- inhibited the opportunistic *Klebsiella pneumoniae* by more than 94%

At 1% and above, selectivity was lost, and the effect became broadly antimicrobial: a “less is more” profile.

Gut and stress together: athletes under strain.

In a double-blind, placebo-controlled trial, 37 marathon and half-marathon runners took ThymoQuin® or placebo for 4 weeks around a race⁴. Fecal *S. thermophilus*, the same species stimulated in the laboratory, was 66% higher in the supplemented group. After competition, salivary cortisol was 44% lower, global mood 11% better and upper-respiratory tract complaints 62% fewer in the ThymoQuin group. No adverse events were reported. Here the axis becomes visible in people: microbiome and stress-hormone changes in the same individuals, under the same stressor.

The stress side: everyday pressure. In an 8-week randomized, placebo-controlled trial in moderately stressed adults, ThymoQuin® significantly improved sleep quality (PSQI, about 31%, $p = 0.02$) and vigor (POMS Vigor, about 27%, $p = 0.04$)⁵. Cortisol trended about 23% lower and DHEA about 10% higher, improving the stress resilience DHEA: cortisol ratio by about 29%. These hormone shifts were consistent in direction but not statistically significant.

Not beyond the axis, stress and blood pressure entangled – an open-label 6-week study in 20 adults with mildly elevated blood pressure saw systolic and diastolic values fall by 11.2% and 12.2%, with onset at 48 hours⁶.

From a balanced axis to adaptogenic resilience

A recalibrated Gut–Stress Axis connects naturally to the older concept of the adaptogen. Brekhman and Dardymov defined adaptogens by three criteria: non-specific resistance to many stressors, a normalizing effect on disturbed physiology, and safety⁷. Modern research links adaptogens to HPA-axis modulation and to hormesis, in which a mild challenge trains protective responses^{8–10}.

ThymoQuin® has been studied under both physical and psychological stress, with benefits built gradually over 4–8 weeks without stimulant or sedative effects, and it was well tolerated^{4,5}. Its biphasic effect on gut bacteria is itself a hormetic pattern^{3,10}.

The Gut–Stress Axis adds a new dimension: adaptogenic resilience that extends to the microbiome.

What this means for formulators

- **One ingredient, both sides.** ThymoQuin® is a science-based story for stress, sleep, and gut-health products alike.
- **Probiotic compatibility.** Preservation of *L. plantarum* and *A. muciniphila* and stimulation of *S. thermophilus* point to synbiotic combinations worth exploring³.
- **Standardization as a differentiator.** Because microbiome effects depend on concentration, consistent composition matters more than for many botanicals.

Stress resilience is not only a matter of the adrenal glands. The Gut–Stress Axis frames it as a two-way, biofeedback loop between stress hormones and the microbiome, and ThymoQuin is among the first clinically validated supplements to recalibrate the HPA (stress) axis and selectively rebalance the gut microbiome, at a single 500 mg/day dose. With consistent signals for selective microbiome support, sleep, vitality, and immune resilience, ThymoQuin® stands out as an emerging, clinically studied superior adaptogen for the axis.

Disclosure: *The ThymoQuin® studies cited were funded in part by TriNutra Ltd. This article is for educational purposes and is not medical advice.*

References:

- ¹ Ahmad MF, Ahmad FA, Ashraf SA, et al. An updated knowledge of black seed (*Nigella sativa* Linn.): review of phytochemical constituents and pharmacological properties. *J Herb Med.* 2021;25:100404. doi:10.1016/j.jhermed.2020.100404
- ² TriNutra. ThymoQuin®: The Ancient, Modern Day Adaptogen [white paper]. TriNutra Ltd.; March 2026.
- ³ Stal Papini F, Zettner N, Sawas S, Roth C, Bäumer L. Less is more: hormetic and selective antimicrobial activity of a thymoquinone-standardized black seed oil ThymoQuin® in gut microbiota models. *bioRxiv preprint and in press in Food Science & Nutrition.* 2026 May 10. doi:10.64898/2026.05.10.724082
- ⁴ Talbott SM, Talbott JA. Effect of ThymoQuin black cumin seed oil as a natural immune modulator of upper-respiratory tract complaints and psychological mood state. *Food Sci Nutr Res.* 2022;5(1):1–6. doi:10.33425/2641-4295.1057. ClinicalTrials.gov NCT05508529.
- ⁵ Talbott SM, Talbott JA. Supplementation with proprietary and patented black seed oil improves stress resilience in moderately stressed adults: an 8-week randomized, placebo-controlled study. *EC Nutrition.* 2026;21(3):01–09.
- ⁶ Bush B, Peña T, Bush R, Zelkha M, Lamensdorf I. Effects of standardized black seed oil cold press supplement over a six-week period on blood pressure and heart rate in healthy patients: a non-randomized clinical trial. *Food Sci Nutr Res.* 2020;3(1):1–5.
- ⁷ Brekhman II, Dardymov IV. New substances of plant origin which increase nonspecific resistance. *Annu Rev Pharmacol.* 1969;9:419–430. doi:10.1146/annurev.pa.09.040169.002223
- ⁸ Panossian A, Wikman G. Effects of adaptogens on the central nervous system and the molecular mechanisms associated with their stress-protective activity. *Pharmaceuticals (Basel).* 2010;3(1):188–224. doi:10.3390/ph3010188
- ⁹ Panossian A. Understanding adaptogenic activity: specificity of the pharmacological action of adaptogens and other phytochemicals. *Ann N Y Acad Sci.* 2017;1401(1):49–64. doi:10.1111/nyas.13399
- ¹⁰ Mattson MP. Hormesis defined. *Ageing Res Rev.* 2008;7(1):1–7. doi:10.1016/j.arr.2007.08.007
- ¹¹ European Medicines Agency, Committee on Herbal Medicinal Products. Reflection paper on the adaptogenic concept. EMEA/HMPC/102655/2007. London: EMA; 2008.



Cope better. Wake better.

Why the best sleep formulas are really stress formulas, and two ingredients built for both.

By: Silma Subah, Clinical Affairs Manager, Saanroo.

Stressed spelled backwards is desserts, and life is sweet only with a good night's sleep. A pillow is hardly ever blamed for a restless night. It is the full inbox, the commute, the life-altering meeting, or the conversation that is replayed at 2 a.m. that keeps us wide awake. Stress and sleep share the same wiring – an overactive stress response keeps the brain alert when it should be winding down, leading to a short night that leaves the body unable to cope the next day. So, when we treat sleep and stress as separate categories, we miss out on how people experience them.

This very insight is reshaping how brands formulate ingredients. Melatonin still dominates the shelf, but consumers now want more: support they can use through a demanding week, not just at lights-out, and no fog the following morning. Saanroo has the answer to this 'more' with two clinically studied ingredients that work upstream, on mood and stress resilience, as well as at bedtime.

Saffron, standardized: Affron®

Saffron has a long history of traditional use for mood. Affron® brings that tradition into the clinic, with thirteen published human studies across adolescents, adults and seniors. In one such study with 128 healthy adults with occasional stress, 28 mg of Affron® daily for four weeks improved mood and alleviated symptoms of stress and anxiety¹. In another study, 14 mg dose of Affron® twice daily for 28-days in 55 adults significantly improved restorative sleep quality, reduced insomnia severity and exhibited an increasing trend in alertness upon waking and in evening melatonin². For formulators, 14 mg is small enough to disappear into a gummy or stick pack.

PEA, made bioavailable: Levagen®+, the endocannabinoid route

PEA is a lipid that the body already makes to help restore balance. It works alongside the endocannabinoid system, which helps regulate stress, comfort and rest. Standard PEA is poorly absorbed, so Levagen®+ uses LipiSpense® cold-water dispersion to roughly double the plasma levels. In one clinical trial, in 103 adults with disturbed sleep, 350 mg of Levagen®+ before bed for eight weeks shortened the time to fall asleep. Participants also felt fully awake sooner and thought more clearly in the morning³. A separate trial in stressed university students linked 600 mg/day of Levagen®+ to improved heart rate variability, an objective marker of how well the nervous system handles pressure⁴.

Design for the full 24 hours

Pharmactive's Affron® and Saanroo's Levagen®+ complement rather than duplicate each other. Affron® works on mood and the body's sleep signal. Levagen®+ works through the endocannabinoid system on stress resilience and sleep onset. That supports three clear product concepts: a daytime calm formula, a melatonin-free nighttime blend, or a day-and-night duo sold together. Low doses and LipiSpense® dispersibility make room for shots, effervescent, gummies and beverages.

The takeaway for brands is simple. Consumers don't want to be knocked out. They want to cope better and wake up well. Support the stress, and the sleep has somewhere to start.

References:

1. Kell, G., Rao, A., Beccaria, G., Clayton, P., Inarejos-García, A. M., & Prodanov, M. (2017). Affron® a novel saffron extract (*Crocus sativus* L.) improves mood in healthy adults over 4 weeks in a double-blind, parallel, randomized, placebo-controlled clinical trial. *Complementary therapies in medicine*, 33, 58-64.
2. Lopresti, A. L., Smith, S. J., Metse, A. P., & Drummond, P. D. (2020). Effects of saffron on sleep quality in healthy adults with self-reported poor sleep: a randomized, double-blind, placebo-controlled trial. *Journal of Clinical Sleep Medicine*, 16(6), 937-947.
3. Rao, A., Ebelt, P., Mallard, A., & Briskey, D. (2021). Palmitoylethanolamide for sleep disturbance. A double-blind, randomised, placebo-controlled interventional study. *Sleep Science and Practice*, 5(1), 12.
4. Deb, S. K., Kim, N., Parolin, B., Renshaw, D., & Zariwala, M. G. (2025). The effects of formulated palmitoylethanolamide supplementation on indicators of stress and heart rate variability in female university students: a randomised cross-over trial. *Frontiers in Nutrition*, 12, 1586409.

* The Food and Drug Administration has not evaluated these statements. This product is not intended to diagnose, treat, cure, or prevent any disease.

** Affron® is registered trademark of Pharmactive Biotech Products.

** Levagen®+ is a registered trademark of Saanroo.

Good morning, sunshine. Good nights start in the daytime

*Clinically studied support for the
stress-sleep connection.*

Affron[®]

*Saffron, standardized for positive mood. With over 13 scientific studies, it is the most clinically backed saffron extract worldwide, that supports mood, manages occasional stress, and promotes restorative sleep at just 14-28 mg/day.**

Levagen[®]+

*Palmitoylethanolamide (PEA), the body's own balancing lipid. Made bioavailable with Lipisperse[®], it is clinically shown to help adults fall asleep faster and wake up clearer.**



Zynamite® Delivers Rapid Cognitive and Mood Benefits Without Caffeine

New clinical research confirms the fast-acting effects of Nektium's water-soluble mango leaf extract on cognitive performance, mental focus and mood.

A clinical trial has confirmed the fast-acting cognitive and mood benefits of Nektium's water-soluble Zynamite® mango leaf extract, providing further clinical evidence for its potential as a caffeine-free solution for cognitive and mental performance support.

In the functional beverage and dietary supplement markets, consumer demand is increasingly shifting away from high-stimulant, high-caffeine formulations toward more balanced products that combine sustained energy with cognitive support.¹

Zynamite® is an award-winning, non-stimulant alternative to caffeine that is designed to deliver cognitive and energy-related benefits without the unwanted effects commonly associated with high caffeine intake, such as jitters, crashes or sleep disturbances.

Clinical testing conducted in 2025 showed that a single 100 mg dose of Zynamite® provided sustained improvements in mental focus and emotional balance.²

A new study, published in *Pharmaceuticals*, was designed to replicate and validate these earlier findings.³ The results reproduced the acute benefits observed previously in a healthy young adult popula-

tion, demonstrating a rapid onset of action as well as sustained improvements in cognitive performance and mood over a five-hour period.

Ana Beltrán, PhD, Project Manager – Research, Development & Innovation at Nektium, commented: "In nutritional science, showing an ingredient delivers consistent results across multiple gold standard clinical trials is critical. This confirmatory study reinforces our earlier findings, strengthening Zynamite®'s scientific foundation and credibility with regulators, brand managers, and consumers. It firmly positions Zynamite® as an evidence-backed, caffeine-free solution for fast-acting, non-stim energy and cognitive support."

Randomized, double-blind, placebo-controlled study

The randomized, double-blind, placebo-controlled, crossover replication study involved 88 healthy university students aged 18–25 years who were experiencing exam-time stress. Participants received a single 100 mg dose of water-soluble Zynamite® (Zynamite® S) or placebo.

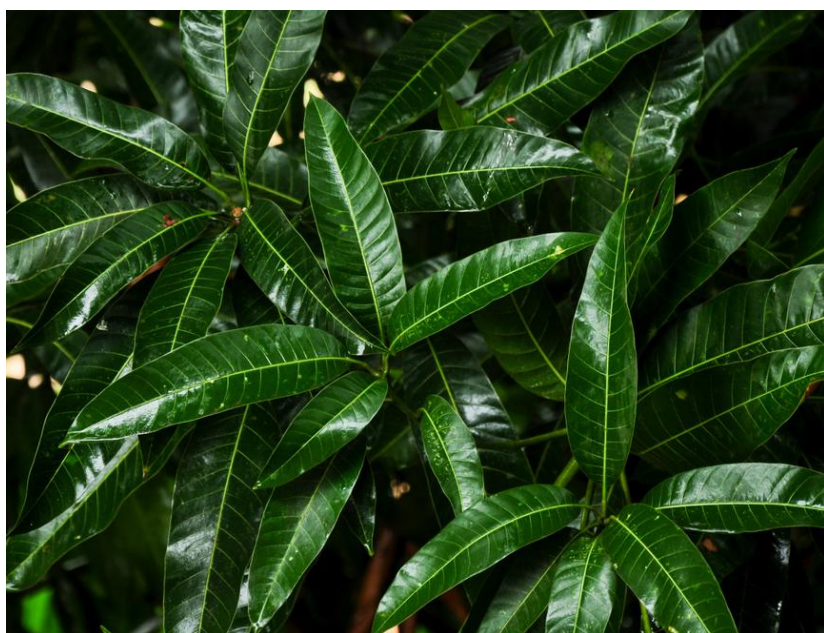
The researchers assessed cognitive performance using established neuropsychological tests, including the Trail Making Test (TMT), Digit Symbol Substitution Test (DSST) and Stroop Color Word Test. The results again demonstrated statistically significant acute improvements compared with both baseline and placebo across several areas of cognitive performance.

The findings showed significant improvements in several key cognitive domains.

Psychomotor speed significantly improved at all assessment time points compared with baseline, including an improvement of 30% at three hours and 25% at five hours. Zynamite® also demonstrated significant improvements compared with placebo at all time points.

Executive function and cognitive flexibility significantly improved compared with baseline, with improvements of 24% at three hours and 21% at five hours. The results were also statistically significant compared with placebo at these time points.

Processing speed significantly improved from baseline by 14% at three hours and 17% at five hours. Significant improvements compared with placebo were also observed at all assessment time points.



Selective attention significantly improved from baseline by 5% at five hours.

Positive effects on mood and emotional balance

In addition to cognitive performance, the researchers observed a positive acute effect on emotional balance, assessed using the Profile of Mood States (POMS) and Total Mood Disturbance (TMD) scales.

Overall mood state improved by 24% at three hours and by a further 24% at five hours compared with baseline, with Zynamite® demonstrating a significant advantage over placebo at all assessment time points.

The study also showed improvements in specific mood parameters. Compared with baseline, **tension** was reduced by 31% at three hours and by 25% at five hours, while **depression** was reduced by 24% at three hours and 23% at five hours.

Compared with placebo, Zynamite® maintained a significant advantage for tension reduction at 30 minutes and three hours, while a significant advantage for depression reduction was observed at three and five hours.

A marked and statistically significant **reduction in fatigue** was observed at all assessed time points compared with baseline, including a 26% reduction at three hours and 26% at five hours. Significant differences were also observed compared with placebo.

Importantly, the positive effects on mood were already detectable at the first assessment, 30 minutes after supplementation, supporting the ingredient's rapid onset of action.

Potential for next-generation cognitive and mood products

David Fuentes, PhD, Nektium's Project Manager – Research, Development & Innovation, said: "We are delighted with the outcome of this replication trial. Zynamite® is a versatile, experiential ingredient capable of powering next-generation mind and mood products, including caffeine-free and hybrid caffeine-reduction formulations. Its neutral taste profile and instant water solubility make it an ideal active ingredient for functional beverages, energy shot alternatives, gummies, sticks, capsules, and tablets."

The new clinical findings further support Zynamite®'s positioning as a fast-acting, caffeine-free ingredient for products targeting cognitive performance, mental focus, energy and mood. The replication of previously observed effects in a randomized, double-blind, placebo-controlled crossover study adds further evidence to the ingredient's scientific foundation and its potential applications across a range of supplement and functional food formats.

References:

¹ Reference cited in the original source material.

² Clinical testing conducted in 2025, as cited in the original source material.

³ Study published in Pharmaceuticals, as cited in the original source material.

