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2026 FLAVOR LEADERS & NEWSMAKERS

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Camille & Charlotte are the winners of the Capture What Moves photo competition held by MANE.

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The New Era of Flavor Leadership

Executives are aggressively redefining how flavor innovation drives commercial value in a volatile market.

Welcome to the 2026 edition of our "Flavor Leaders & Newsmakers" issue. This curated collection of strategic insights from the world's taste pioneers—including Robertet, Symrise, Scentium, Sensient, McCormick, Givaudan and dsm-firmenich—arrives at a definitive turning point for the industry.



Flavor is now engineered as an integrated, multi-sensory system where taste, mouthfeel, and texture function as a unified matrix.

The corporate agendas presented in these reports show an executive tier that is aggressively redefining how flavor innovation drives commercial value in a volatile market. As you analyze these profiles, several macro trends emerge that cut across all competitive segments.

First, traditional category boundaries have collapsed. Flavor is now engineered as an integrated, multi-sensory system where taste, mouthfeel, and texture function as a unified matrix. This capability is critical to fulfilling the clean-label, low-sugar and low-sodium reformulations demanded by wellness-focused consumers without sacrificing any culinary pleasure.

Second, the industry has responded with remarkable speed and agility to tectonic dietary shifts, most notably evidenced by the fast-expanding GLP-1 weight-management consumer segment. By deploying advanced receptor-based modulation tools and complex masking agents, flavor chemists are ensuring that nutrient-dense, downsized portion matrices maintain absolute sensory satisfaction.

Finally, the upstream validation engine of flavor R&D is undergoing a digital revolution. Artificial intelligence, machine learning, and cognitive neuroscience are now deeply integrated into standard creation workflows. Whether through automated trend-matching software or tracking real-time neural mapping to measure human pleasure, computational technology is providing flavorists with unprecedented capabilities.

Paired with scalable, biotechnology-driven sourcing alternatives—such as precision-fermented pigments and sensory-matched botanical alternatives—the successful flavor house of 2026 stands as an innovative partner ready to lead brands into the future of taste.



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Natural Dimethyl Sulfide FEMA 2746
~ vegetable, corn, tomato, sulfurous

Natural 2,5-Dimethyl Furan-3-Thiol FEMA 3451
~ cooked beef, broth, roasted chicken, meaty

Natural 3-Mercapto-2-Methyl-1-Butanol FEMA 3993
~ cooked beef, broth, roasted chicken, meaty

Natural Diallyl Disulfide FEMA 2028
~ alliaceous, green onion, meaty

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Antillone: A Biotech-Driven Leap Toward Juicy, True-to-Fruit Flavor & Fragrance Performance

Mane

https://www.mane.com/media/antillone-by-mane

Antillone (FEMA# 4706, CAS# 35194-30-0, artificial) by Mane is a 100% natural and biodegradable, EU-compliant molecule, produced sustainably via patented fermentation. Its crisp fruity green pineapple and pear note boosts juiciness and true-to-fruit realism, enhancing fragrances and flavors across a broad range of applications with vibrant authenticity.



Geosmin Unleashed: Trace-Level Power, Deep Earth Impact

Penta Fine Ingredients

https://www.pentafineingredients.com/

Natural geosmin (FEMA 4682; CAS 23333-91-7) from Penta Fine Ingredients delivers an unmistakable petrichor profile, evoking wet earth, freshly turned soil and humus. Detectable at parts-per-trillion, it offers exceptional impact even at trace levels. In flavor applications, it brings authentic earthy-terroir character to root-vegetable and mushroom flavors and acts as an umami modifier in savory systems. In perfumery, it is essential for rain accords and enhances chypre, fougère, and vetiver compositions, adding depth, realism, and a naturalistic forest-floor and living-earth effect.

Images courtesy of the manufacturers; image by amosa at Pexels



Peach, Pure and Elevated

Agrumaria Reggina

https://www.linkedin.com/company/agrumaria/

Peach Essenza evokes the velvety texture of a freshly picked peach skin. The soft, slightly lactonic fruity note of the juicy, sweet flesh emerges immediately, making this ingredient a true reflection of the delicate naturalness of white peach. Powerful and uplifting at the top, this ingredient can singularly illustrate the peach note in a citrus or aromatic tea composition, evoking peach iced tea by itself. It can also be used in a modern chypre for a floral-peach skin accord.



The Tropical Flavor Booster Bringing Bite, Ripeness and Juicy Complexity

Avant Organics

www.avantorganics.com

3-Methylthio hexyl acetate (FEMA# 3789) offers a distinctive sulfurous tropical profile with fruity, vegetative, and biting nuances. Its taste is sulfurous, tropical, sharp, green-vegetative, and fruity, making it a valuable ingredient for building authentic exotic fruit character. This material is especially effective in tropical fruit flavors, where it enhances the natural ripeness and complexity of passionfruit, mango, guava, and durian profiles. In beverages, it contributes bright, realistic tropical depth to fruit juices, sodas, flavored waters, and other refreshing applications. In confectionery, 3-methylthio hexyl acetate delivers a juicy, ripe fruit burst that works well in hard candies, gummies, fruit chews, and similar sweet formats. Avant Organics offers this material as EU Natural, Kosher, and non-GMO. For a free sample please email info@avantorganics.com



Symrise's Himalide Brings Velvety Musk and Upcycled Sophistication to Modern Fragrance

Symrise

https://www.symrise.com/scent-and-care/aroma-molecules/perfumery-ingredients/#Himalide

Discover Himalide (CAS# 141773-731), one of Symrise' renewable and upcycled perfumery ingredients. Its olfactory characteristics range from musky, cedar wood, to dry powdery, slightly aromatic, and fruity. It imparts a very smooth and elegant character. Himalide works as an excellent material for rounding off amber notes and adding velvety to floral accords.

Images courtesy of the manufacturers

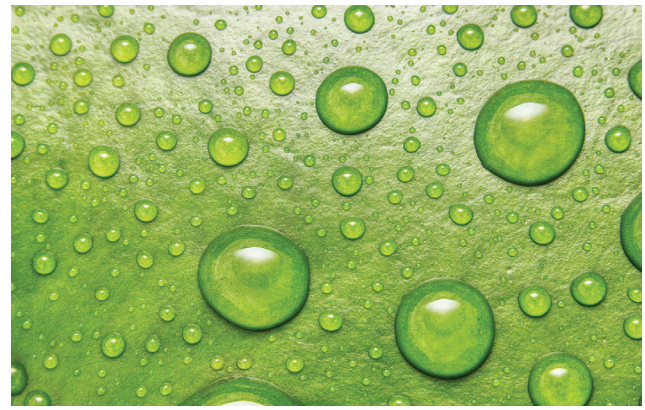


Natural Methionol: Trace Savory Power with Brothy, Meaty Depth

Axxence Corporation

www.axxence.com

Natural methionol (FEMA# 3415, CAS# 505-10-2) delivers authentic warm savory depth. Naturally occurring in potatoes, soy sauce, tomatoes, asparagus and cooked meats, methionol provides rich brothy nuances with characteristic potato, onion, vegetable and meaty notes even at trace amounts. EU and US natural, kosher, vegetarian and non-GMO.



trans-4-Tetradecanal Delivers Fresh Lift and Waxy Depth

Penta Fine Ingredients

https://www.pentafineingredients.com/

Natural trans-4-tetradecanal (FEMA# 4904; CAS# 115018-39-8) from Penta Fine Ingredients delivers a green, fatty profile with fresh fruity nuances reminiscent of green melon rind and cucumber skin. Its structure provides good diffusivity and moderate volatility, adding lift. At low levels, the profile is bright, while developing a waxy depth at higher concentrations. In flavor applications, it enhances dairy, fresh fruit and green vegetables and adds natural authenticity in clean and plant-based formulas. In perfumery, it supports green, aquatic, dewy and floral accords, adding realism and naturalness at low levels.



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Natural Flavor Ingredients

FEMA 3136
2,3-Diethyl Pyrazine Natural

FEMA 3154
2-Ethyl-5-Methyl Pyrazine Natural

FEMA 3155
2-Ethyl-3-Methyl Pyrazine Natural

FEMA 3208
2-Methylthio-(3or5or6)-Methyl Pyrazine Natural

FEMA 3271
2,3-Dimethyl Pyrazine Natural

FEMA 3306
6,7-Dihydro-5-Methyl-5H -Cyclopentapyrazine Natural

FEMA 3327
2-Acetyl-3,5-Dimethyl Pyrazine Natural

FEMA 3919
2-Ethyl-6-Methyl Pyrazine Natural

FEMA 3964
2-Acetyl-3-Methyl Pyrazine Natural

FEMA 4434
5-Ethyl-2,3-Dimethyl Pyrazine Natural

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FLAVOR LEADERS & NEWSMAKERS 2026:

THE ARCHITECTURE OF TASTE 2026: CONVERGENCE, INTELLIGENCE AND RESILIENCE IN GLOBAL FLAVOR DESIGN

Emerging forces are fundamentally redefining the corporate agendas, research and development brief structures, and capital expenditure priorities of global taste leaders.



This year's "Flavor Leaders & Newsmakers" special issue reveals an industry moving decisively away from simple sensory replication toward the intentional orchestration of complex, multi-dimensional consumption experiences.

Image by Maria Vitkovska at Adobe Stock

The global flavor and extract industry is currently navigating a profound structural realignment. In 2026, the traditional boundaries that once separated pure culinary execution, biochemical health infrastructure and computational intelligence have dissolved. In fact, this year's "Flavor Leaders & Newsmakers" special issue, a compendium of corporate strategies from the world's leading houses—Robertet, Symrise, Scentium, Sensient, McCormick, Givaudan and dsm-firmenich—reveals an industry moving decisively away from simple sensory replication toward

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the intentional orchestration of complex, multi-dimensional consumption experiences.

Across this year's profiles, clear, unifying paradigms emerge. These forces are fundamentally redefining the corporate agendas, research and development brief structures, and capital expenditure priorities of global taste leaders.

Here's some of what we found.



The industry's multi-sensory convergence is directly linked to the widespread adoption of clean labels and the industry-wide reformulation push to eliminate or reduce fat, sugar and sodium.

The Multi-Sensory Baseline and the Dissolution of Category Boundaries

The most prominent operational shift across the flavor landscape is the recognition that flavor cannot be engineered in isolation from texture, mouthfeel, color and visual storytelling. The modern consumer views food, beverage and nutritional supplementation through a unified lens of holistic well-being and sensory engagement. This change has transformed simple nourishment from a baseline requirement into a complex engineering task.

Sensient explicitly defines this trend, noting that as digital screens dominate human interactions, consumers actively crave highly engaging, elevated physical sensory experiences. Consequently, R&D laboratories must look beyond basic taste to optimize the full matrix of mouthfeel, visual clarity, aroma release and texture.

This multi-sensory convergence is directly linked to the widespread adoption of clean labels and the industry-wide reformulation push to eliminate or reduce fat, sugar and sodium. The reduction of these core, preference-driving structural ingredients invariably unmasks unpleasant bitter, metallic, sour or astringent off-notes, while destabilizing the expected physical texture of the final product.

To navigate these challenges, flavor houses are deploying sophisticated, receptor-based modulation platforms.

McCormick's Optify platform and dsm-firmenich's NovaSense and TasteGem technologies illustrate this shift. These platforms utilize advanced scientific techniques to enhance creaminess, juiciness, saltiness and alcohol perception in calorie-reduced systems, ensuring that healthy formulations never require a compromise on pleasure.

Satiety, Space, and the GLP-1 Formulation Revolution

The rapid rise of GLP-1 weight-management medications represents a historic disruption in global eating behaviors, introducing unique challenges and opportunities for product design. As consumers on these treatments experience decreased portion sizes and altered patterns of appetite and satiety, the sensory value of individual food experiences escalates dramatically.

When less volume is consumed, every bite and sip must deliver heightened pleasure, precise nutrition, and absolute authenticity. Industry frontrunners have quickly integrated GLP-1 user insights into their upstream product validation frameworks.

IFF, for example, has published foundational research on how these medications alter taste perception, shifting their development priorities toward nutrient-dense, fiber-forward, and protein-packed product categories. Concurrently, Givaudan has launched its GLP-1 Wellbeing Collection, an advanced toolkit optimized for the co-creation of high-protein

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As consumers on GLP-1 treatments experience decreased portion sizes and altered patterns of appetite and satiety, the sensory value of individual food experiences escalates dramatically.

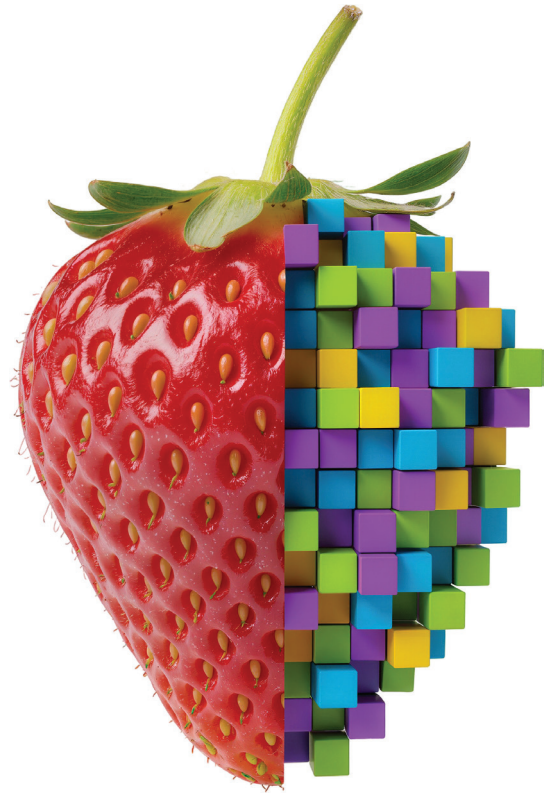
mini-meals, nutrient-dense snacks, and functional hydration concepts.

This specialized formulation landscape requires exceptional performance across multiple core competencies. R&D teams must master advanced masking technologies to neutralize the harsh bitterness of concentrated plant proteins and active botanicals, deploy precise mouthfeel tools to replicate indulgent roundness, and engineer slow-release flavor profiles that maintain sensory satisfaction across downsized portion weights.

Artificial Intelligence and Cognitive Neuroscience as R&D Accelerators

The intersection of human craftsmanship and computational science has moved past speculative exploration into a core operational reality across major flavor houses. Artificial intelligence (AI), machine learning and neurophysiological tracking are being embedded end-to-end across the value chain to shorten development timelines, improve concept accuracy and mitigate initial laboratory risk.

The deployment of AI follows two clear tracks: trend prediction and predictive chemical formulation.



Artificial intelligence (AI), machine learning and neurophysiological tracking are being embedded end-to-end across the value chain to shorten development timelines, improve concept accuracy and mitigate initial laboratory risk.