B2B Events Calendar 2026/2027

2026



26-30 October, Las Vegas
<https://www.supplysideglobal.com/>



9 November, London
<https://sportsnutritionsummit-europe.com>



10-11 November, London
<https://nutrahealthspansummit.com>



17-19 November, Frankfurt
<https://www.figlobal.com/europe/attend/registration/>



25-26 November, Milan
<https://www.in-vitality.it/>

2027



9-11 February, Berlin
<https://probiotaevent.com>



18-20 March, Bologna
<https://www.cosmoprof.com/>



6-8 April, Barcelona
<https://www.in-cosmetics.com/>



13-15 April, Warsaw
<https://nutrafood.pl/en/>



1-3 June, Warsaw
<https://pcidays.pl/en/>

Consumers Seek Targeted Health And Beauty Solutions

Women across Asia-Pacific are taking a more proactive approach to health, beauty and nutrition, with their priorities evolving significantly across different stages of life. New research from Lubrizol highlights the growing demand for tailored, science-backed solutions that support wellbeing, confidence and healthy ageing from early adulthood through later life.

Women in Asia-Pacific are adopting increasingly proactive approaches to health, beauty and nutrition, although many feel underserved by current supplement markets, research has found.

The insights form part of a new White Paper from Lubrizol, a global leader in science-backed nutraceutical solutions specializing in microencapsulation platforms. Drawing from consumer research across China, Korea and Indonesia, it explores women's health, beauty and nutrition needs at different stages of their lives, identifying opportunities for innovation.

The research finds that women across Asia are prioritizing long-term wellbeing and quality of life over short-term fixes. It also shows that their concerns shift significantly with time, and identifies distinct needs at four different life stages:

- **Active Life & Career** (ages 20-39): Focusing on en-

ergy, confidence and momentum, women at this stage are highly open to prevention-led solutions, and willing to invest in products from brands they trust, the White Paper says.

- **Family Planning & Motherhood** (ages 20-39): This stage is characterized by a greater emphasis on reassurance, transparency and simplicity. Products that remove uncertainty and simplify decision-making have the greatest potential to earn trust.
- **Midlife Transition** (ages 40-55): Rather than pursuing transformation, women at this stage are often seeking reassurance that they can continue feeling like themselves through a period of change. Needs around balance, sleep, daily energy and skin resilience are common.
- **Healthy Longevity** (ages 55+): Women at this stage demonstrate the strongest willingness to invest in solutions that preserve capability, inde-



pendence and quality of life.

Across all life stages, the research observes a consistent aspiration to live confidently, actively and independently for longer. However, opportunities for targeted innovation are also clear. In China, for example, 87% of respondents preferred solutions tailored to their current life stage, while 66% felt underserved by the options currently available to them.

Bernardo Medeiros, Global Vice President, Lubrizol Life Science, and Vice President, Latin America, Lubrizol, said: "Women's health and beauty needs are evolving. Across Asia Pacific, and particularly in China, we are seeing a fundamental shift from reactive care to proactive wellbeing. Consumers are no longer waiting for problems to emerge. They are investing earlier, seeking solutions that help them maintain confidence, vitality, and quality of life throughout every stage of their journey."

Other findings in the White Paper include:

- Beauty and nutrition are increasingly interconnected, as consumers embrace a more holistic view of wellbeing that links inner health with outward experience.
- Consumers in China had a particularly strong prevention-led mindset, with a proactive wellness index of 34%.
- Consumers in China prioritized beauty more highly than those in Korea and Indonesia, and also

demonstrated more proactive beauty management behaviors.

- In China, the focus on beauty from within increased with age: the percentage of women considering supplement intake for long-term prevention rose from 33% at the Active Life & Career stage to 52% at the Healthy Longevity stage.
- Visibility of results was a powerful driver of adoption, with 62% of respondents citing noticeable benefits as a key reason to continue using a product.

Bernardo Medeiros added: "Beauty, wellness and healthy aging can no longer be viewed as separate categories. Consumers increasingly expect integrated, science-backed solutions that support them through life's transitions, with benefits that are relevant, effective and trusted. Our challenge is clear: to innovate beyond products and create solutions that address the changing needs of women at every life stage. Those who succeed will not only meet today's expectations but help shape the future of women's wellbeing across the region."

Download the White Paper from:

<https://tinyurl.com/32vddfcw>

For more information:

www.lubrizol.com/Health/Nutraceuticals



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Sourcing Challenges in the Ashwagandha Supplement Industry

Ashwagandha has become one of the most prominent adaptogenic ingredients in the global supplement market. But in 2026, sourcing *Withania somnifera* is becoming increasingly complex - not simply because of supply, but because of changing requirements around plant part, quality, traceability and regulatory compliance.

AUTHOR:
The NMC Editorial Team

The surge in global demand for *Withania somnifera* has created a profound supply-demand gap, as annual production of approximately 1,500 tons falls significantly short of the 7,000 tons required by the international market¹.

This shortfall is exacerbated by the fact that the plant's commercial value relies on specific bioactive withanolides, yet current cultivation yields are insufficient to meet the escalating requirements of the supplement sector².

Furthermore, the industry's heavy reliance on root-based extracts—which contain the highest concentration of therapeutic phytochemicals—has placed undue pressure on root harvesting, even as research indicates that aerial plant parts also possess significant bioactive metabolites³. Diversifying the raw material input to include leaves could alleviate this harvest strain, particularly as recent studies have identified at least 62 distinct metabolites within the foliage that complement the therapeutic profile of root-derived extracts⁴.

However, the lack of standardised protocols for integrating these aerial components currently limits their widespread adoption in commercial nutraceutical production.

Beyond raw material sourcing, the industry must also address the variable quality of marketed extracts, as clinical efficacy depends heavily on the precise concentration of withanolides⁵.

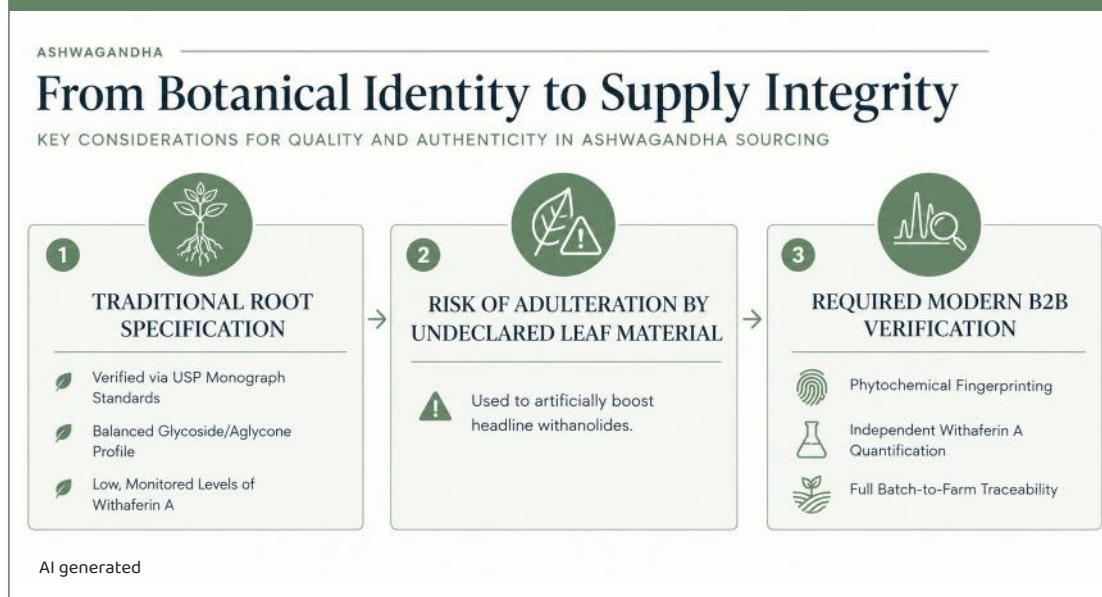
The regulatory great divide: roots vs. leaves

While traditional Ayurvedic practices have long prioritised root-based applications, contemporary regulatory frameworks are only beginning to establish the rigorous, GLP-compliant safety data necessary to validate the whole-plant or leaf-inclusive extracts⁶.

India is the world's primary producer and exporter of ashwagandha. In April 2026, India's food regulator FSSAI advised food businesses that only ashwagandha roots and root extracts should be used, excluding leaves and leaf extracts. The Ministry of Ayush issued a similar directive for Ayush products, citing safety concerns related in particular to the higher concentrations of certain reactive withanolides, including withaferin A, reported in leaves.



Figure 1



The development immediately created uncertainty for manufacturers working with leaf or whole-plant extracts. Although the Karnataka High Court subsequently granted an interim stay concerning the FSSAI restriction for the petitioning companies, the wider regulatory situation remains unsettled.

The safety rationale

This coordinated regulatory clampdown was triggered by mounting concerns regarding the safety profiles of aerial plant parts. Ashwagandha leaves naturally exhibit significantly higher concentrations of withanolides – specifically withaferin A – compared to the traditional, centuries-verified root material.

Withaferin A, a compound that some stakeholders argue has a narrower safety margin, while others say existing research does not support safety concerns at typical usage levels. Ultimately, the ongoing debate regarding the safety profile of these phytochemicals underscores the critical need for more robust, standardised clinical research to reach a consensus on appropriate dosages and potential drug interactions⁷.

Authentication overhaul: beyond total withanolides

For ingredient buyers, compliance is only one side of the coin. The shift toward authenticated, root-only material fundamentally alters quality assurance paradigms.

Historically, many high-volume buyers evaluated ashwagandha purely on total withanolide content via basic spectrophotometric or high-performance liquid chromatography (HPLC) assays. This metric alone is no longer an adequate indicator of authenticity. Crude spectrophotometric assays fail to distinguish between individual bioactive steroidal lactones, necessitating a transition toward mass spectrometry-based metabolomics for more precise phytochemical characterisation⁸.

Because lower-cost, high-yielding leaf and aerial materials are naturally dense in withanolides, un-

scrupulous or low-tier suppliers can easily utilise leaf material to artificially inflate analytical results while labelling the product as "root extract". Consequently, advanced analytical validation—such as precise fingerprinting of specific withanolide markers (glycosides vs. aglycones) and independent quantification of withaferin A – is now required to detect undeclared aerial adulteration.

This move toward sophisticated bioanalytical methods is essential for navigating the challenges of isomerism and isobaric interference that historically obscured the accurate quantification of these complex constituents⁹.

International market access and the pesticide imperative

Strict adherence to rigorous pesticide residue limits – often dictated by stringent European and North American import standards – is becoming the primary barrier for exporters struggling to reconcile traditional smallholder farming practices with global food safety requirements¹⁰.

To bridge this gap, suppliers are increasingly transitioning toward controlled-environment agriculture and vertical farming techniques that eliminate soil-borne contaminants while simultaneously enhancing metabolic consistency^{11,12}.

B2B sourcing checklist: the supplier qualification framework

Fulfilling quality requirements in this climate means moving beyond the standard, static Certificate of Analysis (CoA). Procurement and Quality Assurance teams must implement a structured vetting matrix for all ashwagandha suppliers (Table 1).

From price-driven sourcing to strategic risk management

The structural disruption facing ashwagandha highlights a permanent paradigm shift across the broader nutraceutical industry. Procurement strate-

Table 1 B2B Sourcing checklist

EVALUATION VECTOR	AUDIT CRITERION & TARGET STANDARD
Botanical Composition	Demand explicit declaration of plant part composition. Is it 100% root , leaf-derived, or a deliberate whole-plant blend?
Geographical Lineage	Map the exact agricultural source. Where was the biomass cultivated, harvested, and subsequently extracted?
Identity Validation	Verify the exact analytical methodology used for botanical identification (e.g., HPTLC, DNA barcoding).
Withanolide Profiling	Determine how total withanolides are quantified. Does the method distinguish between active therapeutic components and fillers?
Targeted Toxin Testing	Ensure independent, third-party quantification of Withaferin A to rule out unapproved leaf spiking.
Contaminant Screening	Mandate full-spectrum testing for heavy metals, mycotoxins, and emerging pesticide panels (specifically matching the EU POPs 0.01 mg/kg chlorpyrifos standard).
Chain of Custody	Require end-to-end, batch-specific traceability from the raw agricultural collective to the final powder or liquid extract.
Destination Compliance	Confirm cross-border alignment with target jurisdictions (e.g., verifying daily dosage ceilings or national restrictions across EU member states).

gy can no longer rely on a cost-per-kilogram commoditization model.

Authenticity, validated analytical methods, unasailable chain-of-custody documentation, and regulatory resilience are no longer optional value-adds; they are part of the ingredient specification.

For premium brands looking to protect market share, avoid costly product recalls, and maintain consumer trust, the takeaway is absolute: Qualifying and auditing your ingredient supplier is now just as critical as qualifying the ingredient itself.

By establishing direct partnerships with agricultural cooperatives, manufacturers can implement localised monitoring systems that ensure transparency from seedling to extract.

This integrated supply chain model effectively internalises the costs of quality assurance, protecting firms against the systemic supply shocks that often disrupt the procurement of high-potency raw materials. Moreover, the adoption of blockchain-based traceability platforms allows for the real-time verification of geographic origin and harvest methodology, further insulating supply chains from fraudulent labelling and sub-standard sourcing practices.

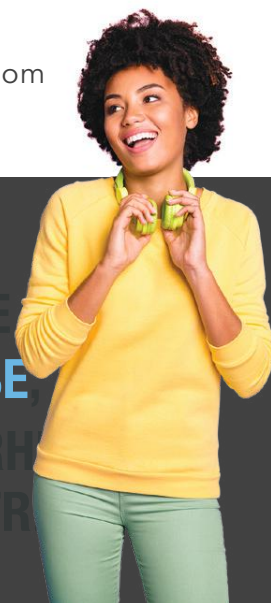
References:

- ¹ Afewerky, H. K., Ayeni, E. A., Tiarniyu, B. B., Orege, J. I., Okeke, E. S., Oyejobi, A. O., Bate, P. N. N., & Adeyemi, S. B. (2021). Critical review of the *Withania somnifera* (L.) Dunal: ethnobotany, pharmacological efficacy, and commercialization significance in Africa. *Bulletin of the National Research Centre/Bulletin of the National Research Center*, 45(1), 176. <https://doi.org/10.1186/s42269-021-00635-6>
- ² Xing, Z., Su, A., Li, M., Zhang, Y., He, T., Qiu, Y., Wei, T., Li, Z., Zhu, J., & Wu, W. (2023). Withaferin A: A Dietary Supplement with Promising Potential as an Anti-Tumor Therapeutic for Cancer Treatment - Pharmacology and Mechanisms. *Drug Design Development and Therapy*, 2909–2929. <https://doi.org/10.2147/ddt.s422512>
- ³ Bhat, J. A., Akther, T., Najjar, R. A., Rasool, F., & Hamid, A. (2022). *Withania somnifera* (L.) Dunal (Ashwagandha): current understanding and future prospect as a potential drug candidate. *Frontiers in Pharmacology*, 13, 1029123. <https://doi.org/10.3389/fphar.2022.1029123>

- ⁴ Gaurav, H., Yadav, D., Maurya, A., Yadav, H., Yadav, R., Shukla, A. C., Sharma, M., Gupta, V. K., & Palazón, J. (2023). Biodiversity, Biochemical Profiling, and Pharmacocommercial Applications of *Withania somnifera*: A Review. *Molecules*, 28(3), 1208. <https://doi.org/10.3390/molecules28031208>
- ⁵ Paul, S., Chakraborty, S., Anand, U., Dey, S., Nandy, S., Ghorai, M., Saha, S. C., Patil, M. T., Kandimalla, R., Proćkó, J., & Dey, A. (2021). *Withania somnifera* (L.) Dunal (Ashwagandha): A comprehensive review on ethnopharmacology, pharmacotherapeutics, biomedicinal and toxicological aspects. *Biomedicine & Pharmacotherapy*, 143, 112175. <https://doi.org/10.1016/j.biopha.2021.112175>
- ⁶ Balkrishna, A., Sinha, S., Srivastava, J., & Varshney, A. (2022). *Withania somnifera* (L.) Dunal whole-plant extract demonstrates acceptable non-clinical safety in rat 28-day subacute toxicity evaluation under GLP-compliance. *Scientific Reports*, 12(1), 11047. <https://doi.org/10.1038/s41598-022-14944-x>
- ⁷ Alanazi, H. H., & Elfaki, E. M. (2023). The immunomodulatory role of *withania somnifera* (L.) dunal in inflammatory diseases. *Frontiers in Pharmacology*, 14, 1084757. <https://doi.org/10.3389/fphar.2023.1084757>
- ⁸ Marney, L., Choi, J., Magaña, A. A., Yang, L., Techen, N., Alam, M. N., Brandes, M. S., Soumyanath, A., Stevens, J. F., & Maier, C. S. (2024). Liquid chromatography-mass spectrometry quantification of phytochemicals in *Withania somnifera* using data-dependent acquisition, multiple-reaction-monitoring, and parallel-reaction-monitoring with an inclusion list. *Frontiers in Chemistry*, 12, 1373535. <https://doi.org/10.3389/fchem.2024.1373535>
- ⁹ Modi, S. J., Tiwari, A., Ghule, C., Pawar, S., Saste, G., Jagtap, S., Singh, R., Deshmukh, A., Girmé, A., & Hingorani, L. (2022). Pharmacokinetic Study of Withanosides and Withanolides from *Withania somnifera* Using Ultra-High Performance Liquid Chromatography-Tandem Mass Spectrometry (UHPLC-MS/MS). *Molecules*, 27(5), 1476. <https://doi.org/10.3390/molecules27051476>
- ¹⁰ Tsipinana, S., Husseiny, S., Alayande, K. A., Raslan, M., Amoo, S. O., & Adeleke, R. (2023). Contribution of endophytes towards improving plant bioactive metabolites: a rescue option against red-taping of medicinal plants. *Frontiers in Plant Science*, 14, 1248319. <https://doi.org/10.3389/fpls.2023.1248319>
- ¹¹ Hasnain, A., Naqvi, S. A. H., Ayesha, S. I., Khalid, F., Ellahi, M., Iqbal, S., Hassan, M. Z., Abbas, A., Adamski, R., Markowska, D., Baazeem, A., Mustafa, G., Moustafa, M., Hasan, M. E., & Abdelhamid, M. M. A. (2022). Plants in vitro propagation with its applications in food, pharmaceuticals and cosmetic industries: current scenario and future approaches. *Frontiers in Plant Science*, 13, 1009395. <https://doi.org/10.3389/fpls.2022.1009395>
- ¹² Verdú-Navarro, F., Moreno-Cid, J. A., Weiß, J., & Egea-Cortines, M. (2023). The advent of plant cells in bioreactors. *Frontiers in Plant Science*, 14, 1310405. <https://doi.org/10.3389/fpls.2023.1310405>



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Fucoidan: A Future For Prostate Health

A rigorous new clinical trial is paving the way for marine extract fucoidan to enter the rapidly expanding men's health market.