From top: Images by Nati, Lukas at Adobe Stock

Symrise leverages its SymVision AI platform alongside its trendscope ecosystem to instantly connect consumer market signals with automated concept creation and precise molecular flavor targets. McCormick utilizes its data-driven First in Flavor predictive tool alongside SAGE, an AI-powered design system built on decades of proprietary sensory science and consumer preference records. SAGE acts as a direct multiplier for product developers, reducing iterative trial-and-error in flavor design while optimizing for target costs, stability and regional regulatory compliance.

Furthermore, leading houses are moving beyond basic consumer surveys by using advanced neurophysiological metrics to actively quantify emotional responses. Robertet incorporates proprietary, patented AI and neuroscience tools directly into the creation loop to decode exactly how consumers feel when tasting an ingredient. This capability allows flavorists to intentionally design complex profiles that trigger specific, scientifically validated emotional states, such as comfort, energy, nostalgia or indulgence.

Similarly, Givaudan's partnership with the neurophysiological research firm Thimus tracks real-time brain responses to flavor and texture, transforming human pleasure into a measurable metric in formulation design. However, as Scentium emphasizes, because the structural language of flavor is highly specialized, the definitive competitive advantage in the market will belong to companies with the highest quality internal datasets and the most systematic evaluation methods.



To safeguard supply and insulate clients from pricing volatility, flavor houses are designing drop-in replacements for vulnerable primary crops.

Precision Sourcing, Sourcing Diversity and Biotech Alternative Streams

The modern global raw material market requires deep structural resilience. Climate disruption, geopolitical friction, crop disease and anti-dumping regulatory changes mean that flavor houses can no longer rely on single-origin supply models for critical botanical feedstocks. Innovation is now heavily focused on side-stream valorization, biotransformation and advanced precision fermentation.

To safeguard supply and insulate clients from pricing volatility, flavor houses are designing drop-in replacements for vulnerable primary crops. Givaudan's strategic development of high-performance vanillin replacers provides a clear example: these systems deliver full sensory parity to 100% vanillin at equivalent dosages, protecting margins while lowering product carbon footprints.

Additionally, the circular validation of side-streams has become a major sourcing asset. Symrise's Bridging the Gap program relies on upcycling industrial side-streams to deliver high-resource efficiency, while houses like Sensient use specialized biotransformation technologies to create robust natural flavor libraries that reduce dependence on raw agricultural volume.

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While scientific discovery and computational hubs are consolidating globally, the implementation of taste remains intensely local.

"Glocal" Footprints: Deep Proximity and Cultural Precision

While scientific discovery and computational hubs are consolidating globally—such as Symrise's Data & AI Hub in Barcelona or IFF's specialized Citrus Innovation Center in Florida—the implementation of taste remains intensely local. This dual requirement has driven the widespread adoption of a "glocal" operational architecture: matching global technology networks with heavily decentralized regional application centers.

R&D investment patterns highlight this clear focus on deep physical proximity to the customer. ADM's recent capital expansions across North America, Europe and its satellite labs in key APAC locations demonstrate this commitment to meeting clients exactly where they operate. Regional centers are vital because flavor expectations are migrating at a rapid pace. Consumers no longer accept generic regional labels; they demand highly authentic, exotic and ethnically precise influences.

Current growth categories reflect this demand for bold sensory experiences: natural citrus and alternative twists in China, globally inspired culinary profiles, and sweet-and-spicy "swicy" snack profile combinations. Givaudan's newly unveiled House of Lime co-creation hub in Mexico City brings this local immersion to life, celebrating regional lime cultivation heritage while directly feeding real-time gastronomic data back into its global scientific infrastructure.

Flavor's New Blueprint

The corporate profiles contained in this year's edition reveal an industry that has moved past purely reactive flavor blending to secure its place as an essential architecture of the global food system. By utilizing artificial intelligence to capture human emotion, adapting molecular science to fulfill the stringent requirements of the GLP-1 generation, and engineering flexible, circular sourcing networks, these flavor houses are successfully future-proofing the market. For flavor industry stakeholders, these unified trends write a clear blueprint for sustained relevance: taste must be handled as an integrated biological, sensory, and technological system.

Image by EdNurg at Adobe Stock

ADM

2025 net income: $1.1 billion (inclusive of all categories)

Global headquarters: Chicago

**Commentary courtesy of ADM*

ADM Doubles Down on Natural Flavors Growth With Billion-Dollar Momentum and Global Expansion

Scaling Growth Through Investment and Integration

Commentary by Calvin McEvoy, President, Global Flavors, ADM, and member of the board of governors at Flavor Extract Manufacturers Association (FEMA)

In a marketplace defined by rapid reformulation, evolving consumer expectations and more demand for natural ingredients, ADM's flavors business continues to reinforce its position as a global leader. In 2025, we delivered record performance across multiple regions and business segments, converging vertical integration, technological excellence and customer-centric innovation. Through strategic investments, portfolio expansion and deep sensory expertise, we are translating nature into reliable products, providing precise, technology driven solutions that address our customers' challenges for today and tomorrow.

ADM's flavors business experienced strong sales in North America in 2025, supported by steady growth across Europe and Asia Pacific. The year marked record performance across many parts of the global flavors portfolio, fueled by operational investments, expanded innovation capabilities and the successful integration of key acquisitions—Revela Foods, FDL and Totally Natural Solutions (TNS)—which strengthened ADM's core flavors business by incorporating complementary capabilities and portfolios across dairy, savory, hops and other natural flavor systems.

Notably, we invested heavily across our global network. This included significant improvements in our Erlanger, Kentucky and Berlin and Eppelheim, Germany flavor production sites, along with innovation center expansions in Budapest, Hungary and Nairobi, Kenya.



"In an era where both breakthrough innovation and thoughtful reformulation are critical, we are positioning ADM's flavors business as a partner of choice for regional and global brands alike," says Calvin McEvoy, president, global flavors, ADM.

Courtesy of ADM

Erlanger, our flagship U.S. flavors facility, became a focal point of investment in 2025, which is continuing throughout 2026. A recently announced $26 million investment will increase capacity, delivery reliability and supply consistency for colors and flavors derived from

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natural sources. The upgrade includes a 3,600-square-foot expansion—representing a 40% increase in raw material handling capabilities—and multiple digitalization, automation and integrated process upgrades.

In addition, a $15 million investment resulted in a 7,200-square-foot expansion of the Erlanger site's world-class Customer Creation and Innovation Center (CCIC). This supported fully bringing online our new culinary and dairy innovation center, bolstering our collaboration capabilities with customers across food and beverage categories. The enhanced space enables ADM to tackle some of the industry's most pressing challenges, including sodium and sugar reduction, improved nutrient density like added protein content, and clean-label and regulatory demands, all without compromising taste.

These capital campaigns underscore ADM's long-term commitment to innovation, service, customer centricity and operational excellence. By decentralizing elements of our CCIC model and augmenting our regional capabilities, we are increasing flexibility and meeting customers where they are.

Moreover, with one of the broadest and deepest ingredient portfolios in the industry —encompassing citrus, vanilla, mint, hops, botanical extracts, aroma ingredients, colors derived from natural sources and more—we combine vertical integration with expert creation and development teams to help build novel and enduring products. In an era where both breakthrough innovation and thoughtful reformulation are critical, we are positioning ADM's flavors business as a partner of choice for regional and global brands alike.



"By combining natural origin, technological excellence and regional presence, ADM delivers full-spectrum solutions precisely aligned to customer needs, from ideation and development through scale-up," says Nicole Yo.

Precision Innovation Rooted in Nature

Commentary by Nicole Yo, Global Chief Flavorist, ADM

As a global leader in innovative solutions from nature, ADM supports our customers in remaining nimble through shifting consumer dietary habits, flavor expectations and demand for natural ingredients. Our vertical integration across all platforms of our flavor business, combined with precision expertise and a vast natural flavors portfolio, fortifies our ability to address reformulation needs from concept to commercialization while ensuring consistent, high-quality supply. Our exceptional access to raw materials—from citrus to mint, dairy and cheese, food bases, tea distillates and hops—provides a reliable foundation for innovation.

ADM's research and development process begins with a comprehensive understanding of current and emerging market dynamics. By closely analyzing consumer preferences, we anticipate trends and translate these insights into actionable solutions in the lab. Within our flavors toolbox, we create proprietary captives that support sensorial shifts while authentically emulating tastes found in nature. This enables brands to deliver cleaner-label experiences without sacrificing complexity or authenticity. Innovation also extends into advanced flavor modulation, biotechnology and fermentation to help optimize performance.

Our expert flavorists and food scientists leverage a broad array of patented and sophisticated technologies, such as separation, concentration, blending and emulsification, along with proprietary processes, designed to solve our customers' challenges efficiently and reliably. Automation and digitalization across manufacturing sites paired with our supply reliability further supports scalability.

Our global labs and innovation centers operate as an integrated network, allowing solutions

developed in one market to be adapted, scaled and deployed across others with speed and precision. Recent expansions at the Heidelberg, Germany lab, the opening of a new flavor creation facility in Johannesburg, South Africa, and ongoing investments across the Asia Pacific region exemplify this approach. In 2025, ADM established satellite labs in key APAC locations, strengthening proximity to customers in one of the fastest-growing markets worldwide. Continued expansion of our lab footprint will accelerate speed-to-market, deepen collaboration and ensure solutions are tailored to regional tastes and regulatory requirements.

By combining natural origin, technological excellence and regional presence, ADM delivers full-spectrum solutions precisely aligned to customer needs, from ideation and development through scale-up.

From Cultural Signals to Sensational Flavors

Commentary by Hélène Moeller, Vice President, Global Product Marketing, Flavors & Colors, ADM

Our flavor innovations and trend predictions are informed not only by the food industry, but also by global culinary shifts, fashion, art and design. Each year, ADM evaluates cultural movements and consumer mindsets to anticipate what will drive sensory expression.

For 2026, we predicted that consumers will focus on cultivating personal resilience and making more meaningful choices at the store. This mindset may manifest in foods and beverages that support holistic well-being, immersive experiences that deliver a "sensory theater" of tastes, textures and colors, or escapism through comforting yet contemporary "newstalgic" flavors.

Our global lens, combined with local immersion, allows us to track culinary and cultural moments as they evolve, monitoring how these ideas shape the future of flavor. For example, we also see the rise of "third culture cuisine," which celebrates blended food identities, alongside conscientious eating, intentionality and personalized experiences with an emphasis on wellness—physical, emotional and social—playing an even larger role in guiding innovation. Flavor becomes not just an attribute, but a vehicle for storytelling, identity and connection.

To enhance our foresight, we are piloting an AI platform in 2026 designed to analyze extensive data sets and accelerate consumer insight evaluation. Integrating AI-driven analytics into our trendspotting and R&D processes further fuels our agility and responsiveness while maintaining our human creativity and craftsmanship at the heart of flavor design.



"As consumer expectations and taste preferences change, ADM's flavor business stands at the intersection of authenticity and innovation—where nature meets precision and where global expertise transforms raw ingredients into differentiated food and beverage experiences that resonate meaningfully with consumers everywhere," says Hélène Moeller.

As we look to what's next, we remain rooted in three interconnected strengths. First, we believe in leveraging quality natural sources and raw materials. In fact, more than 80% of our portfolio depends on or is derived from natural components. We bring this together with advanced technology and solutions, all led by our expert development and technical teams. As consumer expectations and taste preferences change, ADM's flavor business stands at the intersection of authenticity and innovation—where nature meets precision and where global expertise transforms raw ingredients into differentiated food and beverage experiences that resonate meaningfully with consumers everywhere.

dsm-firmenich

dsm-firmenich

2025 Taste, Texture & Health sales: 3,146 million euros

Dual headquarters: Maastricht, the Netherlands/Kaiseraugst, Switzerland

**Commentary courtesy of dsm-firmenich*

dsm-firmenich Taps Science, AI and Biotech to Redefine the Future of Flavor

"Our ambition is to help bring progress to life by addressing some of the food system's most pressing challenges."



As consumer expectations continue to evolve and markets become more complex, the future of flavor innovation at dsm firmenich will be shaped by the ability to leverage deep consumer understanding to guide advanced science, digitalization, and biotechnology to deliver no compromise solutions in collaboration with our customers and their brands.

Courtesy of dsm-firmenich

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dsm-firmenich's Taste, Texture & Health (TTH) business is dedicated to shaping the future of flavor by working closely with our customers to create food and beverages that are not only healthier and more sustainable, but also irresistibly delicious.

Taste is the primary driver of consumer choice—a fact consistently confirmed by decades of consumer research. Real impact happens where health, sustainability, and great flavor come together. Rather than seeing health and taste as trade-offs, we know consumers are far more likely to embrace healthier choices when they also deliver on enjoyment, familiarity and emotional connection, and we are constantly working to ensure the products we co-create with our customers do just that. This principal guides everything we do across our categories including beverages, dairy, baking, savory, and pet nutrition.

Overall, our ambition is to help bring progress to life by addressing some of the food system's most pressing challenges: enabling nutritious and sustainable food and beverages; accelerating diet transformation through products that deliver appealing taste and texture; and helping nourish a growing global population while minimizing food loss and waste.

Now led by Maurizio Clementi, who became President of Taste, Texture & Health this year, the business is focused on accelerating growth by bringing together deep consumer insight, advanced receptor-based discovery and bioscience capabilities, and a truly global innovation ecosystem to help customers stay ahead of rapidly changing expectations.

- **Maurizio Clementi:** "At Taste, Texture & Health, we are redefining flavor leadership and shaping the future of food by combining world class science, global collaboration, and a deep understanding of how food connects to everyday life—helping our customers create solutions that deliver great taste while supporting consumers making healthier and more sustainable choices."

Recent innovations and key milestones

Over recent years, TTH has delivered a series of milestones that reinforce its role as a science-led partner shaping the future of food. Product innovation remains a key driver, with innovations such as NovaSense for enhanced mouthfeel and alcohol sensation in no- and low-alcohol beers, while TasteGEM and Fibradan help reduce sugar, preserve structure, and sustain nutrition in biscuits—delivering healthier biscuits with the same great taste. And with Delvo One, our tailored dairy culture solutions powered by AI, we ensure stability and consistently perfect taste and texture in dairy products.



Now led by Maurizio Clementi, who became President of Taste, Texture & Health this year, the business is focused on accelerating growth by bringing together deep consumer insight, advanced receptor-based discovery and bioscience capabilities, and a truly global innovation ecosystem to help customers stay ahead of rapidly changing expectations.

In parallel, TTH has strengthened its global innovation footprint through the opening of new customer-centric hubs, including the Savory Taste Hub in Wageningen and the Van Marken Food Innovation Center in Delft, both in the Netherlands, as well as a bakery innovation hub in Princeton, North America. These developments were complemented by strategic investments to expand flavor capabilities in India, and investments in North Americas to accelerate growth in pet nutrition.