The global men's health and wellness market is expanding at 12.5% per year and is predicted to reach USD\$2.8 trillion by 2030.¹ Driving the increase are savvy healthcare companies tapping into burgeoning subcategories such as sexual wellness, prostate health and urinary support. As men increasingly adopt a proactive approach to their health and seek natural and efficacious supplements prior to pharmaceutical intervention, opportunities for formulation innovation in this category abound.

Urinary symptoms are widespread among men aged over 50. While typically non-life-threatening, enlargement of the prostate gland associated with age can lead to compression of the urethra and restriction of the flow of urine from the bladder. An estimated 50-60% of men experience lower urinary tract symptoms (LUTS) by their 60s and 90% of men by their 80s.²

LUTS can disturb daily activities and significantly impact quality-of-life. Common LUTS include frequent urination, an intermittent stream, straining, an urgent need to urinate, and difficulty emptying the bladder completely. Other symptoms, such as nocturia (waking multiple times in the night to urinate) can disrupt the sleep of both men and their partners.

Demand for natural compounds to support prostate health and LUTS is rising. The category is currently dominated by saw palmetto, pumpkin seed,

tomato and stinging nettle extracts.³ Clinical evidence for these botanical extracts is mixed however, with limited and inconsistent data supporting their safety and efficacy.⁴

In rigorous new clinical research, fucoidan – a polysaccharide found naturally in brown seaweed – has been shown to relieve lower urinary tract symptoms commonly associated with ageing in men and improve prostate-related quality of life.⁵

The randomised, double-blind, placebo-controlled study involved 88 men. Half of the participants were administered a high purity *Undaria pinnatifida* fucoidan supplement once daily, while the other half were administered a placebo. The 90-day trial saw clinicians record baseline data and then oversee assessments at 30, 60 and 90 days.

The study utilised the International Prostate Symptom Score (IPSS) to assess the effects of fucoidan supplementation. The IPSS is a validated assessment tool used globally to assess and track the severity of urinary symptoms. The IPSS consists of four questions encompassing the voiding symptoms of incomplete emptying, intermittency, weak stream and straining, and three storage questions encompassing frequency, urgency and nocturia. The IPSS also includes a quality-of-life assessment based on urinary symptoms.

Among the key findings, participants taking the fucoidan supplement achieved statistically significant improvements urinary symptoms compared to those taking the placebo. Significant improvement in total IPSS scores was evident at day 60, further improving at day 90. The difference between the fucoidan and placebo groups remained statistically significant through to the end of the study (Figure 1).

A feature of this trial is its clinical rigour. Not only were changes in urinary symptoms shown to be statistically significant, they were also assessed for clinical relevance. Clinical relevance indicates that observed benefits actually translate to improved daily symptoms in the real world. In this study, reductions in IPSS that were potentially clinically meaningful were further assessed using Minimum Clinically Important Difference (MCID) criteria. The overall MCID was defined as ≥ 3 -point reduction in total IPSS. A significantly higher proportion of participants taking the fucoidan supplement achieved the MCID compared to the placebo group. At day 90, this was 51.1% of the fucoidan group compared to only 28.9% of the placebo group (Figure 2) – supporting a clinically relevant improvement in LUTS.

The study revealed that both voiding and storage



composite scores improved significantly at day 90, including a more than nine-fold improvement in voiding symptoms and a two-fold improvement in storage symptoms compared to the placebo. Improvements in the individual symptoms of straining, emptying, frequency and intermittency were also shown at day 90.

Importantly, fucoidan supplementation resulted in urinary-related quality-of-life improving significantly and continuously throughout the study. In comparison, the placebo group showed no change in the quality-of-life score (Figure 3).

The researchers noted that the mechanisms underlying the symptom relief are likely to be multifactorial. Previous studies suggest that the same high purity fucoidan extract can support healthy dihydrotestosterone levels in the prostate, androgen signalling and gut microbiome activity.^{6,7} For formulators looking ahead, emerging evidence also points to a role for the gut-prostate axis in supporting prostate health.⁵

The researchers also reported that compared to other nutraceuticals utilised for prostate health, the high purity fucoidan supplement showed strong efficacy. Pooled evidence from a 2024 Cochrane review indicating a less-than-one-point decrease in IPSS for saw palmetto extracts, was significantly outperformed by the -3.40 mean reduction in total IPSS score from baseline to day 90 in this fucoidan study.⁸

The *Undaria pinnatifida* fucoidan supplement utilised in the study was produced by Australian biotechnology company Marinova using a proprietary aqueous extraction process. The fucoidan was well tolerated and shown to be safe throughout the trial period. The same extract has been extensively studied and is widely utilised in premium nutraceuticals targeting gut health, immune support and healthy ageing. Its potential to support prostate health suggests an exciting future for fucoidan in the men's health category.

For more information: www.marinova.com.au

References:

- Market report: www.stockhead.com.au/health
- Bhat, S. A.; Rather, S. A.; Islam, N. An Overview of Benign Prostatic Hyperplasia and Its Appreciation in Greco-Arab (Unani) System of Medicine. *Asian J. Urol.* 2022, 9 (2), 109–118.
- Csikós E, Horváth A, Ács K, et al. Treatment of benign prostatic hyperplasia by natural drugs. *Molecules.* 2021;26(23):7141.
- Antoniou V, Gauhar V, Modi S, Somani BK. Role of phytotherapy in the management of bph: a summary of the literature. *J Clin Med.* 2023;12 (5):1899.
- Wimmer BC, Dwan CA, Bhalerao SS, Gupta CG, Vaze SV, Kshirsagar SS. Fucoidan from *Undaria pinnatifida* Improves Benign Prostatic Hyperplasia Symptoms in Men: A Randomized, Double-Blind, Placebo-Controlled Study. *Res Rep Urol.* 2026; 18:597883
- Shanmugasundaram D, Dwan C, Wimmer BC, Srivastava S. Fucoidan Ameliorates Testosterone-Induced Benign Prostatic Hyperplasia (BPH) in Rats. *Res Rep Urol.* 2024;16: 283-297
- Wimmer, B.C.; Dwan, C.; De Medts, J.; Duysburgh, C.; Rotsaert, C.; Marzorati, M. *Undaria pinnatifida* Fucoidan Enhances Gut Microbiome, Butyrate Production, and Exerts Anti-Inflammatory Effects in an In Vitro Short-Term SHIME® Coupled to a Caco-2/THP-1 Co-Culture Model. *Mar. Drugs* 2025, 23, 242.
- Franco JVA, Trivisonno LF, Sgarbossa N, et al. *Serenoa repens* for the Treatment of Lower Urinary Tract Symptoms Due to Benign Prostatic Enlargement: An Updated Cochrane Review. *World J Mens Health.* 2024;42(3):518.

Figure 1 Mean change in total IPSS from baseline over time

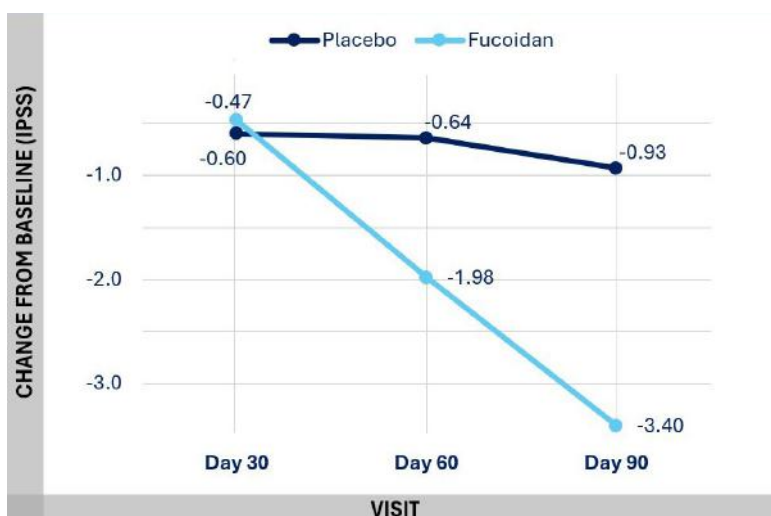


Figure 2 Clinically significant improvements in total IPSS over time

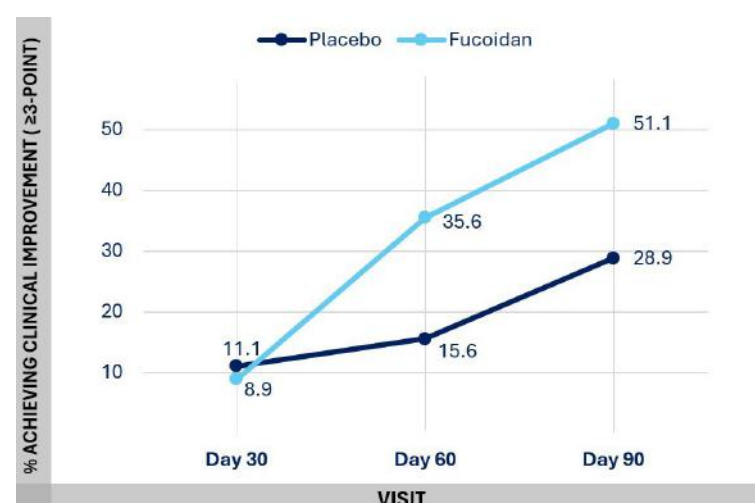
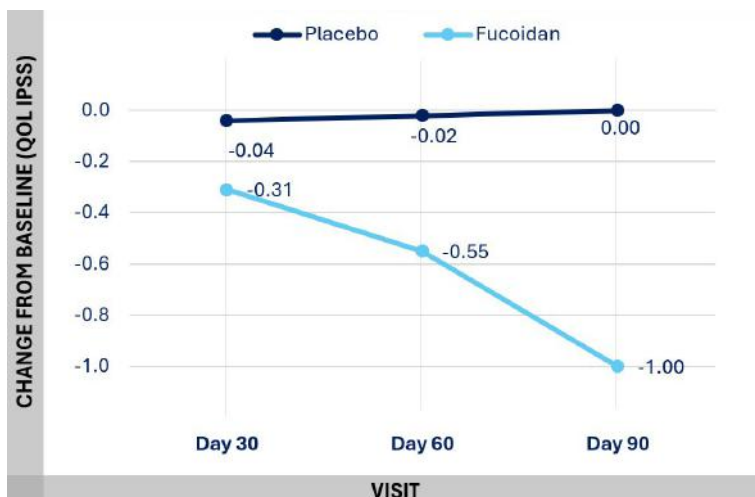


Figure 3 Mean change in quality-of-life due to urinary symptoms from baseline over time



LP_{LDL}[®]'s Impact on Cholesterol and Gut Microbiota in Coeliac Disease

New clinical study expands on LP_{LDL}[®] efficacy in adults with coeliac disease and demonstrates improvements in key cardiometabolic biomarkers.

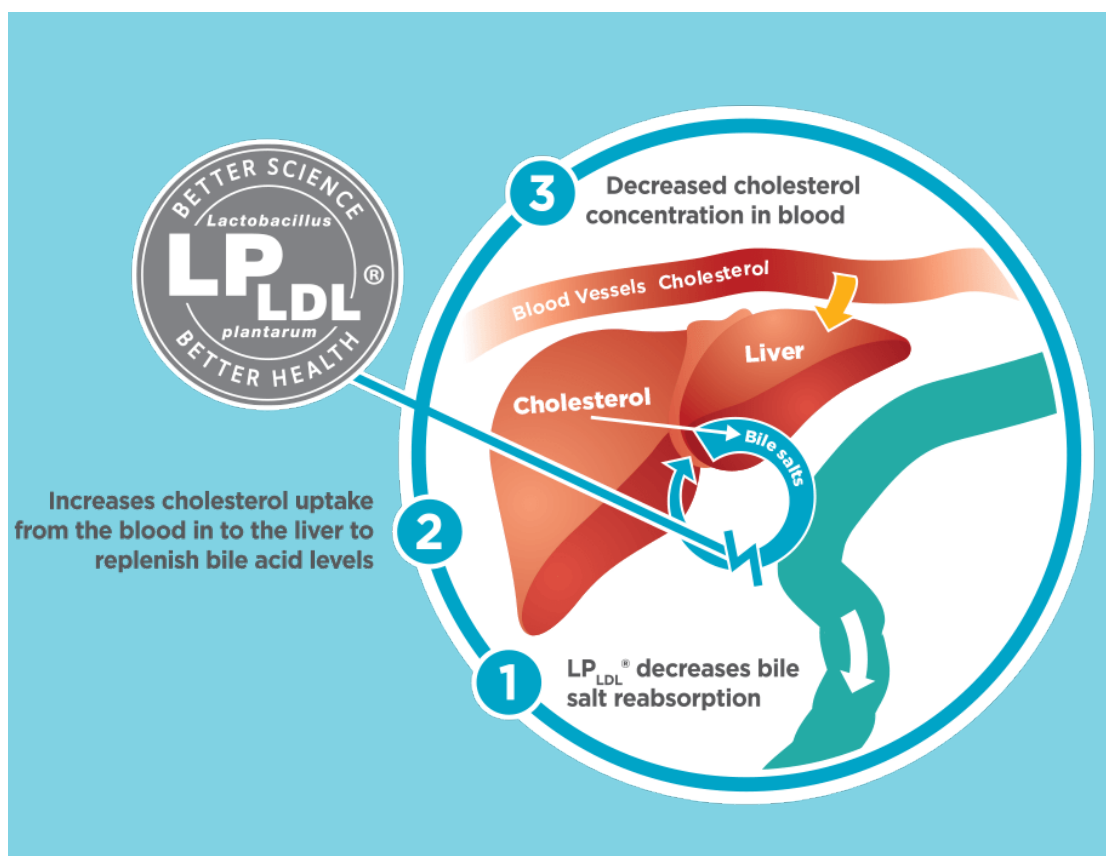
ProBiotix Health, a life sciences company developing pioneering probiotic solutions for cardiometabolic health, has announced the publication of a new pilot human intervention study demonstrating the efficacy of its patented probiotic strain *Lactobacillus plantarum* ECGC 13110402, LP_{LDL}[®], in adults with coeliac disease (CeD) and hypercholesterolaemia. It is the first published clinical investigation evaluating LP_{LDL}[®] in this patient population.

The randomised, placebo-controlled pilot human intervention study was conducted over 9 weeks followed by a three-week washout period at UOC of Gastroenterology of the AOU Ruggi d'Aragona of Salerno in Italy. It found that adults with CeD and hypercholesterolaemia, taking one bilayer tablet containing 25mg of LP_{LDL}[®] and 400 mg of PSS (Plant Ste-

rols and Stanols) twice daily, showed consistent improvements in atherogenic lipid markers, including LDL-cholesterol, total cholesterol, non-HDL-cholesterol and apolipoprotein B, compared to the placebo-matched participants. The active group also demonstrated positive changes in gut microbiota composition, including increased microbial diversity and higher levels of beneficial bacterial groups.

These findings also contribute to the growing body of evidence found in previous studies carried out by ProBiotix Health, further demonstrating that the inclusion of LP_{LDL}[®] within multi-ingredient formulations has a positive impact on key cardiometabolic health biomarkers.

Dr. Adele Costabile, Professor in Clinical Nutrition and the Microbiome at the University of Roehampton, who led the investigation, commented: "These



key findings continue to show that LP_{LDL}[®], combined with PSS, can support lipid management and beneficially modulate gut microbiota in adults with CeD. Although untreated CeD is often associated with low cholesterol due to impaired nutrient absorption, cholesterol levels frequently increase to normal levels following adoption of a gluten-free diet, leaving many patients with the same cardiometabolic challenges as the wider population. This study represents the first clinical investigation of LP_{LDL}[®] in adults with coeliac disease and marks an important first step in addressing an unmet need to support cardiometabolic and intestinal health in adults with CeD beyond dietary management alone."