To be closer to customers and key talents in fast growing regions such as East Africa and China, we've also celebrated the opening of our new office and food and beverage center in Nairobi, Kenya and a new cultures proportioning & mixing and warehouse facility in Hohhot, Inner Mongolia. Together, these milestones highlight TTH's continued focus on combining science, scale and collaboration to lead meaningful transformation across global food systems.

Leading the evolution of taste and dietary expectations

Global dietary habits and flavor expectations are evolving faster than ever, driven by health priorities,

sustainability concerns, convenience, and cultural diversity. Consumers increasingly expect cleaner labels and added functionality, alongside reduced sugar, salt and fat—without compromising on pleasure, familiarity, or emotional connection. At the same time, flavor preferences are shifting towards having greater recognition of regional cuisines and cultural identity.

We see this shift as an opportunity to redefine how great taste enables healthier and more sustainable food choices. By understanding how aroma and taste is perceived at a molecular level through our receptor-based discovery capabilities, we help customers reformulate existing products and develop new offerings that appeal to what consumers value most.

Looking ahead, the future of flavor will be defined by a balance between reassurance and exploration. Consumers continue to gravitate toward authentic, familiar profiles that deliver comfort, while also expecting transparency, functionality and improved nutritional credentials. Clean-label solutions and effective sugar and salt reduction are accelerating across markets. These are not short-term trends, but structural shifts in how consumers define value, quality, and enjoyment in food.

Adapting at speed across markets

Across key regions, demand is growing for authentic savory profiles, better-tasting high-protein solutions, and locally relevant flavor expression. The ability to respond quickly and precisely to these shifts is becoming a key competitive advantage.

TTH's global network of 55 co-creation and application labs, 9 research & development centers, and customer-facing teams enables rapid collaboration and the delivery of market-ready solutions. By combining global scale with strong local insight and science-based taste capabilities, we are well positioned to adapt at speed, helping customers stay ahead of evolving preferences while consistently delivering on taste, quality, and relevance.

Innovation powered by science, sustainability, digitalization, and biotechnology

At the core of TTH's approach is a powerful innovation engine that brings together ingredient science,



Over recent years, TTH has delivered a series of milestones that reinforce its role as a science-led partner shaping the future of food.



At the core of TTH's approach is a powerful innovation engine that brings together ingredient science, biotechnology, and digital tools.

biotechnology, and digital tools. Advanced fermentation and biotechnology open new ways to improve taste, stability and sustainability, while AI-enabled digital tools accelerate formulation, testing, and optimization.

Sustainability is embedded throughout our innovation pipeline. As climate impacts and supply volatility increase, the ability to reduce environmental footprint while maintaining taste and performance has been central to long-term success and reliable supply. Our integrated approach—combining sourcing expertise, formulation science and environmental insight—helps our customers build more resilient, responsible and future-proof products.

How we're bringing progress to life

As consumer expectations continue to evolve and markets become more complex, the future of flavor innovation at dsm-firmenich will be shaped by the ability to leverage deep consumer understanding to guide advanced science, digitalization, and biotechnology to deliver no compromise solutions in collaboration with our customers and their brands.

By continuing to invest in science based flavor leadership, Taste, Texture & Health is well positioned to help our customers shape the future of food: accelerating time to market, while delivering enjoyment, nutrition, and sustainability.



Givaudan

2025 sales: 7,472 million euros (group sales); 3,642 million euros (Taste & Wellbeing division sales)

Headquarters: Geneva, Switzerland

**Commentary courtesy of Givaudan*

Givaudan Pursues Innovation as GLP-1 Nutrition, Biotech and AI Reshape the Flavor Business



Sales in Taste & Wellbeing amounted to CHF 3,642 million, an increase of 2.4% and a decrease of 2.9% in Swiss francs. From a product segment perspective, growth was broad-based across snacks, dairy, and sweet.

In 2025, Givaudan delivered strong, industry-leading financial performance, with sales reaching CHF 7.5 billion, an increase of 5.1% on an LFL basis and successfully concluded its 2021–2025 strategy, "Committed to Growth, with Purpose." Givaudan set ambitious goals with its 2025 strategy, aiming to achieve organic sales growth of 4% to 5% like-for-like (LFL) and a free cash flow of at least 12%, both measured as an average over the five-year period. Givaudan exceeded these financial targets, with an average LFL sales growth of 6.8% and an average free cash flow of 12.5%. The company also made significant progress beyond financial results across its nature, people, and communities purpose pillars.

Sales Performance

Sales in Taste & Wellbeing amounted to CHF 3,642 million, an increase of 2.4% and a decrease of 2.9% in Swiss francs. From a product segment perspective, growth was broad-based across snacks, dairy, and sweet.

"Overall, Taste & Wellbeing delivered a solid performance on top of very strong comparables from 2024 and under challenging conditions, further proving the

Courtesy of Givaudan

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At the end of 2025, Givaudan had:

- More than 17,500 employees
- 167 sites worldwide
- 65 creation and research centers

resilience of our business model and positioning us well for future growth," says Chief Executive Officer Christian Stammkoetter. "We see great potential as we help customers address key consumer demands for foods and beverages that fit the latest trends - from affordability to serving the need for clean label and more natural ingredients, to healthier, functional nutrition or the reduction of sugar, salt and fats without compromising on taste. And of course, to create products that fit the requirements of GLP-1 diets."

Reimagining the Future of Taste: GLP-1 Wellness, AI and Biotech

Commentary by Antoine Khalil, President Taste & Wellbeing

Consumer expectations are evolving at remarkable speed, driven by tighter household budgets, heightened health awareness and a growing desire for products that feel good, do good and fit seamlessly into balanced lifestyles. Over the past twelve months, Givaudan has translated those shifting needs into a dynamic portfolio of innovations, partnerships and technology breakthroughs that reaffirm its purpose: creating for happier, healthier lives with love for nature.

New health journeys through nutrition and taste

GLP-1 treatments are reshaping eating behaviors worldwide, redefining how consumers approach food, flavor and nutrition. As portion sizes decrease, the role of food experience becomes even more important. GLP-1 consumers look for foods and drinks that remain satisfying while supporting their nutritional goals. Givaudan has been collaborating with customers to make healthier eating enjoyable for decades, well before GLP-1 medications entered the spotlight. Our deep understanding of taste, nutrition, and well-being gives us a unique vantage point as consumers experiment with new approaches to managing weight and energy. We recently introduced the GLP-1 Wellbeing Collection, designed to help customers co-create convenient, protein-rich mini-meals, balanced snacks and gentle



"Overall, Taste & Wellbeing delivered a solid performance on top of very strong comparables from 2024 and under challenging conditions, further proving the resilience of our business model and positioning us well for future growth," says Chief Executive Officer Christian Stammkoetter.

hydration concepts that sustain energy, satiety and pleasure in eating, all guided by taste science. The collection features functional hydration solutions with advanced flavor tools, natural energy solutions for fatigue, and botanical ingredients supporting muscle recovery and healthy blood flow. For protein-fortified applications, Givaudan provides taste-masking technologies to reduce bitterness and astringency, mouthfeel enhancement tools that deliver indulgent roundness, and sugar and sodium reduction solutions for balanced flavor. In later stages of the GLP-1 journey, Givaudan's portfolio supports healthy weight maintenance through natural ingredients and flavor systems that maintain enjoyment in smaller portions.

Balancing affordability with rising costs and evolving regulations

As consumers worldwide weigh wellness priorities against tightening household budgets, affordability has become a central expectation. Givaudan offers stability during these times with a diversified portfolio, presence

across major markets, robust sourcing capabilities and regulatory expertise that reduce risks to our customers.