Participants were instructed to maintain their usual dietary intake and physical activity levels, while avoiding other probiotic products that could influence gastrointestinal motility or lipid metabolism. Key findings after the 9-week treatment phase and three-week washout period highlighted:

- Statistically significant reduction in total cholesterol levels, with reductions of 12.3% at week 5, 16% at week 9, and 13.4% after washout.
- Significant reduction in LDL cholesterol by 11% (whereby previous studies suggested a decrease between 5-12% with consumption of higher PSS doses).
- A significant decrease in non-HDL cholesterol by 19%, compared to an 11% reduction for the placebo group.
- A significant decrease in apolipoprotein B concentrations by 19% for the active group only, an important biomarker of cardiovascular risk.
- Higher alpha diversity, a hallmark of intestinal and systemic health, and increased proportions of *Bifidobacterium*, Christensenellaceae R-7, and *Lachnospiraceae* ND3007, in the active group only.
- Observed a significant increase in vitamin D levels of those in the active group. This finding warrants further investigation to support future formulaic opportunities combining LP_{LDL}[®] and vitamin D.

Steen Andersen, CEO at ProBiotix Health, added: "Every new clinical study strengthens the evidence base behind LP_{LDL}[®] and gives our partners greater confidence when selecting a clinically validated ingredient for differentiated cardiometabolic products. This latest study is particularly exciting since it demonstrates positive outcomes in a new patient population, while highlighting our continued commitment to scientific excellence and a compelling commercial proposition for the value of LP_{LDL}[®] in combination with complementary cardiometabolic ingredients"

As a patented probiotic strain designed to support cardiometabolic health, LP_{LDL}[®] was initially selected from a collection of over 4,000 microbial candidates for its superior bile salt hydrolase activity and cholesterol reduction activity, in combination with its ability to survive in high concentrations of bile salts.

Previous independent human intervention studies have shown that daily intake of LP_{LDL}[®] has a positive impact on multiple cardiometabolic health biomarkers, including total, LDL and HDL cholesterol, apolipoprotein B, triglycerides and blood pressure.

For more information: <https://probiotixhealth.com>

ACG Launches RecycloPod™ PP Ultra

New polypropylene blister system addressed barrier gap in recyclable pharmaceutical blister packaging.

ACG, a leading integrated pharmaceutical manufacturing solutions provider, has launched RecycloPod™ PP Ultra, a polypropylene-based blister packaging system combining high moisture and oxygen barrier protection with design for recyclability.

The company identified a gap in the market: while existing polypropylene blister solutions can meet moisture barrier requirements, oxygen protection can remain a challenge. RecycloPod PP Ultra has been developed to address both - providing a more complete barrier solution for sensitive pharmaceutical formulations. The launch also introduces ACG's 'Pod' family of sustainable packaging solutions. Inspired by the way a pea pod efficiently protects what is inside, the range is designed with sustainability, future packaging needs and evolving regulatory requirements in mind.

Developed in collaboration with customers, RecycloPod PP Ultra uses a PP/EVOH/PP forming structure with a water vapour transmission rate of less than 0.60 g/m² per day and an oxygen transmission rate of less than 0.20 cm³/m² per day. Used with a PP lidding Film, it creates a predominantly polypropylene blister structure engineered for reliable thermoforming and sealing on pharmaceutical packaging lines. The development comes as manufacturers prepare for evolving requirements including the EU Packaging and Packaging Waste Regulation (PPWR), and an increased focus on packaging recyclability.

Dr Akbar Ali, Head - Development & Technology at ACG Packaging Materials, said: "Pharmaceutical companies should not have to choose between protecting their product and progressing their packaging sustainability objectives. With RecycloPod PP Ultra, our objective was to provide both high moisture and oxygen barrier protection while meeting the practical requirements of pharmaceutical manufacturing and supporting design for recyclability."

SR Shivshankar CEO, ACG Packaging Materials, adds: "RecycloPod PP Ultra forms part of our wider sustainability strategy. We are participating in the Science Based Targets initiative (SBTi) as part of its net-zero ambitions and using digitalisation to support more efficient and sustainable manufacturing, with facilities recognised by the World Economic Forum's Global Lighthouse Network.

ACG, also monitor more than 125 sustainability parameters through the framework underpinning our Sustainability Report. Together with continued investment in packaging innovation, these initiatives reflect ACG's focus on future readiness - helping both our own operations and pharmaceutical customers prepare for a lower-impact, increasingly circular manufacturing environment.



Health Canada Approves *S. cerevisiae* for Resveratrol & Beta-Glucan

Updated Natural Health Product monographs strengthen the regulatory pathway for fermentation-derived ingredients and support innovation in evidence-based health and wellness solutions.

Lallemand Bio-Ingredients welcomes recent updates to Health Canada's Natural Health Product monographs recognizing *Saccharomyces cerevisiae* as a source of trans-resveratrol and yeast beta-glucan. This regulatory development reinforces the growing recognition of fermentation-derived ingredients and highlights the potential of yeast biotechnology to deliver innovative, science-backed solutions for human health. The monograph updates also provide manufacturers with a clearer, more predictable and more efficient pathway to license eligible natural health products containing fermentation-derived trans-resveratrol or yeast beta-glucan in Canada.

For trans-resveratrol, the monograph update allows fermentation-derived trans-resveratrol from *Saccharomyces cerevisiae* to be licensed under Health Canada's existing Antioxidant Monograph framework, including established antioxidant claims and conditions of use.

In addition to recognizing *Saccharomyces cerevisiae* as a source of yeast beta-glucan, the updated monograph includes allowed health claims when used at the recommended dose:

- Source of yeast beta-glucans with immunomodulating properties
- Helps reduce the severity of symptoms of the

common cold (e.g. sore throat, difficulty swallowing, hoarseness, cough, runny nose) in adults prone to recurrent colds when taken as a preventative measure during winter months

The updated monograph provides a clear regulatory framework that supports the development, licensing, and commercialization of yeast beta-glucan products in Canada.

As a global leader in yeast and fermentation technologies, Lallemand Bio-Ingredients has long invested in the research, development, and production of ingredients derived from *Saccharomyces cerevisiae*. This recognition reflects the increasing body of scientific evidence supporting the use of yeast-derived bioactives and their role in addressing evolving consumer health needs.

"Fermentation has been safely used for centuries, and today it continues to unlock exciting opportunities for innovation in nutrition and health," said Nassim Naderi, Regulatory Affairs Specialist for Lallemand Bio-Ingredients. "Health Canada's recognition of *Saccharomyces cerevisiae* as a source of both resveratrol and yeast beta-glucan underscores the credibility of fermentation-derived ingredients and supports continued innovation across the natural health products sector." Lallemand Bio-Ingredients' portfolio includes scientifically substantiated ingredients derived from *Saccharomyces cerevisiae*, such as Veri-te™ fermentation-derived trans-resveratrol and M-Gard® highly purified yeast beta-1,3/1,6-glucan, which reflect the company's commitment to evidence-based nutritional solutions and align with growing demand for healthy aging, immune resilience, and overall wellness by combining scientific rigor, sustainability, consistent quality, and the regulatory confidence needed to develop innovative natural health products for the Canadian market. "This development represents an important step forward not only for fermentation-derived ingredients, but for the broader health and wellness industry," added Ms. Naderi. "We are proud to contribute to the scientific advancement of yeast-based ingredients and look forward to continuing our mission of delivering innovative solutions backed by science."



For more information: <https://www.bio-lallemand.com/>

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Butyrate: Shifting Gut Health Formulation From Microorganism Counts to Metabolic Function

Aurora Intelligent Nutrition analyzes the transition from prebiotic fiber fermentation to direct SCFA supplementation, highlighting the critical role of targeted intestinal delivery systems.

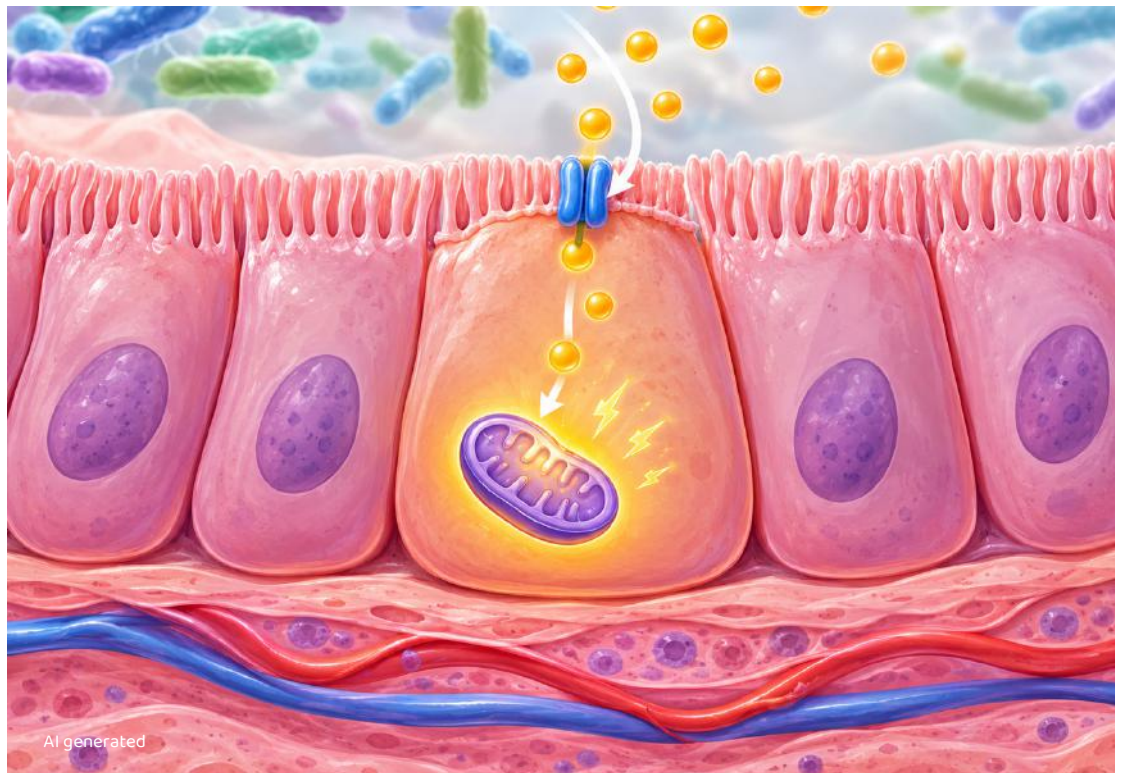
The development of digestive health formulations is undergoing a fundamental paradigm shift: moving away from nonspecific modifications of microbiome composition toward strategies directly targeting metabolic functionality. In this evolving landscape, butyrate - a key short-chain fatty acid (SCFA) produced through the bacterial fermentation of indigestible dietary fibers - has emerged as a crucial molecule for epithelial integrity and gut homeostasis.

This industry shift reflects a growing demand for targeted physiological outcomes rather than simple colony-forming unit (CFU) counts. As Antonio Alcaide, Technical director at Aurora Intelligent Nutrition, explains: "For years, the industry focused almost exclusively on which microorganisms to intro-

duce or stimulate. The next stage of intelligent nutrition is about understanding what those bacteria are doing. Butyrate is one of the best examples of this conceptual jump from composition to functional activity."

Bioenergetic fuel and epithelial signaling

From a physiological standpoint, butyrate serves as the primary energy source for colonocytes. Beyond its bioenergetic role, extensive scientific research links butyrate to intestinal barrier maintenance through the upregulation of tight junction proteins, mucin production, and immune signaling regulation. Furthermore, its activity as a histone deacetylase (HDAC) inhibitor underlines its signifi-



cance as an epigenetic and cellular signaling agent.

However, Alcaide emphasizes the importance of distinguishing between cellular mechanisms and immediate clinical outcomes. The main challenge for oral formulation lies in consistently reproducing these physiological conditions at the target intestinal sites.

Complementary strategies: endogenous production vs. direct delivery

The human body naturally generates butyrate through the fermentation of resistant starches, inulin, and other prebiotic fibers. However, endogenous production varies significantly between individuals based on their unique microbiome composition and metabolic activity.

Direct butyrate supplementation offers a standardized alternative. "With prebiotic fiber, we nourish an ecosystem and rely on an individual's existing microbiome to produce metabolites. With direct butyrate, we deliver a precise molecule - shifting the challenge to formulation and release technology," clarifies Alcaide.

Both approaches are increasingly viewed as complementary strategies tailored to specific health targets. Additionally, while butyrate is frequently marketed under the "postbiotic" umbrella, Antonio Alcaide highlights an important scientific nuance aligned with ISAPP (International Scientific Association for Probiotics and Prebiotics) consensus: a purified metabolite devoid of inactivated cellular components does postbiotic. "This isn't just a semantic debate - it reflects our industry's shift toward designing formulations built specifically around microbiome function."

Galenic challenges and advanced delivery systems

Integrating butyric acid or its salts into oral dosage forms poses distinct organoleptic challenges due to its characteristic pungent odor and taste. Furthermore, early absorption in the initial gastrointestinal tract can compromise the amount reaching the target at the end of the colon.

To overcome these barriers, nutraceutical developers are leveraging advanced microencapsulation, lipid matrices, and controlled-release (CR) technologies. The commercial availability of microencapsulated butyrate ingredients demonstrates how these galenic solutions are successfully transitioning into finished consumer products.

In these advanced formulations, delivery technology ceases to be a mere manufacturing detail - it becomes an integral driver of product functionality. Combining fermentable fibers with targeted butyrate allows formulations to simultaneously support endogenous production and deliver a standardized dose of the active molecule.

"When developing next-generation digestive health products, success isn't about stacking as many ingredients as possible onto a label. It's about answering three questions in exact order: what function are we targeting, what dose is required, and what delivery system ensures it reaches the right location effectively," concludes Alcaide.

For more information: www.aurorainutrition.com

Natural Active Bridging the Gap Between Deodorants and Sweat Control

KanuFresh is a 100% natural-origin active ingredient derived from Australian kanuka leaves. It reduces visible signs of perspiration by up to 54%, body odor by 44%, and skin irritation by 35%, with effects lasting up to 24 hours across all skin phototypes.



Lucas Meyer Cosmetics by Clariant is excited to announce the global launch of KanuFresh (INCI: Glycerin (and) Water (and) Kunzea Ericoides Leaf Extract), an innovative breakthrough that closes the longstanding gap between conventional deodorants and sweat control solutions. Responsibly sourced from Australian kanuka leaves, this ingredient helps minimize visible signs of perspiration and odor, rather than simply masking them.

Unlike conventional approaches, KanuFresh works through a unique multi-action mechanism that helps keep skin visibly dry, fresh and comfortable, while supporting a balanced skin environment. This enables whole-body freshness, including in sensitive areas, without compromising skin comfort.

KanuFresh is supported by a robust package of in vitro and in vivo studies, alongside clinical validation in real-world conditions. In vitro studies showed KanuFresh can address both sweat and odor formation without disrupting the skin's natural microbial balance. Clinical studies further confirmed up to a 54% reduction in visible signs of perspiration, a 44% reduction in odor intensity, and a 35% reduction in irritation. Benefits were maintained for up to 24 hours and validated under stress and physical activity conditions on hands and underarms in male and female volunteers across a broad range of skin phototypes (I–VI), demonstrating inclusive, real-world performance and broad consumer relevance.

For brands seeking responsibly sourced ingredients, KanuFresh is readily biodegradable and produced using 100% renewable energy. It is made with responsibly sourced raw materials, including RSPO Mass Balance-certified glycerin. KanuFresh is also COSMOS-compliant, vegan, halal, and compliant with major international cosmetic requirements, including Chinese regulations and NMPA standards, offering formulators a versatile global solution.

KanuFresh™ is a trademark of Clariant.

Let's Demystify Greenwashing Before It Becomes Mindwashing

What the new Environmental Claims Rules really mean for the cosmetics industry



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MEng in Phytomedicine,
Senior Cosmetic
Product Safety Assessor,
Expert Adviser on EU
Cosmetics Regulation

No consumer wants to be manipulated, nor should companies gain a competitive advantage by exploiting environmental concerns simply because sustainability has acquired market value. At the same time, consumers cannot be expected to understand the materials, processes or regulatory intricacies behind every environmental statement they encounter. This is precisely why rules on environmental claims matter: they protect consumers from misleading information, but they also protect responsible manufacturers from competitors who make claims they cannot substantiate.

At its core, this is a question of trust. Where trust, professional responsibility and ethical communication work, detailed rules often remain in the background. Where they do not, regulation inevitably becomes more specific. Greenwashing matters because environmental awareness can influence purchasing decisions. A green leaf, recycled-looking packaging, the words *natural*, *eco-friendly* or *sustainable*, or a carefully constructed story about environmental responsibility can all contribute to the impression a consumer forms about a product. If that impression extends beyond the evidence behind it, there is a problem.

The new European rules address that problem. What they do not do is prohibit companies from communicating genuine environmental benefits, nor do they automatically require every environmental statement to be supported by an assessment of every aspect of a product's life cycle. Yet, as new rules approach, their meaning can expand considerably in professional and public communication. Manufacturers may then find themselves trying to comply not only with what the legislation says, but also with what they have repeatedly been told it says. And that is where greenwashing itself can begin to be... mindwashed.

What is actually new?

Directive (EU) 2024/825 introduces new and explicit rules concerning environmental claims and sustainability labels, and certain commercial practices are now specifically prohibited. However, the underlying logic is hardly unfamiliar to the cosmetics industry.

ics industry.