Affordability must not come at a cost to taste. As climate risks and supply disruptions reshape the economics of key ingredients, such as vanillin and citrus, Givaudan helps customers adapt through smart substitutions and sensory-matched alternatives that protect margins and ensure consistency.

The vanillin market is a clear illustration. Shifting regulations and anti-dumping duties in Europe have redefined sourcing strategies, driving reformulation and price pressure. Givaudan's vanillin replacers safeguard affordability by delivering full sensory parity with 100% vanillin at equivalent dosage, improving cost efficiency and lowering carbon footprint.

Regulatory transformation is also shaping ingredient innovation. The shift away from synthetic colors, particularly in the United States, illustrates this momentum. In 2025 the U.S. FDA approved Everzure Galdieria, a naturally derived blue pigment developed with French biotech partner Fermentalg. Produced from the microalgae *Galdieria sulphuraria* by precision fermentation, this stable natural blue offers a sustainable alternative to synthetic Blue 1, opening creative possibilities in candies, soft drinks and other low-pH applications previously inaccessible to natural colors.

Such breakthroughs reflect how Givaudan transforms regulatory pressure into opportunity. Biotechnology and fermentation enable resource efficiency while enriching sensory experiences. For Givaudan and its partners, regulation has become a catalyst for smarter science and stronger collaboration.



"Consumer expectations are evolving at remarkable speed, driven by tighter household budgets, heightened health awareness and a growing desire for products that feel good, do good and fit seamlessly into balanced lifestyles," says Antoine Khalil, President Taste & Wellbeing.

Imagining the future of taste: technology and co-creation

Continuous innovation at Givaudan merges human creativity with data-driven insight. Through our Customer Foresight futurescaping platform, we partnered with the Basque Culinary Center to co-create a vision of future snacking, developing four distinct scenarios that student chefs brought to life with imaginative concepts ranging from savory to sweet, liquid to glowing bites. This foresight work reveals how social, technological, and emotional shifts will redefine snacking as a multidimensional experience of nourishment, connection, and expression.

While technological progress is speeding up innovation, inspiration still begins in the kitchen. Collaboration with global chefs continues to inspire new textures, seasonings and techniques that inform our work with customers. Our 2026 Chef's Council, which took place in March in Mexico City, fed this feedback loop between gastronomy and formulation. There, top chefs from around the world experimented with the multidimensional world of "hotness," helping us to capture the layers and sensations that make hot and spicy experiences satisfying beyond pure heat. Such culinary collaborations translate directly into consumer-ready solutions across snacks, sauces, beverages and plant-based foods.

At the end of 2025, Givaudan had:

- A procurement spend more than CHF 4 billion
- More than 2,800 raw material suppliers in more than 100 countries
- More than 15,600 global partners supplying indirect materials and services

Mexico City is also serving as a broader focal point for Givaudan's engagement with customers and partners. A newly unveiled co-creation hub known as the House of Lime invites visitors into a sensorial exploration of citrus: its diversity, its link to place and its creative potential. Combining workshops, digital tools and sourcing exhibits, the space celebrates Mexico's heritage as a center of lime cultivation while connecting guests with the company's global citrus expertise.

Givaudan is also using technology to deepen our understanding of emotion. A collaboration with Thimus, a neurophysiological research firm, explores real-time brain responses to flavor and texture, quantifying pleasure as part of formulation design. These technologies and collaborations have been helping customers to understand consumer preferences and develop successful product formulations.

Extending reach, expanding impact

Taste & Wellbeing is advancing in line with Givaudan's 2030 strategy. Guided by our commitment to "go beyond great taste to create food experiences that do good and feel good, for body, mind and planet," we are leveraging innovation, well-being and sustainability to deliver growth that benefits all. Our three growth drivers: extending customer reach, deepening geographical presence and strengthening our portfolio, enable us to serve partners faster and more creatively.

Extending customer reach will remain central as we deepen collaborations in fast-growing regional and local markets while nurturing long-standing multinational partnerships. Initiatives such as Mexico City's House of Lime bring global expertise to life through local co-creation, inspiring new food and beverage experiences.

As we broaden our portfolio, we are selectively exploring adjacent spaces that complement our core business, such as specialty pet-food ingredients, and expanding well-being offerings in weight management, energy and cognitive well-being for purpose-led growth.

With dedicated teams, trusted partners and engaged customers, we are shaping the future of Taste & Wellbeing, creating distinctive, memorable experiences that improve lives and make a positive difference for people, nature and communities around the world.



IFF

2025 sales: $10.9 billion (cross-category); $2.48 billion (Taste)

Headquarters: New York

**Commentary courtesy of IFF*

IFF Taste Accelerates Innovation Engine as GLP-1, AI & Wellness Redefine Global Flavor Demand

IFF is helping customers create products that deliver more joy in every sip and bite.

As a global leader in taste, scent, food ingredients and biosciences, IFF creates sustainable, high-performance solutions that make a real impact for customers, consumers and the planet—from flavors and enzymes to cultures to probiotics.

For IFF's Taste business, it's been a year of navigating a dynamic landscape, marked by industry-wide challenges such as price volatility and supply uncertainties, as well as opportunities like the GLP-1 revolution.

Despite these shifts, IFF's Taste organization has remained steadfast, guided by two defining pillars: innovation and digital transformation to drive thought leadership.

Leaders from IFF Taste—Yuvraj Arora, president, IFF Taste; Adam Jańczuk, senior vice president, research, creation and design, Taste, IFF; Benjamin Mattei, vice president, intelligence and digital transformation, Taste, IFF; and Mimi Sherlock, vice president, global consumer intelligence, Taste, IFF—share how IFF is helping customers create products that deliver more joy in every sip and bite.



"By pairing deep consumer insight with advanced flavor science, we're helping our customers lead in this new era of personalized, wellness-driven nutrition," says Yuvraj Arora, President, Taste, IFF.

Elevating Health & Wellness Through Flavors

Q&A with Yuvraj Arora, President, Taste, IFF

Q: Can you give a brief overview of some key highlights of milestones the company has reached over the last 12 months?

This past year, we achieved several milestones that reflect both our ambition and our commitment to shaping the future of our industry:

Officially opened the Citrus Innovation Center in Florida, establishing a first-of-its-kind holistic citrus ecosystem. This center brings together advanced technologies, deep sensory expertise, and end-to-end fragrance and flavor capabilities that strengthen our leadership in citrus and accelerate our ability to cocreate with customers.

Courtesy of IFF

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Significantly strengthened our digital and AI capabilities to drive innovation and growth across our entire value chain. AI is now being embedded end-to-end across our value chain, from identifying trends and weak signals, to generating product concepts, supporting flavor formulation and optimization, enabling innovation and manufacturing—fully leveraging IFF's proprietary data at every step. We also opened our new IFF Kaleido space in Singapore—with more to come—a 360° multisensory experience that integrates video, scent, sound, and taste to power co-creation.

Strengthened our focus on the fast-growing GLP-1 landscape by leveraging GLP-1 driven consumer insights to lead the conversation. We hosted an industry webinar and published a groundbreaking report on how these medications are reshaping taste, appetite, and satiety, while showcasing nutrient-dense, protein and fiber-forward concepts. Helping our customers to design products for this growing consumer segment has been incredibly satisfying.

Our FlavorFit taste modulation technology continued to gain momentum, supporting manufacturers in optimizing taste while reducing sodium and sugar—at a time when consumer demand for better-for-you products is at an all-time high.