Commission Regulation (EU) No 655/2013 has long required cosmetic claims to comply with common criteria including truthfulness, evidential support, honesty, fairness and informed decision-making. A cosmetic claim is also not merely a sentence printed on a label. It may be conveyed through words, names, trademarks, pictures, symbols and other forms of presentation, explicitly or implicitly. The overall impression matters.

The distinction is therefore important. It is not new that a claim must be truthful, clear, substantiated and presented in a way that does not mislead the consumer. What is new is that Directive (EU) 2024/825 now specifically defines and explicitly prohibits certain practices relating to environmental claims.

The basic question nevertheless remains surprisingly simple: What exactly am I claiming, and does my documentation prove precisely that?

Are "Green words" now prohibited?

Not quite. Directive (EU) 2024/825 specifically addresses generic environmental claims. Its examples include expressions such as environmentally friendly, eco-friendly, green, nature's friend, ecological, environmentally correct, climate friendly, gentle on the environment, carbon friendly, energy efficient, biodegradable and biobased, as well as similar statements suggesting excellent environmental performance.

This is sometimes reduced to the message that such words are simply "banned". That interpretation is too broad. The prohibition concerns a generic environmental claim where the trader cannot demonstrate recognised excellent environmental performance relevant to the claim. The Directive also distinguishes such generic claims from environmental claims whose specification is provided in clear and prominent terms on the same medium.

That distinction matters. "Climate-friendly packaging" is broad and generic; a statement describing a specific and demonstrable property of that packaging is not. The question is therefore not merely which word has been used, but what is being com-

municated to the consumer and what evidence supports it.

When one part becomes the whole

One of the most useful principles made explicit by the new rules concerns claims that refer to an entire product or business when the environmental benefit actually relates only to a particular aspect.

Suppose the body of a cosmetic bottle contains 50% recycled plastic. That information concerns the bottle body. It does not automatically describe the cap, pump or other packaging components, and it certainly does not, by itself, establish that the cosmetic product as a whole is “sustainable”.

Cosmetic safety and claims professionals already know this logic from another context. If a cream contains an ingredient with a recognised moisturising effect, the mere presence of that ingredient is not necessarily evidence that the finished cosmetic product produces the same effect to the extent implied by the product claim. The same reasoning applies here: the scope of the evidence must correspond to the scope of the claim.

The same is true for a statement such as “98% ingredients of natural origin”. If that percentage has been properly calculated and substantiated, for example using the methodology described in ISO 16128-2, the statement tells us exactly that: the origin of a defined proportion of the ingredients. It does not tell us how much energy or water was used, what packaging was chosen, how far the raw materials travelled or what the product’s overall environmental impact may be. Nor is that a weakness in the claim, because the claim did not say any of those things.

This brings us to a word that is used constantly but not always clearly understood: sustainability. Unlike pH or recycled-plastic content, sustainability is not a single product characteristic, but a much broader concept encompassing environmental and, in its broader meaning, social and economic dimensions. One favourable characteristic therefore cannot, by itself, establish the overall sustainability of a product.

This does not mean that every environmental claim requires proof of a product’s overall sustainability. If a manufacturer claims only that the body of a bottle contains a certain percentage of recycled plastic, that is the property that needs to be substantiated. The problem begins when a specific fact is presented in a way that invites a much broader conclusion. Natural, certified and sustainable are not synonyms.

A green leaf is not a certification

The new rules also address sustainability labels. Such labels can create a particularly strong impression because consumers may interpret a seal, badge or symbol as evidence that a product has undergone some form of independent assessment. Directive (EU) 2024/825 therefore prohibits displaying a sustainability label that is not based on a certification scheme or established by public authorities.

The reason is straightforward: a graphic symbol can look like independent verification even when no independent verification exists. A self-created green



seal or leaf does not become a certification simply because it looks like one – whether it was designed by a graphic designer, bought on Etsy, or put together in Canva one Sunday after a family lunch.

There is, however, an important nuance. Not every sustainability label is automatically an environmental claim. If its wording, appearance or context communicates a positive or reduced environmental impact, however, it may also function as one. Once again, presentation matters because a claim is more than text.

Can a truthful claim still mislead?

Yes, and the Directive gives an almost absurdly simple example: bottled water advertised as “gluten-free”.

The statement is factually true, but that is precisely the point. Water does not naturally contain gluten. If we paid at least some attention in chemistry class, the absence of gluten is hardly a distinguishing quality of one bottle of ordinary water over another. Yet highlighting such information can create the impression that the product offers a particular advantage that comparable products do not.

This is why asking whether a statement is true is not always enough. We should also ask whether it is relevant, why it is being highlighted and what conclusion a consumer may reasonably draw from it.

Context can, of course, change the relevance of the same information. In cosmetics, for example, a “gluten-free” statement may have different relevance for a lip product, where unintentional oral ingestion can occur during normal use and certain raw materials could potentially be a source of gluten, than for a product intended exclusively for application to intact skin.

A similar principle applies when compliance with a legal requirement that applies to all products in a category is presented as though it were a special benefit of one particular product. Being legally compliant is not a unique selling point simply because somebody has found an attractive way to print it on the packaging.

Consumer law protects people from misleading commercial practices, but it does not relieve us, as consumers, of the need to think critically about what marketing tells us. We do not need to treat manufacturers as criminals – but neither should we treat consumers as fools.



And what about packaging?

Packaging deserves separate attention because Regulation (EU) 2025/40 on packaging and packaging waste (PPWR) adds another regulatory layer. Where an environmental claim concerns a regulated packaging property, such as recycled content, recyclability or reusability, it must also be considered within the applicable PPWR requirements.

For a cosmetics manufacturer, however, the practical lesson is much simpler than the legal architecture behind it. Claims about packaging properties need to be supported by the relevant packaging documentation. If a manufacturer wishes to state that the body of a bottle contains a particular percentage of recycled plastic, the relevant information and evidence should be available in the packaging documentation, including documentation obtained from the packaging supplier where applicable, and the claim should be limited to the packaging component to which that evidence actually relates.

Evidence concerning a packaging property is not evidence of the environmental performance of the cosmetic product as a whole, just as information about one ingredient is not automatically evidence of the performance of the finished formulation. Nor does a specific environmental claim create a general requirement for a full life-cycle assessment.

The problem is not that specific evidence is too narrow. The problem arises when the claim becomes broader than the evidence supporting it.

When greenwashing becomes mindwashing

Environmental regulation is complex. Social media is fast. Those two realities do not always work well together, particularly in the weeks preceding the application of new rules. Manufacturers may be exposed, day after day, to simplified interpretations, half-truths and sometimes outright misinformation about what will supposedly become prohibited or mandatory. A detailed legal provision becomes a carousel. A conditional prohibition becomes "this is now banned". An example becomes a universal rule. A requirement from one regulatory area is transferred into another without sufficient legal basis.

Repetition then does something particularly powerful: familiarity begins to replace verification. When the same interpretation appears often enough, from enough apparently authoritative sources, a half-truth can gradually acquire the status of an accepted fact. It is no longer questioned against the actual wording of the legislation because, by the time the rules start to apply, everyone seems to "know" what they say.

There is an old idea that if a falsehood is repeated often enough, it becomes true. Of course, it does not. But it may begin to be perceived as true – and in regulatory communication, that distinction matters enormously.

Simplifying regulation is not the problem. Good professional communication should simplify complex information. The problem begins when simplification changes its meaning. If greenwashing presents environmental information in a way that can influence a consumer's purchasing decision, we might use the term *mindwashing* for communication that simplifies, generalises or removes regulatory infor-

mation from its context to such an extent that the recipient is left with a different understanding from the one that actually follows from the legislation.

This matters particularly when regulatory information is communicated to manufacturers who rely on professional expertise to make business decisions. They should not need to become lawyers, toxicologists, packaging specialists and environmental experts simply to understand which obligations actually apply to their products. One sign of genuine specialisation is knowing the boundaries of one's own field.

Perhaps the same principle that protects consumers from misleading product claims can also serve as a quality standard for professional regulatory communication. **Fear attracts attention. Understanding enables decisions.**

Demystifying rather than prohibiting

Preventing greenwashing does not mean preventing environmental claims. The new rules do not stop manufacturers from communicating genuine environmental benefits; they prevent them from saying more than they can substantiate or creating an impression their documentation cannot support. For cosmetics manufacturers, this means distinguishing between several regulatory layers. Regulation (EU) No 655/2013 continues to provide the fundamental logic for cosmetic claims. Directive (EU) 2024/825 introduces specific rules and prohibitions concerning environmental claims and sustainability labels. The PPWR adds another layer where claims concern regulated properties of packaging. These rules interact, but they should not be merged into one enormous and undefined requirement to "prove sustainability".

Before making a claim, the practical questions remain remarkably ordinary: What exactly am I saying? What will the consumer understand from it? What evidence do I have? Does that evidence support the entire message, including the impression created by the way I present it?

That is ultimately the simplest way to approach the subject: Say what you can substantiate. Substantiate what you claim. And do not use presentation to suggest more than that.

Greenwashing then stops looking like a new and mysterious regulatory discipline and returns to what it fundamentally is: a question of truthfulness, evidence, relevance and fair communication with consumers.

And that is exactly what communication about the regulation itself should be as well.



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INSPIRATIONAL SUCCESS STORY

Be Natur

Be Natur is a Croatian line of certified, natural health products developed with a focus on high bioavailability and scientifically supported efficacy. We spoke with Slaven Marelja, owner of the manufacturing company, about the brand's journey and future plans.

■ How did it all begin, what inspired you, and what was the initial idea?

Due to my own health problems, I turned to a holistic approach to health, but also to studying and looking for ways to help myself. The journey lasted almost 20 years, and through research and reading various scientific studies, I realized that my body had been in magnesium deficiency all my life, which was shown by various symptoms that I did not associate with magnesium deficiency in the body. Using various brands and various forms of magnesium over the years in order to raise my body's magnesium level at the cellular level, unfortunately, I did not notice much progress. Through deeper research, I came to the key realization that it is not important how much of a certain substance we put into our body, but to what extent our body can use it. I continued to research and experiment more deeply on myself, and my goal was to produce my own magnesium with the highest quality raw material available and the highest possible bioavailability of the product.

■ What was needed from idea to realization?

It was necessary to source the highest-quality raw material available on the market, develop my own formula with the highest possible bioavailability and purity, complete all required regulatory and safety testing, scientifically demonstrate the product's effectiveness, and ultimately establish our own magnesium production. The goal was to create a

magnesium product that would stand out from the competition through its effectiveness.

■ What products do you offer today, and where and how do you market them?

Be Natur's product range includes Ionic Mg Ultra Rapid Skin & Sport, a highly active ionic dermal magnesium applied by spraying directly onto the skin, as well as GLYPREM, our latest oral magnesium supplement in capsule form. GLYPREM contains non-buffered magnesium bisglycinate enriched with vitamins D3, K2 and B6. Our products are available through our retail store, vending machines, pharmacies and our online shop at www.benatur.eu, with availability and shipping across the EU, Serbia, Bosnia and Herzegovina, and Dubai.

■ Are you satisfied with what you've achieved?

I am very pleased with what I have achieved so far. Of course, my goal is to continue progressing and developing, and to introduce to the market additional magnesium products in various forms and with different complementary ingredients in the future. This will allow Be Natur to offer its customers even wider choice of products while maintaining the highest standards of quality.

■ What are you most proud of?

I am most proud of the positive feedback we receive from customers about the benefits they experience from using our magnesium, as well as the trust they place in the Be Natur brand every day. I am delighted that our customers have recognized the quality offered by our brand and products. Our guiding principle has always been quality over quantity. As a result, our product range is deliberately limited, with each product offering premium quality, carefully selected and traceable raw materials, and a precisely controlled formulation. The positive feedback and satisfaction of our customers give me the motivation, strength and determination to continue developing the brand and creating new products. Their experiences confirm that our work has a genuine purpose and positively contributes to the well-being of thousands of satisfied Be Natur magnesium users around the world. Be Natur has also gained recognition among elite athletes and Olympians, providing further validation of the quality and credibility of our brand.

For more information: www.benatur.hr



Genadvance™

Revive Bringing Hair Into Heat Styling

New 100% active ingredient turns everyday heat styling into a repair moment, helping restore damaged hair and seal cuticles. With growing consumer demand for salon-quality results at home, this easy-to-use liquid ingredient supports professional at-home hair repair treatments.

Clariant, a sustainability-focused specialty chemical company, has announced the launch of Genadvance Revive, a new functional hair care ingredient designed to bring repair and heat styling together. Activated by heat, Genadvance Revive helps repair hair damaged by bleaching, coloring and environmental stress as consumers blow-dry or straighten it, turning a routine associated with hair damage into an opportunity for repair.

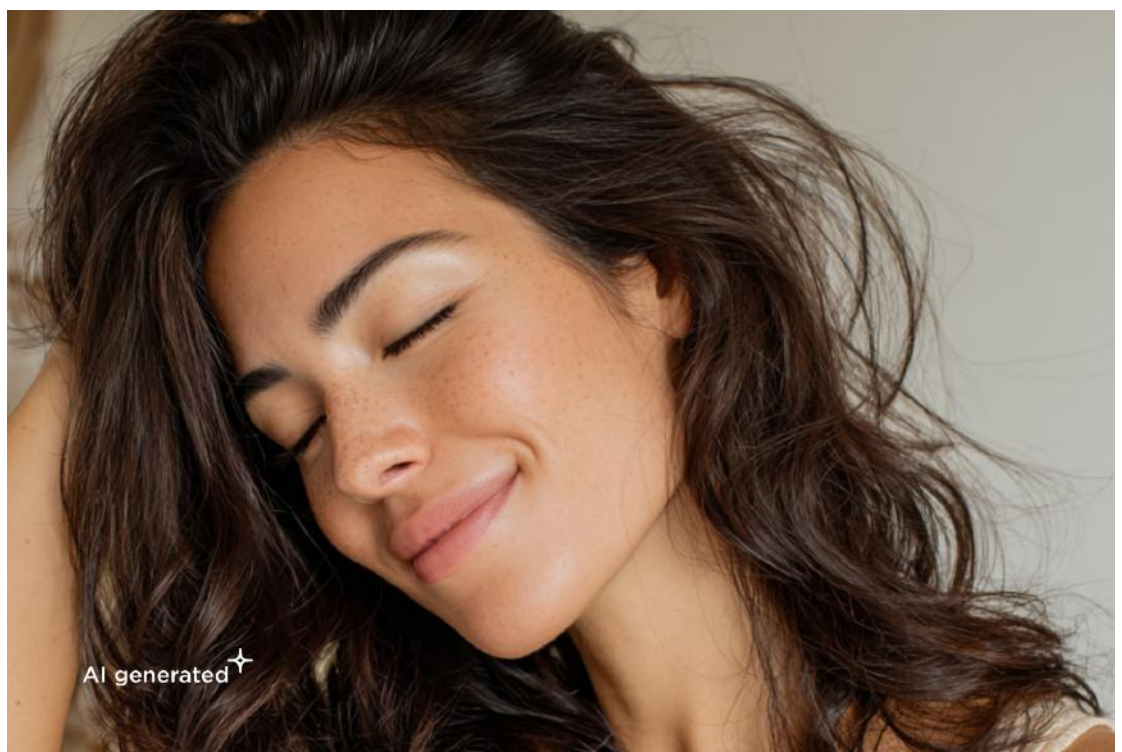
The ingredient will be presented at in-cosmetics Latin America 2026 and will be available globally from the end of September 2026.

Where styling and repair unite

Driven by a generation that colors, chemically

treats, and heat styles more than ever, the demand for repair has never been greater. Sixty-five percent of women report regular use of heat styling tools while simultaneously seeking healthier hair and salon-quality repair results at home. The hair restoration market is set to nearly triple by 2032¹ – and hair-damage management products saw a €139 million sales increase in key global markets², with more than a quarter of consumer-targeted hair influencer posts now highlight "damage repair" as a leading claim.

This shift is being shaped by three converging expectations: consumers seeking hair-health ingredients that work at a structural level going beyond surface-level shine; evolving routines centered around multi-step, science-backed and ingredient-



led haircare; and a "home spa" mindset, with professional-grade results expected from daily routines.

Turning every styling moment into a repair one

Genadvance Revive is designed around these shifting expectations. Instead of asking consumers to choose between styling their hair and caring for it, the ingredient uses the heat already involved in blow-drying or straightening as part of the repair process.

Applied through rinse-off or leave-on formulations, heat from blow dryers or styling tools activates Genadvance Revive to interact with the hair's keratin structure, helping to seal damaged cuticles and protect the hair surface while supporting the restoration of healthier, stronger and smoother hair.

Instrumental testing on bleached hair tresses demonstrated that Genadvance Revive reduced friction by up to 47%, leading to improved cuticle alignment and hair smoothness. It also reduced the energy required for combing by 52%, supporting easier detangling and reduced mechanical stress during grooming.

The ingredient also improved hair protein integrity by 12%, indicating structural repair at the fiber level with instrumental testing showing an improvement in hair shine upon repeated use. Genadvance Revive also helps straightened hair retain its shape under high-humidity conditions, with visibly reduced frizz.

"What sets Genadvance Revive apart is its unique cuticle-sealing mechanism that works with heat styling tools to repair hair from within while doing something already embedded in routines," said Petra Kudla, Global Marketing Manager Hair Care, Care Chemicals, Clariant. "Consumers no longer want to choose between beautiful hair and healthy hair and with Genadvance Revive they don't have to - styling and repair happen together."

A solution for a growing category

Designed for easy integration into modern formulations, Genadvance Revive offers formulators an effective way to deliver advanced hair repair and meets the demands of today's heat-styling routines. Suitable for both rinse-off and leave-in applications in professional and consumer hair care products, Genadvance Revive is a versatile ingredient for brands seeking to address the growing demand for visible, high-performance damage repair solutions – with a formulation made from olive and rapeseed oil-derived ingredients.

Clariant will showcase Genadvance Revive at in-cosmetics Latin America 2026 on September 23-24 at the Expo Center Norte, São Paulo, Brazil. Visitors can experience the new ingredient firsthand and explore how the innovation can elevate their damage repair formulations.

Genadvance™ is a trademark of Clariant.

References:

¹ Source: Maximizer Market Research.

² Year-on-year increase, 2022 to 2023.

Impact of Climate Change on Skin Health Worldwide

More than 40% of countries worldwide have reported climate-related changes in the prevalence and/or severity of skin disease, according to a major international study spanning 136 countries.



The study, presented at the European Academy of Dermatology and Venereology (EADV) Congress 2026, invited representatives from 194 World Health Organization (WHO) member countries to participate in the Global Access to Skin Health Observatory (SkinObservatory) study, a collaboration between the International League of Dermatological Societies (ILDS) and L'Oréal Dermatological Beauty.

Data were collected from 136 countries spanning all four World Bank income groups. Overall, 42.6% reported changes in the prevalence and/or severity of skin disease due to climate change, with significant differences according to income level. More than half of low-income (55.6%) and lower-middle-income countries (52.5%) reported climate-related changes in skin disease, compared with 43.8% of upper-middle-income and 28.3% of high-income countries.

Geographical differences were also substantial, with changes most frequently reported in the Western Pacific Region (64.7%), followed by the Eastern Mediterranean and South-East Asian regions (60.0% each), compared with 16.1% in the European Region. In the African Region, 42.9% of respondents were unsure about the impact of climate change on skin disease, highlighting potential gaps in surveillance and evidence.

Among the 58 countries reporting climate-associated effects on skin disease, 81.0% reported increases in heat rashes and 75.9% in inflammatory skin diseases. Changes in infectious diseases were reported in 62.1%, with half (50.0%) reporting changes in vector-borne diseases.

"The most important finding from our study is that climate change is already associated with negative impacts on skin disease, and these effects disproportionately burden lower-income settings," said study author Dr Esther Freeman. "We often think about the effects of extreme weather on heatstroke, cardiovascular problems and respiratory diseases, but the skin is our front line to climate change."

"Higher temperatures and humidity can increase sweating and skin irritation, while heat, air pollution and other environmental exposures may trigger or worsen inflammation. Shifts in temperature and rainfall can also affect the habitats of mosquitoes, ticks and other disease vectors, potentially allowing them to survive in places where they were previously uncommon." Looking ahead, the researchers call for stronger surveillance, education and locally tailored strategies, particularly in resource-limited settings. "We need to start treating skin health as part of climate-health preparedness," Dr Freeman concluded.

Fi Europe 2026 Agenda Unveiled

Fi Europe, the world's leading food ingredients event, today reveals the full content agenda for its 2026 edition, promising three days of expert analysis, practical inspiration, and the connections that turn ideas into action.



Returning to Messe Frankfurt, Germany, from 17-19 November, this year's show will feature a range of expert talks, panel discussions, and deep dives from academia, start-ups, multinationals, consultants and researchers. "Rapid transformation is redefining what the food, beverage and pet nutrition sectors can offer consumers," said Francesca Berry, Head of Content Programming at Informa Markets. "GLP-1 medications are rewriting R&D briefs, pet owners are applying their own nutritional standards to what they feed their animals, and new technologies are changing what is possible to manufacture at scale. Our 2026 programme brings the expertise behind those shifts into one place, creating a platform where the whole value chain can solve shared challenges, uncover new opportunities and power what comes next."

Formulating food for the GLP-1 era

Rapidly rising GLP-1 use around the world is completely reshaping consumers' appetites, nutritional needs, and expectations. Even among people not using the medication and markets where adoption is slower, interest in weight management, satiety, and blood sugar control has exploded. This is why day three of Fi Europe 2026 is dedicated to a **Weight Management Spotlight** exploring the significant challenges and opportunities within this sector. A highlight of the programme will be an expert editorial session from Sophia Cornelius, Specialised Nutrition Analyst at Mintel, entitled From pharmaceuticals to food: What the GLP-1 era means for nutrition innovation.

Rising expectations in pet nutrition

The new **Pet Food and Nutrition Forum** programme dives into how the continued humanisation of pets is raising the bar in one of the food industry's fastest-growing categories. In Transparency, trust

and consumer expectations in pet nutrition, brings consumer research and regulatory expertise to the question of how businesses innovate ambitiously while staying compliant – and build lasting trust in the process.

A second panel discussion, Scaling sustainable pet nutrition: From consumer demand to commercial reality, turns to making sustainable products commercially viable.

The forces reshaping the global food landscape

The journey from challenge to opportunity to action continues through the **Innovation Hub**, which gathers voices from research, marketing, procurement and regulatory affairs to explore the technologies, regulations and consumer demands driving change across food and beverage.

Lu Ann Williams, Co-Founder and President of Innova Market Insights, returns to reveal *Innova's Top 10 trends in F&B for 2027*, unpacking the consumer behaviours and market shifts set to drive innovation over the coming year. Ina Dawer, Head of Ingredients at Euromonitor International, follows with *Beyond protein: Where FMCG innovation is heading next*, charting the wellness platforms scaling fastest across food, beverages, supplements and beauty, and the demands fuelling their growth.

Further sessions examine the scientific advances and technological breakthroughs moving from laboratory to production line, alongside the retail platforms and buying patterns transforming how finished products reach shoppers.

Securing supply, building partnerships

None of this reaches market without supply chains that can absorb pressure. Day three's **Innovation Hub** spotlight on supply chain resilience brings stakeholders together from across the value chain to examine how the industry strengthens its global sourcing networks, building the foundations that make ambitious innovation possible.

That collaborative spirit runs through the whole event, with a programme of in-person networking events including a **Women's Networking Breakfast**, focusing on the challenges and opportunities faced by women in the food and beverage industry. Another highlight will be the **Future of Nutrition Lunch & Learn** for senior decision-makers. These sessions are designed to give attendees the space to meet peers well beyond their own segment, sparking the conversations and partnerships that will shape the industry long after Frankfurt closes.

For more information: www.figlobal.com



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Why Gummy Supplements Need High-Performance Packaging

As gummy supplements gain popularity among adult consumers, ensuring product stability, shelf life and packaging performance is becoming increasingly important. Guala Closures addresses these challenges with advanced aluminium capping solutions that combine reliable protection, premium aesthetics and sustainability.

The nutraceutical market is undergoing a significant shift as gummy supplements move beyond their traditional association with children. Valued at USD 9.5 billion, the global gummy supplement market is projected to reach USD 15.2 billion by 2030, growing at a CAGR of 8.2%¹. This expansion is partly driven by "pill fatigue", with more than 65% of regular supplement users reportedly seeking more enjoyable and convenient ways to consume daily actives².

From sleep and stress-relief formulations containing melatonin and botanicals to beauty-from-within products based on collagen and biotin, gummies have transformed supplement intake into a more appealing daily ritual. However, their soft structure and high moisture content make them particularly sensitive to humidity, oxygen and temperature fluctuations³. Exposure to ambient air can cause moisture loss or absorption, leading to hardening, stickiness or gummies fusing together. Oxygen and moisture can also accelerate the degradation of sensitive vitamins and botanical ingredients, compromising product quality and shortening shelf life.

From jar to cap: the strategic capping solution

Gummy supplements are typically packaged in jars or containers, often transparent to showcase their appealing colours and shapes. These formats

require reliable, high-performance closures to protect the contents. Guala Closures' Pharma by GC division offers a portfolio of aluminium capping technologies designed to meet different industrial and branding requirements, particularly ROPP and GPI systems.

- **Aluminium ROPP (Roll-On Pilfer Proof) closures:** Designed for functionality and operational efficiency, the aluminium shell is formed directly around the bottle neck during capping, creating a secure, mechanical tamper-evident band. This provides a robust and cost-effective solution.
- **GPI screw caps:** Designed for brands seeking a premium shelf appearance, these hybrid closures combine a plastic inner cap with an aluminium outer shell bonded using hot-melt technology. The plastic component supports reliable sealing and smooth opening, while the aluminium exterior provides a refined, premium look.

Both solutions offer extensive customisation options, including tailored colours, finishes and multi-colour printing, enabling brands to reinforce their visual identity and stand out on the shelf.

Advanced protection and circular performance

Guala Closures' aluminium closures can be combined with advanced liners and induction heat-sealing (IHS) liners to provide an additional hermetic barrier. These solutions help limit oxygen and moisture ingress, reduce the risk of external contamination and extend the shelf life of sensitive formulations.

Aluminium is also infinitely recyclable. Guala Closures manufactures its closures using **53.7% recycled aluminium**, helping nutraceutical brands reduce packaging-related environmental impact while maintaining a premium consumer experience. The company combines these benefits with regulatory safety and industrial expertise, offering brands a primary packaging partner equipped to meet the evolving needs of the nutraceutical market.

References:

- ¹ Gummy Vitamins Market Size, Share & Trends Analysis Report, Grand View Research, 2024.
- ² Consumer Survey on Dietary Supplement Delivery Formats, Innova Market Insights, 2024.
- ³ Next-Gen Gummies: Addressing Manufacturing Challenges to Deliver Best-in-Class Formulations, Nutraceuticals World, 2024.



Why Global Brands Need Third-Party Certification

Independent verification gives companies seeking to export goods an upper hand

AUTHOR:

Chris Kirwin,
Global Director of
Wellness, NSF

The nutraceuticals industry is experiencing significant growth, with approximately three-quarters of consumers globally taking supplements at least occasionally. With greater adoption comes higher scrutiny and expectations among both consumers and retailers for quality and safety across the supply chain.

Industry trends

Several growth drivers are fuelling the increased adoption of nutramedics and cosmetics. Around the world, health consciousness is rising, as is awareness of the value and benefits of preventive care. Functional ingredients such as mushrooms, propolis, l-tyrosine and more have been identified on leading trend lists. Meanwhile, the prevalence of lifestyle-related diseases, in part due to more readily available and accessible information and treatments such as GLP-1s, has led consumers to act more proactively in integrating products into their daily routines.

Plant-based and vegan products are also gaining popularity, as options become more readily available and younger consumers seek more ethical choices. Meanwhile, the aging population is more intentionally integrating functional products into care plans, incorporating natural remedies, such as herbal supplements and essential oils, alongside modern medicine.

With retailers leveraging enhanced distribution channels, such as e-commerce and social selling, wellness products are more accessible than ever and are being further amplified through paid marketing efforts.

Over the last decade, the industry has evolved from a niche category into a global market worth more than half a trillion dollars.

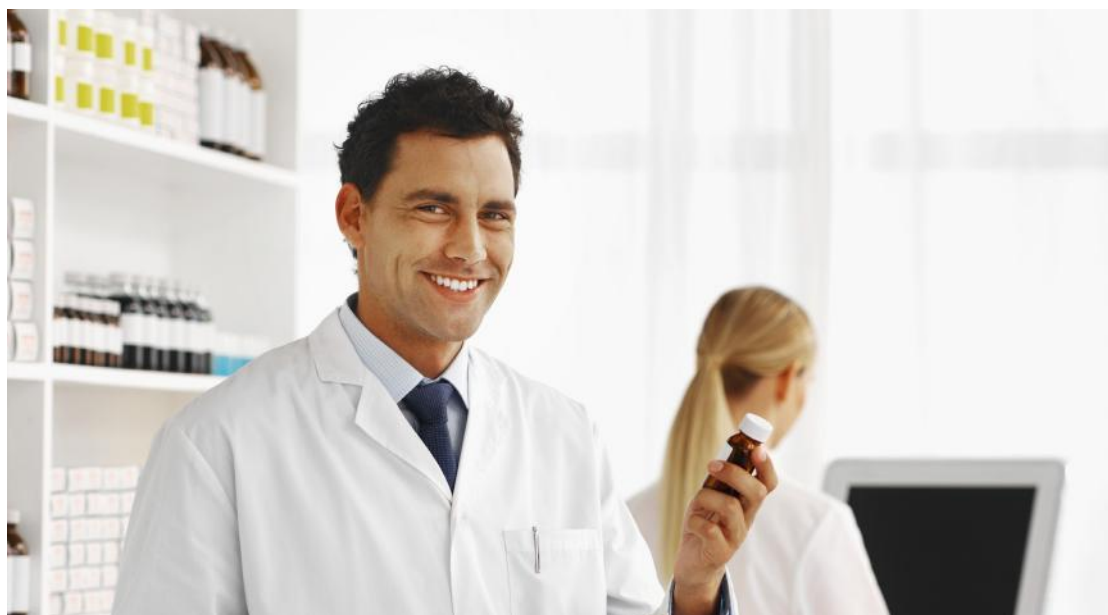
Why third-party standards matter

Today's consumers hold brands and manufacturers to higher expectations when it comes to quality and safety. At the same time, the industry is constantly facing the risk of supply chain disruption due to factors such as geopolitics and climate change, which can disrupt sourcing of botanical ingredients, vitamins, minerals and specialty ingredients. With some products requiring robust, diverse supply chains and multiple ingredients, these disruptions can lead to unreported substitutions, adulteration, contamination and poor raw material quality.

For those seeking to enter new markets, regulatory requirements can present another challenge as they can vary from country to country. Differing standards for ingredients, labelling claims, certifications and quality systems can make exporting extremely complicated. For products to be market-ready, they must achieve regulatory compliance in each market.

These negative impacts on products can lead to recalls, negative brand reputation, and barriers to entry into international markets. As such, manufacturers and retailers must prioritize transparency and robust requirements across the supply chain.

Certification to third-party standards or requirements, such as Good Manufacturing Practices (GMP), which is widely accepted in markets such as North



America, India, Europe and parts of Asia, can help to verify product quality and clear hurdles in international market compliance.

These frameworks can also help influence purchase decisions, with some third-party-verified marks, such as NSF Certified for Sport® and NSF Content Claims, well recognized in certain markets. In fact, according to a [consumer survey](#) from NSF, a leading public health organisation, 78% of US consumers actively research product claims on products, and 85% express a higher likelihood of purchasing supplements with third-party certification.

New verifications, from region to region

As an international organisation, NSF is constantly addressing the link between consumer trust and verified claims by developing and strengthening its certification programs.

Across Asia, countries are increasingly adopting programs such as GMP to standardize best practices across the industry. In India, for example, the Indian Drug Manufacturers' Association (IDMA) is partnering with NSF to provide a tailored Current Good Manufacturing Practices (cGMP) framework for the country's nutraceutical manufacturers. Similarly, in Japan, NSF is working with the International Nutrition and Food Association (AIFN) to support greater information exchange and educational activities for GMP, quality assurance and international standards.

In 2025, NSF published NSF/ANSI 527, a personal care products standard that defines benchmarks for the safety, purity and ingredient-based marketing claims. Designed to support greater product transparency in an industry that is only regulated post-market in the US, NSF/ANSI 527 substantiates the quality of finished personal care products and the safety of ingredients used in cosmetic, personal care and topical over-the-counter products.

In Brazil, the organisation has launched NSF 229BR, a certification for supplements and ingredients that aligns with ANVISA requirements and the needs of the local market. The program evaluates products for the nutritional quality of protein, toxic contaminants, pathogenic microorganisms, mycotoxins and pesticides.

From Latin America to North America, from Asia to Europe, manufacturers are increasingly leveraging third-party verification to successfully enter the US nutrition and wellness marketplace. As consumers place greater emphasis on product quality and safety, trusted indicators of compliance and verification can play an important role in purchasing decisions. With brands such as tmrw from New Zealand and WPink from Brazil touting NSF certification, it is apparent that verification plays a key role in export efforts.

For international brands entering a crowded marketplace, third-party certification can help to reduce barriers to trial and build consumer trust. Increasingly, brands are leveraging certification not only to support compliance, but also to substantiate product claims and strengthen their position in competitive categories. As expectations from consumers, retailers and regulators continue to rise, verified claims are becoming an increasingly important market differentiator.

Skin Health Potential of Pomegranate Extract

A new clinical study highlights the potential of Pomanox® for beauty-from-within applications, with promising findings for facial pigmentation, hydration and elasticity.

A randomised, triple-blind, placebo-controlled trial investigated Pomanox®, a pomegranate extract, in 66 women aged 30–65 with hyperpigmented facial spots. Participants received 367 mg or 700 mg of the extract, or placebo, daily for 12 weeks. The results extend previous research on Pomanox® and build on in vitro findings suggesting effects on collagen and hyaluronic acid metabolism, oxidative stress and tyrosinase activity, an enzyme involved in melanin production.



In exploratory analyses, the 367 mg/day group showed favourable changes in facial spot pigmentation and the melanin index of surrounding skin compared with placebo. Differences were apparent after four weeks, and the favourable effect on surrounding skin pigmentation persisted through week twelve.

Hydration and elasticity

After 12 weeks, skin hydration improved more favourably with 367 mg/day than with placebo, suggesting a potential role in maintaining hydration under the study conditions. Skin elasticity also improved from baseline with 700 mg/day at weeks four and twelve, and with 367 mg/day at week twelve.