Together, these achievements reflect our commitment to strategic foresight and consumer-centered innovation, all with one goal in mind: helping our customers create products that deliver more joy in every sip and bite.

Q: How is your company adapting to global changes in dietary habits and flavor expectations?

Global shifts in dietary habits—driven most notably by the rapid expansion of the GLP-1 consumer segment—are redefining people's experiences with food, and we've been adapting with intention and speed. GLP-1 users have evolving needs around portion size, sweetness, richness, and mouthfeel, which introduce new technical demands for flavor design. This requires deeper expertise in masking, texture, and taste.

Our strategy centers on empathy-led product development, grounded in an understanding of changing taste perceptions and the unique nutritional needs of GLP-1 consumers. Our goal is to help brands deliver joy, satisfaction, and better-for-you outcomes without compromise.

In parallel with the evolving weight-management landscape, we're seeing a strong resurgence of interest in solutions for mood, immunity, cognitive function, and overall health and well-being, with food and beverage increasingly viewed as part of self-care. We also see biosciences as a pathway forward, supported by our combined capabilities through the IFF Health & Biosciences division.

By pairing deep consumer insight with advanced flavor science, we're helping our customers lead in this new era of personalized, wellness-driven nutrition.

Innovating from Insight to Experience

Q&A with Adam Jańczuk, Senior Vice President, Research, Creation & Design, Taste, IFF

Q: Can you describe how your R&D process has evolved to better anticipate shifting consumer preferences?

Jańczuk: Our R&D organization has evolved from a traditionally downstream, problem-solving function into a strategic partner shaping innovation much earlier in the process. Today, we connect insights, innovation and formulation from the outset, ensuring our work anticipates, not just reacts to shifting consumer expectations.

Through our structured innovation 5D framework, our Re-Imagine and Re-Master programs, and the IFF Panoptic trends framework, we identify future-facing opportunities with clarity and discipline. But the real transformation lies in how we translate those insights. Instead of chasing individual trends, we focus on foundational pillars, such as Vanilla, Citrus, Meat, and Modulation (masking, mouthfeel, sweetness, saltiness, and umami) that cut across categories and drive scalable impact.



"Ultimately, success is defined by how effectively we connect deep consumer insights and the strong expertise of our flavorists and application designers to create meaningful, consumer-relevant innovation," says Adam Jańczuk, Senior Vice President, Research, Creation & Design, Taste, IFF.

This approach encourages cross-category thinking, enabling technologies to travel further and deliver greater value for customers.

Ultimately, success is defined by how effectively we connect deep consumer insights and the strong expertise of our flavorists and application designers to create meaningful, consumer-relevant innovation. R&D is now about orchestrating the right capabilities at the right moment to help our partners stay ahead of what's next.

Where Consumer Understanding Meets Smart Flavor Design

Q&A with Benjamin Mattei, Vice President, Intelligence and Digital Transformation, Taste, IFF

Q: How do you balance innovation with consumer familiarity when developing new flavor profiles?

Balancing innovation with consumer familiarity starts with understanding whom we're creating for and how ready they are to embrace something new. Through our proprietary segmentation model, we can clearly identify the drivers of choice across consumer groups, from those seeking bold, novel experiences to "traditionalists" who gravitate toward comforting, recognizable flavors.



"We see AI as a way to give our flavorists 'superpowers': automating routine tasks, surfacing relevant insights at the right moment, and freeing up talent to focus on higher value creative and strategic work," says Benjamin Mattei, Vice President, Intelligence and Digital Transformation, Taste, IFF.

The key is calibrating the level of novelty to each audience's appetite for change. Any innovative element must deliver a clear, meaningful benefit that outweighs potential resistance to unfamiliar tastes.

For decades, we've studied the science of familiarity and developed a proprietary "newness" model that helps us gauge how consumers perceive uniqueness and sensory complexity. One of the most effective strategies is to anchor a flavor in a well-loved profile and elevate it with a distinctive twist. This approach preserves trust while adding depth and differentiation that keeps consumers engaged over time.

By combining deep consumer understanding with disciplined flavor design, we're able to deliver innovation that feels exciting, yet still comfortably familiar.

Q: How is artificial intelligence or machine learning being integrated into your flavor development process?

AI and machine learning are becoming powerful enablers across different stages of the flavor development process, but always in a way that elevates, not replaces, human creativity.

At the earlier stages, AI helps us synthesize large volumes of internal and external insights, allowing us to explore a wider creative landscape and identify promising flavor territories with greater speed and precision.

Once a desired flavor tonality is defined, AI-based tools can support formulation work by highlighting relevant technologies, suggesting potential pathways, or optimizing- certain parameters. That said, we're very clear about the role they should play. Flavor creation remains a deeply human craft, grounded in sensory expertise, cultural understanding, and emotional intuition. Algorithms can assist, but they cannot replicate the artistry of our flavorists.

We see AI as a way to give our flavorists "superpowers": automating routine tasks, surfacing relevant insights at the right moment, and freeing up talent to focus on higher value creative and strategic work.

While we continue to experiment and learn, the judgment, experience, and creativity of our flavorists remain central to delivering superior taste experiences.

Translating Consumer Shifts into Opportunities

Q&A with Mimi Sherlock, Vice President, Global Consumer Intelligence, Taste, IFF

Q: What key consumer trends do you believe will shape the future of flavor preferences and development?

Sherlock: Several shifts are shaping the future of flavor, pointing to a marketplace that is both emotionally driven and experience-led.



"The opportunity ahead is to connect these forces to develop real, scalable flavor solutions that are both future-forward and firmly rooted in what consumers genuinely love," says Mimi Sherlock, Vice President, Global Consumer Intelligence, Taste, IFF.

First, the need for comfort and indulgence remains a powerful driver, with nostalgia evolving into "nostalgia with a twist." Second, consumers are seeking bold, multisensory experiences that deliver excitement through contrast, intensity, and texture. Third, global flavors are becoming mainstream, with cross-cultural influences shaping everyday eating and drinking occasions as consumers embrace more diverse taste profiles.

Fourth, health and well-being are expanding into mood, mental clarity and emotional balance. Finally, digital acceleration is reshaping the trend cycle, allowing flavors to spread globally in real time while making trust, transparency, and authenticity non-negotiable expectations.

The opportunity ahead is to connect these forces to develop real, scalable flavor solutions that are both future-forward and firmly rooted in what consumers genuinely love.



Mane

2025 revenue: €2.012 billion ($2.273 billion), representing 6.5% growth at constant exchange rates and scope

Headquarters: Le Bar-sur-Loup, France

**Commentary courtesy of Mane*



Flavor Innovation, AI-Driven Formulation and Global Taste Demand Power Mane's Next Phase of Growth

After delivering a strong performance in 2025, with revenues exceeding €2.012 billion ($2.273 billion) and growth of +6.5% at constant exchange rate and scope, Mane enters 2026 facing a markedly more complex global environment. Ongoing economic and geopolitical uncertainties are reshaping markets worldwide, while inflationary pressures, currency volatility, and shifting global trade dynamics impact both consumer confidence and industry value chains. In this context, agility, resilience and a clear long-term vision are essential.

For Mane, these challenges are also catalysts for strategic acceleration. The group's long-standing multi-local operating model, supported by a network of 54 R&D centers worldwide, is a key asset in navigating this volatile landscape. This global presence enables Mane rapid adaptation to local market shifts, while maintaining close relationships with customers and consumers.



Samantha Mane, CEO of Mane, notes that "agility, resilience and a clear long-term vision are essential."