Antioxidant activity and microbiota

Exploratory analyses showed trends in antioxidant markers, including glutathione and superoxide dismutase, while increased urinary polyphenol metabolites indicated the absorption and metabolism of pomegranate compounds. Preliminary microbiota findings included nominal increases in *Bifidobacterium* and *Lactobacillus* in the skin, as well as *Prevotella* in the gut. These observations warrant further investigation; effects on skin barrier function and inflammation have not yet been established.

"Pomaskin™ adds an exciting clinical dimension to the Pomanox® research programme. The findings highlight the extract's potential for beauty-from-within applications and provide a valuable basis for formulation development, as well as further clinical investigation," says Andrea Zangara, Scientific Communication Advisor at Euromed.

Pomanox® P30 is standardised to contain at least 30% punicalagins and produced using Euromed's proprietary water-based Pure-Hydro Process®.

More information: www.euromedgroup.com

Reference:

Costa A, Calderón-Pérez L, Domingo-Tàrrach A, et al. Effects of pomegranate extract Pomanox on facial skin aging parameters: a randomized triple-blind placebo-controlled trial. *Scientific Reports*. 2026;16:30192. doi:10.1038/s41598-026-72115-8.

SupplySide Global Brings Together Ingredient and Supplement Ecosystem for Discovery, Education and Business Acceleration

1,600+ exhibiting companies, 135 hours of education and an additional expo hall day bring innovation to the forefront of the 2026 event

SupplySide Global, the world's leading trade show and conference for the supplement, food, and beverage industries, returns to the Mandalay Bay Convention Center, October 26-30, 2026, with the Expo Hall open October 28-30. Along with Flagship Sponsor KSM-66 Ashwagandha & SRI-81 Shatavari, SupplySide Global brings together ingredient suppliers, contract manufacturers, finished product brands, packaging experts, lab services and other solution providers all in one place.

SupplySide Global is where serious solutions, stra-

tegic conversations and real industry progress happen. The event welcomes emerging brands, global powerhouses and everything in between, with the common thread being a commitment to innovation. SupplySide Global places attendees directly in front of ingredient suppliers and service providers with cutting-edge offerings, gathering manufacturers, distributors, retailers, health practitioners, food service professionals, investors, suppliers and business services to discover the latest ingredients, products and solutions in the ingredient and supplement,





health, pet care and wellness industry.

"SupplySide Global continues to be the epicenter of collaboration for the health and nutrition industry," said Jeff D'Entremont, Senior Vice President, SupplySide Global. "We continue to expand the event's educational programming, introduce dedicated zones for new exhibitors and products, and deliver unparalleled networking opportunities, and create an environment where the entire ecosystem can come together to drive the future of wellness forward. This year's event is the cornerstone to connecting the right people with the right solutions at the right time."

A strategic experience for buyers

For buyers, SupplySide Global is a high-impact, strategic experience designed to link key players in the health and nutrition industry. Whether exploring new ingredients, diving into regulations, or scouting partners, this premier event guarantees connections with leading suppliers, access to industry leaders, and the latest insights on key trends moving the food, beverage, dietary supplement, personal care, and pet health markets forward.

Industry leaders confirmed

Exhibitors confirmed to attend include Cargill, ADM, dsm-firmenich, ACG, Lyfe Group, Blue Pacific Flavors, American Instants, Inc., FoodPharma, and GOED OMEGA-3, among 1,600+ total exhibiting companies.

Registered buyers include Conagra Brands, Herbalife, Keurig Dr. Pepper, Mars, Nature's Bounty, Nestlé, Thorne, and The Coca-Cola Company.

Dedicated zones for new discoveries

New Exhibitor Zone: This area on the show floor has been carved out exclusively to uncover offer-

ings never-before-seen at SupplySide Global. Attendees can explore innovative ingredients and cutting-edge solutions brought by companies making their debut at this year's show.

New Products Zone: Designed to highlight ingredients and finished products at the forefront of innovation and invention, the New Products Zone is in the Bayside Foyer on the way to the Expo Hall. Visitors can source the latest offerings to hit the market and learn about the exhibitors producing them.

Ingredient idol returns for sixth year

Returning to SupplySide Global for the sixth year is Ingredient Idol, featuring two separate competitions where the supplement and food & beverage industry's brightest ingredient breakthroughs. In 2026, both competitions showcase what is new, what is next, and what could redefine the future of wellness, with a lineup of standout ingredients launched no earlier than January 1, 2025.

These fast-paced, live competitions focus on the industry's most talked about health categories. Three finalists in each category, selected by SupplySide Supplement Journal and SupplySide Food & Beverage Journal editors, will pitch their ingredients to a panel of expert judges and a live audience.

Comprehensive educational programming

SupplySide Global 2026 delivers 135 hours of education designed to meet the needs of professionals at every career stage. The event's multi-tiered learning approach includes both high-level strategic content and foundational programming across eight specialized tracks.

Expo hall education

Main stage programming spans multiple venues

throughout the show floor, including the Future of Food & Beverage Stage, Innovation Stage, and Supplement Solutions Stage, featuring industry thought leaders and cutting-edge insights.

Foundational learning opportunities

Beyond the Expo Hall, upgraded pass holders can access additional education offerings designed to build core competencies and practical skills:

- **Introductory courses** covering essential industry fundamentals and best practices
- **Expert-led panels** featuring industry veterans sharing practical insights and real-world applications
- **Classroom-style education sessions** providing in-depth, structured learning in an intimate setting
- **Professional development workshops** focused on skill-building and career advancement
- **Hands-on training programs** delivering practical, actionable knowledge attendees can immediately apply

Educational tracks

All programming is organized across key focus areas:

- Artificial Intelligence
- Innovation & Formulation
- Professional Development
- Regulatory
- Supply Chain
- Sustainability
- Longevity
- Trends

A main conversation for forward-looking industry education is the State of the Industry session, presented by industry leaders from **Systems Bioscience**, **Mintel**, and **Corvus Blue LLC**, moderated by SupplySide. The session will discuss health and nu-

trition, consumer trends, supply chain, and technology.

The full education agenda is available at www.SupplySideGlobal.com.

Facilitated networking opportunities

SupplySide Global 2026 offers multiple networking opportunities designed to foster meaningful relationships. The Networking Pub at SupplySide Global will host:

- **Speed Networking:** Designed to spark meaningful connections through five 10-minute, one-on-one sessions for seasoned professionals and industry newcomers alike.
- **Accelerating Newcomers in the Industry:** A specially curated networking session for newcomers to connect with others in a welcoming, energizing environment. This event is in partnership with SupplySide Fresh.
- **Trends Mixer:** A curated networking opportunity designed to extend the conversation beyond the stage, allowing attendees to connect over shared insights from trend-focused programming.
- **Innovation Mixer:** Attendees and exhibitors alike are invited to unwind, share perspectives and explore what is pushing food, beverage and supplements forward.
- **Regulatory Mixer:** A networking event designed for anyone looking to stay sharp on compliance, policy and what is coming down the pipeline in food, beverage and supplements.
- **Building a Better World Community Meetup:** Event with 501(c)(3) charitable partners where attendees, exhibitors, and partner communities connect around a shared commitment to public health, science, education, inclusion, transparency, and access.

To learn more, visit: www.SupplySideGlobal.com.





**BOOTH
#6519**

Arjuna Natural will spotlight its award-winning women's health portfolio, including **new research on Rhuleave-K®**, a turmeric and boswellia combination for fast-acting PMS relief and lower back pain, as well as its Shoden® (root & leaf) and Shoden®-R (root-only) ashwagandha extracts.

With continued industry discussion around ashwagandha quality, standardization, and root-versus-leaf ingredients, Blake Ebersole of the Ashwagandha Standards Alliance will be available to meet at Arjuna's booth (and other ASA member booths) for its "Ask Me Anything Ashwagandha" segment, providing the latest updates on the ingredient category. Arjuna's team can also offer perspective on what brands should consider when evaluating ashwagandha ingredients, including standardization, analytical methods, plant parts, and matching ingredients to the research behind them.

Arjuna will also sample gummies and chocolates featuring Shoden-R, standardized to 35% withanolide glycosides and formulated at just 60 mg per serving. Finally, Arjuna will host a giveaway at its booth.

Chase Johnston, VP of Operations, and Nipen Lavingia, Brand Innovation Advisor, will be available for media meetings.

To learn more, visit: <https://arjunanatural.com/>



**BOOTH
#2945**

Arla Foods Ingredients will showcase three new personalised clear protein shake concepts, designed for different performance goals, exercise occasions and active lifestyles.

Responding to growing demand for lighter, fruitier and more refreshing alternatives to traditional milky protein shakes, three concepts combine high-quality Lacprodan® whey proteins with select functional ingredients:

BUILD – A resistance shake with Lacprodan® ISO. RefreshShake and creatine for strength and power activities such as weightlifting, strength training and CrossFit.

SUSTAIN – An endurance shake with Lacprodan® Pro20, carbohydrates and electrolytes for running, cycling and other endurance-focused activities.

MOVE – A mobility shake with Lacprodan® ISO. WaterShake and collagen for mobility-focused activities including yoga, pilates, gymnastics and dance.

Peter Schouw Andersen, Senior Director, Performance Nutrition at Arla Foods Ingredients, said the concepts demonstrate the versatility of clear whey

protein as a foundation for personalised sports nutrition, offering convenient, great-tasting solutions tailored to different consumer needs and performance goals.

The three personalised shake concepts will be presented alongside three additional innovations: **AirBar**, an aerated milk protein bar featuring Nutrilac® PB-8420; a **high-protein, water-based shot** for GLP-1 companion nutrition, featuring Lacprodan® BLG-100 and delivering 21g protein per 100 ml; and a **sparkling protein soda** made with Lacprodan® Pro20, combining a refreshing soft-drink format with high-quality whey protein isolate.

To learn more, visit: <https://www.arlafoodsingredients.com/personalised-clearshakes/>



**BOOTH
#5065A**

BioVivo Science is **celebrating its first year of operations and a recent milestone: achieving organic certification for its facility and for its organic broccoli seed. The company is also debuting VeriPalmetto™**, its authenticated, U.S.-harvested, U.S.-made saw palmetto solutions for hair health and men's wellness, along with American Ginseng, Natural Caffeine from Green Tea, Stevia, and more.

Located in Indiana, **BioVivo Science operates the largest botanical extraction and toll processing facility of its kind in the United States.** This facility strengthens global supply chains, fosters local innovation, and supports the growing U.S. industries in dietary supplements, food, beverages, personal care, and pet nutrition.

Chris Smith, Director of Tolling & International Sales, and James Roza, VP of Technical Services, will be available to meet to discuss how domestic extraction and toll processing can support ingredient authentication, traceability, and supply-chain resilience across the dietary supplement, food, beverage, and pet nutrition markets.

To learn more, visit: <https://biovivoscience.com/>

VIVOMEGA

**BOOTH
#4152**

GC Rieber VivoMega will focus on the critical importance of **omega-3 supply-chain diversification amid changing marine-resource dynamics**, including the role of algal EPA and DHA alongside marine sources.

The company will showcase its broad portfolio of omega-3 algal and marine concentrates that deliver highly bioavailable triglyceride forms of omega-3s with superior purity, taste, and oxidation standards at varying price points.

VivoMega is also promoting its new partnership with OmegaQuant and offering attendees a hands-

on, personalized experience with free omega-3 index testing, along with a sample of its premium algal omega-3s to test levels before and after supplementation.

Ståle Sjøfving, Chief Commercial Officer, and Merethe Thomassen, Communications and Marketing Manager, will be available to discuss where the omega-3 supply chain is headed, what formulators should consider when evaluating fish versus algal EPA and DHA sources, and how brands can approach greater supply diversification.

To learn more, visit: <https://vivomega.com/>



BOOTH
#2937

As functional ingredients expand beyond traditional powders, capsules, and beverages, product developers are exploring new ways to bring functionality into familiar food formats without compromising the sensory experience.

GNT will showcase two colorful snack pairings featuring creatine incorporated into potato chip seasonings. The concepts demonstrate how color can reinforce flavor cues, create visual contrast, and help differentiate functional products in crowded categories.

The blue cheese-inspired concept pairs a smooth blue dip made with whipped cottage cheese and sharp Vermont cheddar with vibrant red-orange, hot-wing-seasoned potato chips.

GNT's experts will also be available throughout the event to highlight how plant-based EXBERRY® colors can support innovation across functional foods, performance nutrition products, and emerging wellness applications.

Marty Gil, Key Account Manager at GNT, said: "We're seeing growing interest in bringing functional ingredients into familiar foods and snacks rather than just traditional supplement formats. With these concepts, we wanted to show how far you can push that idea while still creating something that feels fun, flavorful, and visually exciting."

To learn more, visit: www.exberry.com



BOOTH
#5065B

Layn Natural Ingredients will spotlight its monk fruit portfolio as fall marks the annual harvest season and an important time for securing supply for 2027. It will also **debut its monk fruit decoction powder and liquid**, designed to give food, beverage, flavor, and nutrition brands more formulation flexibility and broader global market opportunities.

The company will also **showcase science-backed SophorOx®**, recently named the 'Ingredient Choice Awards' winner for weight management, **Galacan®**, a revolutionary water-soluble beta-glucan, and its **NMN & NAD** produced using precision fermentation

and enzymatic catalysis.

Layn will also highlight **SteviUp® M2**, an advanced version of Reb M that offers superior solubility and a cleaner, sugar-like taste.

Layn invites everyone to **sample their no-sugar-added mango sorbet and functional beverages** at the booth to experience these benefits for themselves.

Elaine Yu, President, James Roza, CSO, and Doris Ip, Senior Marketing Manager, will be available for meetings.

To learn more, visit: <https://layncorp.com/>



BOOTH
#5853

Prinova, the leading supplier of ingredients, nutrient premixes, and contract manufacturing solutions will demonstrate innovative functional beverage and supplement concepts that address key consumer trends. They include:

- **PreSip & PostSip** – a hangover recovery concept comprising a PreSip capsule to consume prior to drinking and a PostSip stick pack for the morning after, both containing Setria® (L-glutathione) to support natural detoxification processes. PreSip also features ginger root extract and milk thistle extract, while PostSip includes natural caffeine, plus an electrolyte blend to support hydration.
- **Clear protein powder beverage** – a clean-tasting, refreshing drink in sherbet flavor offering high-protein functionality without the heaviness of a traditional shake. Protein remains a megatrend, with Innova Market Insights research showing that three in five consumers intend to boost their protein intake compared to last year.
- **Sunproof** – a "love your skin from within" supplement concept containing Setria® and Lutemax 2020 (marigold flower extract), both of which offer antioxidant benefits.

Prinova will also be demonstrating NutriPaw, a daily nutrition mix concept for dogs. In the US, 71 million households own a dog, and a recent survey of nearly 10,000 US dog owners found 56% believe their pets should eat a clean, balanced diet. NutriPaw features chicken broth, organic mushrooms, and organic turmeric root.

Dan Force, VP Innovative Products & Customer Category Management at Prinova USA, said: "We are delighted to showcase our great-tasting, functional nutrition concepts at SupplySide Global – both for consumers and for their much-loved pets. They highlight how we can help brands develop on-trend products in delicious, convenient formats that meet the needs of today's consumers. Offering market insights, formulation expertise and a vast range of ingredients and premix solutions, Prinova is the ideal partner for creating exciting, functional nutrition products with real shelf appeal."

To learn more, visit: <https://www.prinovaglobal.com/>



BOOTH
#6177

PhytoGaia, leading supplier of palm phytonutrients, returns to SupplySide Global 2026 with new clinical research insights, branded ingredient solutions and product concepts spanning healthy ageing, beauty, nutrition and pet wellness. PhytoGaia will showcase how its research translates scientific discoveries into new opportunities and introduce its **Annual Research Grant Programme**.

STGaia®, an award-winning plant-based squalene and tocotrienol complex, will be presented through innovative product concepts highlighting its potential for healthy ageing, longevity, and beauty-from-within. Recently named **Ingredient of the Year: Healthy Ageing** at the NutraIngredients Asia Awards 2025, STGaia® offers an "Outside-In and Inside-Out" approach to supporting these growing market segments.

PhytoGaia will share new findings from its clinical research programme on **TocoGaia**®, its natural full-spectrum tocotrienol/tocopherol complex. Studies related to metabolic dysfunction-associated steatotic liver disease and alcohol-associated fatty liver disease highlight its potential role in supporting liver health.

The company will present results from an 8-week randomized, placebo-controlled canine clinical study investigating skin and coat health, including hydration, pruritus, redness, lesions and shedding. Recently recognized as **Pet Ingredient Innovation of the Year 2026, PetGaia™** will also be showcased in chewable tablets, softgels and dropper formats, including PawGaia™.

PhytoGaia will also showcase product concepts across healthy ageing, beauty wellness and pet wellness, demonstrating how its branded ingredients can be developed into innovative applications.

To learn more, visit: <https://www.phytogaia.com/>



BOOTH
#5473

Saanroo will highlight **new human clinical research on Trpti™**, its bioavailable OEA ingredient, showing increased **GLP-1 and GIP responses detectable within 15 minutes** of supplementation. The findings add to previous research examining Trpti's role in metabolic health, weight management, and the gut microbiome.

The company will also present a **new study on HairAGE**, a billygoat weed extract studied for hair health and color as a topical and hair density as an ingestible.

Dr. Amanda Rao, renowned researcher at RDC Global, will present "Advancing Metabolic Health: Clinical Insights on Oleoylethanolamide (OEA)," shar-

ing data and clinical insights into oleoylethanolamide (OEA) and its role in metabolic health.

Jennifer Chase, Business Development Director, will contribute to "Healthspan: Living Well Longer – Solutions for Mind and Mobility," focusing on solutions that support mental well-being, mobility, and a longer, healthier life.

To learn more, visit: <https://www.saanroo.com/>



BOOTH
#4149

TriNutra will present **new research examining the gut-stress axis**, adding to its growing body of research exploring how ThymoQuin®, its standardized USP black seed oil, may interact with the gut microbiome and the body's stress-response pathways.

Across four investigations, ThymoQuin® has been studied at a clinically validated dose of 500 mg/day, with research providing insight into the **hypothalamic-pituitary-adrenal (HPA) axis and microbiome balance**.

Morris Zelkha, CEO, and Elzaphan Hotam, Commercial Director, will be available for meetings and can discuss the growing interest in the gut-brain/stress connection, why the industry is moving beyond traditional "stress support" positioning, and what emerging microbiome research could mean for next-generation formulations.

To learn more, visit: <https://thymoquin.com/> and <https://www.trinutra.com/>



BOOTH
#4071

Unibar will **debut SeQuin™**, a new combination of sea buckthorn oil and **thymoquinone** designed to support women's healthy aging, hydration, and beauty. They are also showcasing the latest formulation of CapsiClear® under its **EyeVedic™ ingredient platform**, which combines Ayurvedic botanicals with scientific validation for applications targeting vision and healthy aging across dietary supplements, functional foods, and medical foods.

To promote its new ingredients, Unibar is also inviting SSG attendees to its booth for a fun, interactive game with prizes. More details to come!

Mit Metha, Executive Vice President, and Doug Lynch will be available to discuss the new ingredients and the growing convergence of beauty, healthy aging, and eye health.

To learn more, visit: <https://unibarcorp.com/>

TriNutra to Showcase New Research Examining the Gut-Stress Axis

TriNutra will unveil new clinical and laboratory findings on ThymoQuin® and the gut-stress axis at SupplySide Global 2026, including improvements in cortisol, sleep quality, stress resilience and gut microbiome balance. The latest research further explores how the standardized black seed oil may help support the body's response to stress and microbiome health.

TriNutra, the supplier of ThymoQuin® premium USP black seed oil, will present new research on the gut-stress axis at SupplySide Global 2026, highlighting the dual effects of ThymoQuin in recalibrating and balancing the spiraling biofeedback loop that the stress response and gut microbiome have on each other and on our well-being.

ThymoQuin® is TriNutra's premium, standardized USP black seed oil, with clinical data demonstrating its positive effect on the Gut-Stress-Axis. It is the first clinically validated supplement to recalibrate the stress, hypothalamic-pituitary-adrenal (HPA) axis and selectively balance the gut microbiome at a single 500 mg/day dose. The four clinical and laboratory research investigations support outcomes in stress, cortisol, sleep, mood, immune, metabolic, cardiovascular, and microbiome-balanced biodiversity.

"What is exciting about this research is that we are beginning to see a more complete picture of how the gut and the body's response to stress may be connected," said Morris Zelkha, CEO of TriNutra. "Each study adds another piece to that picture and gives us new areas to investigate. We plan to continue investing and expanding the science behind ThymoQuin and its adaptogenic resilience, microbiome recalibration, and its proven long-term safety, which we are referring to as the Gut-Stress-Axis."

ThymoQuin® is standardized to at least 3% thymoquinone, greater than 1% p-cymene, and no more than 1.25% free fatty acids. It meets the USP monograph quality standards and has numerous patents for its composition and use.

During SupplySide Global, TriNutra will highlight new findings from its gut-stress axis research, including clinical results reporting reductions in cortisol ranging from 23% to 44%, a 29% improvement in the DHEA-to-cortisol ratio (stress resilience), a 31% improvement in sleep quality, and a 66% increase in *Streptococcus thermophilus*, alongside further blood pressure control, gut microbiome, cortisol, and mood outcomes from its previous studies.

TriNutra will also share new laboratory research exploring ThymoQuin's effects on the gut microbiome. In an in vitro study conducted across three in-

dependent batches, *S. thermophilus* growth increased up to 53-fold within the study's identified concentration range, while *L. plantarum* and *A. muciniphila* were preserved and *K. pneumoniae* was inhibited by more than 94%. These benefits are seen within a hormetic window that exists in the gut when taking a daily 500 mg ThymoQuin dose.

The research is currently available as a 2026 bioRxiv preprint and is in press in Food Science & Nutrition.

SupplySide Global attendees can visit TriNutra at booth #4149 to learn more about the research, explore formulation opportunities, and meet with the TriNutra team. The company will also host a ThymoQuin® giveaway at booth #4149, where attendees can enter for a chance to win a year's supply of a finished ThymoQuin® supplement.

To learn more, visit <https://thymoquin.com/> and <https://www.trinutra.com/>

BOOTH
#4149



GC Rieber VivoMega to Highlight Omega-3 Supply Diversification and Long-Term Reliability

GC Rieber VivoMega will showcase its expanding portfolio of marine and algal omega-3 concentrates, backed by a new \$20 million investment to strengthen production capacity and supply-chain resilience. At SupplySide Global, the company will also highlight its new partnership with OmegaQuant, offering attendees free Omega-3 Index testing alongside algal omega-3 samples.

BOOTH
#4152

In 2023, GC Rieber VivoMega expanded into the algal omega-3 category by introducing its portfolio of non-GMO, certified vegan algae oils, giving customers an additional source of EPA and DHA alongside its established marine portfolio. Today, VivoMega's broad algal portfolio includes DHA and EPA+DHA concentrates, offering manufacturers additional sourcing and formulation options as the company continues to diversify and expand its omega-3 offerings.

"Over our 60-year history, we have seen the omega-3 industry evolve and have continually adapted to meet changing market needs," said Snorre Glærum Strand, CEO at GC Rieber VivoMega. "We understand

the immediate challenges facing the industry, but we are also looking ahead. Our experience allows us to respond to the needs of today while continuing to invest in the technology, capacity and solutions that will support the omega-3 category for years to come."

As part of its long-term approach to supply-chain resilience, GC Rieber VivoMega is investing an additional \$20 million USD, building on its 2024 expansion. The investment further strengthens the company's production capabilities across both fish and algal omega-3 concentrates, giving customers greater sourcing flexibility as the category continues to evolve.

Snorre continued, "The future of omega-3s isn't just about supply; it's about building a supply chain resilient enough for a changing world."

GC Rieber VivoMega offers a wide range of EPA and DHA solutions across marine and algal sources. With a continued focus on superior quality and sensory attributes, sustainability, and traceability, the company provides customers with flexible solutions designed to meet evolving market and formulation needs.

At SupplySide Global, GC Rieber VivoMega will also highlight its new partnership with OmegaQuant, an independent, CLIA-certified lab that offers Omega-3 Index testing to researchers, clinicians, and the public. At booth #4152, attendees can participate in free Omega-3 Index testing and receive VivoMega™ algal omega-3 samples. Participants will test their omega-3 levels before supplementation and again following the sampling period, providing a before-and-after look at changes in their Omega-3 Index.

To learn more about VivoMega's sustainable, premium-quality marine and algae omega-3 concentrates, visit [VivoMega.com](https://www.vivomega.com).



Arjuna Natural to Spotlight Women's Health Innovation and Ashwagandha Quality

Arjuna Natural will spotlight its latest women's health innovations, including Rhuleave-K® for rapid menstrual cramp relief and Shoden® ashwagandha extracts targeting stress, sleep and cognitive performance. The company will also highlight new research, ingredient quality and standardization at SupplySide Global.

Rhuleave-K® is a patented blend of natural bio-active compounds derived from turmeric, boswellia, and Sesame. This proprietary formula is designed to offer fast relief from menstrual cramps. It incorporates SPEEDTECH® technology to preserve the effectiveness of these components and support overall relief. Rhuleave-K® has new research, currently under review, further backing its efficacy in rapid and natural relief.

Arjuna will also highlight its Shoden® and Shoden®-R ashwagandha extracts standardized to 35% withanolide glycosides and their potential to support female health, including stress, sleep, and cognitive performance, including measures related to brain fog.

"We are excited to showcase our women's health ingredients while bringing attention to the importance of ingredient quality, standardization, and transparency," said Chase Johnston, VP of Opera-

tions at Arjuna Natural. "As consumers and the industry alike continue to evaluate botanical ingredients and the research backing them, we are proud to share our clinical findings and their potential in health and well-being."

Additionally, Blake Ebersole of the Ashwagandha Standards Alliance (ASA) will be available at Arjuna's booth, as well as other ASA member booths, for the organization's "Ask Me Anything Ashwagandha" segment. Ebersole will provide updates on the ingredient category and answer questions around quality, standardization, and analytical considerations.

SupplySide Global attendees can sample gummies and chocolates with Shoden-R, showcasing how the extract can be integrated into convenient, clean-label functional foods and beverages.

For more information visit:
<https://arjunanatural.com/>

BOOTH
#6519



Arla Foods Ingredients Showcases Personalised Clear Shake Innovation

The three new concepts target different performance goals, from strength and endurance to mobility, combining high-quality whey proteins with functional ingredients and responding to growing demand for lighter, fruitier protein beverages.

BOOTH
#2945

Arla Foods Ingredients will demonstrate three new personalised clear shake solutions offering multiple benefits.

The concepts demonstrate how brands can move beyond "one-size-fits-all" protein shakes to create protein solutions tailored for different performance goals, exercise occasions and active lifestyles.

They tap into the growing market demand for clear protein beverages, which are emerging as a lighter, fruitier, and more refreshing alternative to traditional milky protein shakes.

Combining high-quality Lacprodan® whey proteins with selected functional ingredients, the three concepts are built around a shared recovery need and three distinct performance outcomes:

- BUILD: A Resistance Shake with Lacprodan® ISO. RefreshShake + creatine, tailored for strength and power-focused activities such as weightlifting, strength training and CrossFit.
- SUSTAIN: An Endurance Shake with Lacprodan® Pro2O + carbohydrates and electrolytes, tailored for endurance-focused activities such as running, cycling and endurance sports.
- MOVE: A Mobility Shake with Lacprodan® ISO. WaterShake + collagen for mobility-focused activities such as yoga, pilates, gymnastics and dance.

Peter Schouw Andersen, Senior Director, Performance Nutrition at Arla Foods Ingredients, said: "These exciting new personalised clear shake concepts demonstrate how our clear whey protein isolates can help brands tailor great-tasting solutions to different consumer needs and performance goals. Targeting a wide range of sports nutrition users, from dedicated athletes to everyday active consumers, they deliver high-quality protein and functional benefits

in an easy-to-use, convenient product experience. From strength and power to endurance and hydration or mobility and flexibility, the concepts demonstrate the versatility of clear whey protein as a foundation for personalised sports nutrition. With dual benefits trending in the sports nutrition space, our solutions open up opportunities for premium, benefits-driven innovation with clear protein shakes."

Visitors to SupplySide Global will be able to sample the personalised shake solutions at Booth #2945, alongside three additional concepts:

An aerated milk protein bar with a light, aerated texture that brings a new sensory experience to the protein bar category. Combining nutrition and indulgence with an airy bite, AirBar features Nutrilac® PB-8420, which delivers stable aeration and texture stability throughout processing and shelf life.

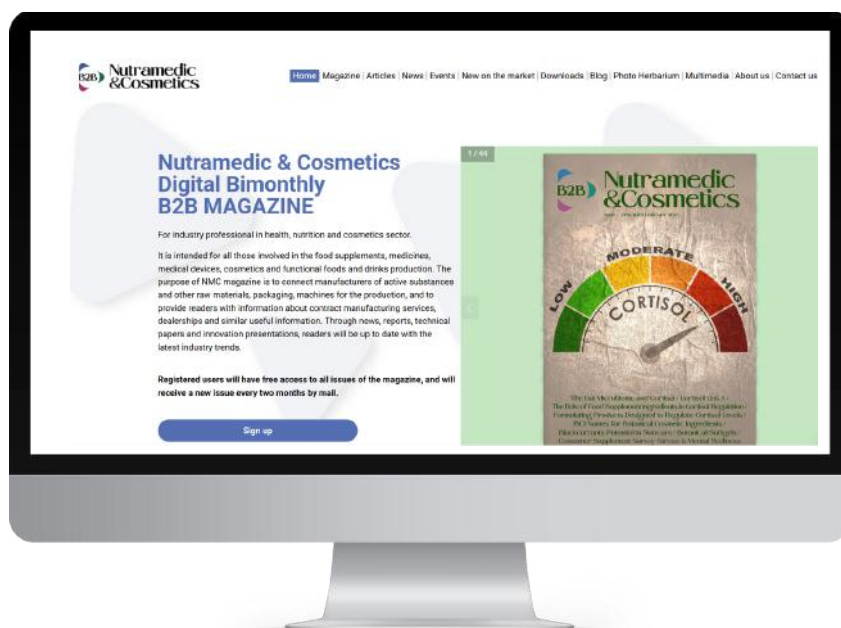
- A high-protein, water-based shot for GLP-1 companion nutrition in a small, convenient format designed for consumers with reduced appetite. Featuring Lacprodan® BLG-100, it contains 21g protein per 100ml and is fat-free, sugar-free and low in lactose, offering great taste, minimal astringency and ambient shelf-life stability.
- A protein soda in a refreshing, sparkling format combining soft drink appeal with high-quality whey protein isolate. It's made with Lacprodan® Pro2O, which enables clear, low-viscosity protein sodas with a clean taste, low astringency, and strong flavour expression, supporting stable, fruity, functional soft drinks with added protein.

To find out more about Arla Foods Ingredients' personalised, clear shake concepts, visit: <https://www.arlafoodsingredients.com/personalised-clearshakes/>



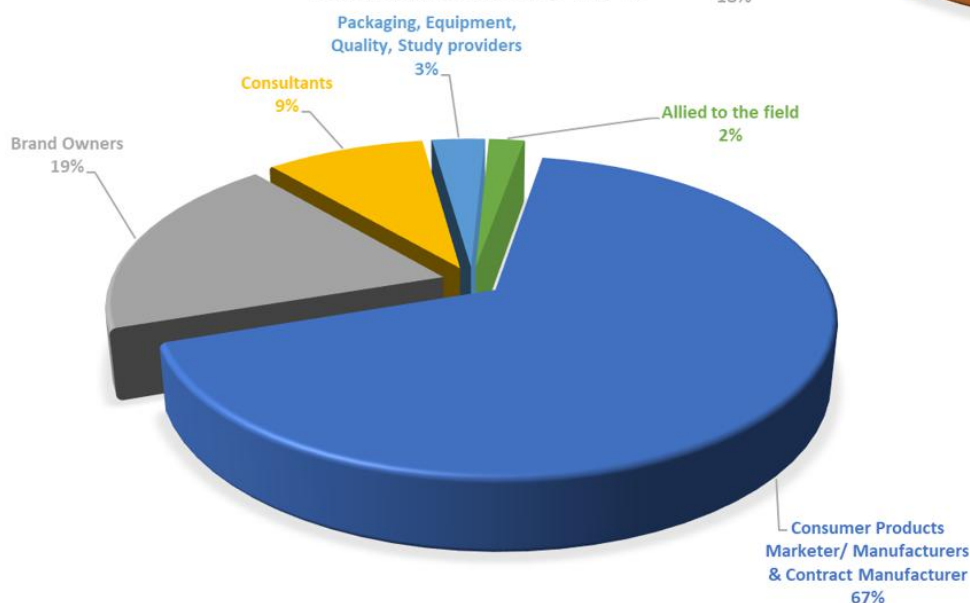


Nutramedic &Cosmetics

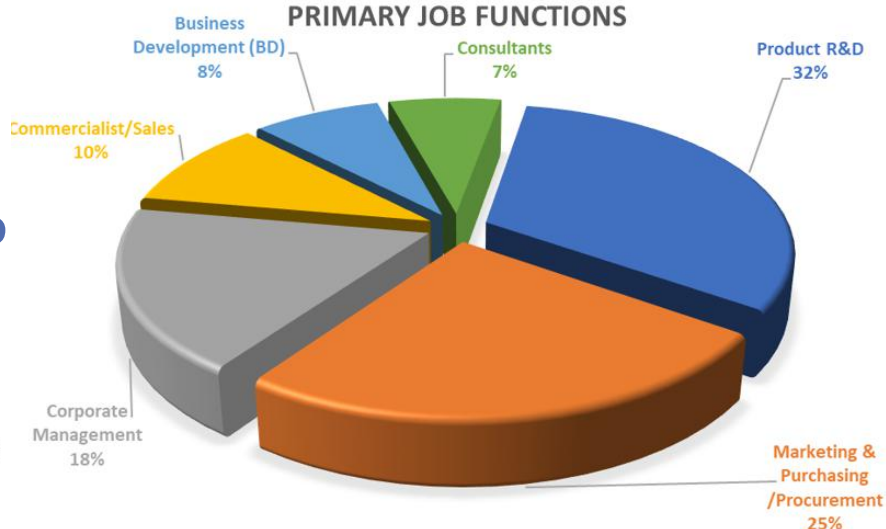


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