Courtesy of Mane

Mane's performance is further strengthened by a targeted innovation and growth strategy. The acquisition of Chemosensoryx enhances the rapid identification and optimization of novel flavor compounds, improving product consistency and accelerating innovation.

Recently the acquisition of Fromatech brings Mane complementary expertise and expand its presence in high-potential segments, while the commercial partnership with Arzeda, a pioneer in computational biology, underscores Mane's dedication to developing innovative and next-generation ingredients.

In the Americas, Mane achieved a significant milestone by expanding operational capacity with the opening of its Woodlawn, OH liquid manufacturing facility, alongside substantial production investments in Mexico and Brazil. In 2025, the company also celebrated its 50th anniversary in Mane Mexico and its 25th in Mane Colombia.

In Asia, Mane strengthened its regional R&D footprint with the opening of a new office in Bangladesh, upgrading application capabilities to better support beverage and savory categories. Additionally, Mane

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restructured its commercial and category organization to create closer alignment between sales, marketing, sensory insight, and R&D, accelerating speed to market and reinforcing its commitment to meeting evolving consumer expectations.

Together, these initiatives demonstrate Mane's ability to combine agility, innovation and proximity to drive sustainable growth, while addressing the evolving demands of consumers and shaping the future of the flavor industry.

Adapting to Evolving Dietary Habits and Flavor Expectations

At Mane, we are embracing the global shift toward "health without compromise," where consumers demand both nutritional benefits and full taste satisfaction. To address this, we are investing heavily in taste modulation technologies, such as sweetness enhancement, salt perception, and bitterness masking, enabling our customers to reduce sugar, sodium, and fat without sacrificing sensory pleasure.

The rise of plant-based and functional products is creating new formulation challenges. We continue to expand our capabilities in taste masking and flavor optimization to address off-notes in plant proteins and to support fast-growing categories such as functional beverages, where taste is a key driver of consumer acceptance.

To tackle these evolving needs, Mane has developed a holistic approach to taste resilience, addressing three major consumer expectations: health, sustainability, and affordability. Our Sense Capture Precision Taste Modulation program enables us to decode and optimize all dimensions of taste, leveraging advanced analytical tools, sensory expertise, and a robust global database to deliver balanced and high-performing flavor solutions.

Regionally, we adapt our approach to specific trends, from supporting reduced sugar and salt formulations in Asia to addressing the rise of protein- and fiber-rich functional products in the U.S. driven by new dietary behaviors. More broadly, we are evolving toward a predictive, consumer-driven model, combining insights, sensory validation, and cross-category collaboration to anticipate expectations and deliver relevant solutions faster.

Consumer Trends Shaping Flavor Innovation

At Mane, our global consumer insights teams are deeply attuned to shifting preferences, allowing us to track and respond to emerging flavor trends with precision and speed. Across our key markets, we are observing increasingly dynamic and sometimes contradictory flavor expectations, driven by more informed, diverse, and connected consumers. International influences continue to expand rapidly, amplified by social media, and consumers are seeking health without compromise, alongside functional benefits, emotional well-being, and affordable indulgence.

Our proprietary Trend Capture platform highlights shift such as "Frugal Feast" (creative, budget-conscious



solutions), "Spice Up My Life" (bold, adventurous exploration), and "Switch On-Switch Off" (functional foods for mental well-being), reflecting how consumers redefine their relationship with food and drink.

In Asia, demand for regional culinary specialties is rising, with Thai, Korean, Japanese, and Vietnamese flavors influencing both local and global product development. Our local application teams and close market proximity enable us to quickly translate these culinary trends into commercially ready solutions.

We see strong demand for botanical, floral, and distinctive fruit-forward combinations, often driven by wellness. Balanced yet unexpected pairings, such as sweet-spicy, fruity-herbal, and sour-creamy, are increasingly resonating with consumers seeking novelty within familiar profiles. There is also a growing appreciation for natural, sustainable, and upcycled ingredients, reflecting increased expectations around transparency and responsible sourcing.

Mane's ability to adapt quickly is rooted in our multi-local model, proximity to markets, and strong integration between consumer insights, R&D, and application teams. Combined with the digitization of our flavor portfolio, this enables us to translate emerging trends into commercially viable solutions, ensuring we remain at the forefront of flavor innovation while delivering relevant and differentiated experiences to our customers.

Integrating Artificial Intelligence into Flavor Development

At Mane, AI and machine learning are integrated end-to-end across the flavor development process, from brief understanding and ideation to formulation optimization, regulatory compliance, and performance prediction, accelerating innovation while keeping creation firmly in the hands of our experts.

Generative AI acts as a creative co-pilot, helping analyze customer briefs, and supporting ideation with rapid concept exploration.

During formulation, AI optimizes experiments and predicts ingredient performance, helping flavorists prioritize promising options early. TWINS, our digital R&D assistant fueled by millions of analytical and sensory data points, enables faster formulation optimization creation and more accurate performance prediction, supporting evaluators in identifying the best solutions for customer specifications.

AI is also embedded into compliance workflows through our Regulatory Assistant, guiding teams through evolving requirements and supporting reformulation for improved safety and efficiency.

Our AI-powered Trend Capture platform continuously monitors real-time online data to identify emerging consumer preferences. By transforming global information into actionable insights, it guides our innovation priorities and inspires new flavor directions. Generative AI synthesizes these signals with Mane's internal knowledge, helping teams refine positioning and tailor sensory profiles to specific markets.

Finally, in 2026, we launched ManeGPT, an internal GenAI assistant to accelerate time-to-market and enhance efficiency across R&D, marketing, and customer engagement.

Sustainable Sourcing and Supply Chain Resilience

Sustainable sourcing is becoming increasingly vital in the flavor industry as climate change, geopolitical instability, and regulatory pressures threaten the availability of key ingredients like citrus, spices, vanilla, cocoa, and coffee. At Mane, we are proactively addressing these challenges by investing in innovative solutions and alternative ingredients, including authentic profile reconstitutions and raw material replacers, ensuring both flavor quality and supply security.

To strengthen resilience, we are diversifying sourcing regions, developing new varietals, and advancing our regenerative agriculture policy. We work closely with suppliers to promote cultivation techniques that respect soils, ecosystems, and biodiversity, and have ongoing R&D projects, such as our partnership with CIRAD to develop citrus varieties resistant to HLB disease.

We are also enhancing traceability across our value chain, building long-term supplier partnerships, and improving supply chain transparency. By combining innovation with sustainability, Mane is committed to navigating supply challenges and delivering high-quality, responsible flavor solutions for the future.

People at Heart

Looking ahead, Mane's success will rest above all on its people. By fostering talent, empowering teams with advanced tools, and nurturing close customer relationships, the Group combines human creativity with technological excellence. This unique synergy enables Mane to remain agile, anticipate change, and continue delivering meaningful, innovative solutions in an ever-evolving marketplace.

McCormick

2025 Sales: $6.8 billion (across all categories)

Headquarters: Hunt Valley, Maryland

**Commentary courtesy of McCormick & Company Inc.*

McCormick's Brendan Foley on AI, Heat Culture & the Next Era of Flavor

"As the industry expands toward broad-based ingredient solutions, our distinction lies in maintaining a 100% focus on flavor."

For more than 135 years, McCormick has been driven by a singular purpose—to make life more flavorful. Guided by our vision to be the world's most trusted source of flavor, we've shaped how people experience taste across food and beverage.

Our story began in 1889, when founder Willoughby McCormick started selling root beer and flavor extracts from his Baltimore cellar. From those humble beginnings to becoming founding members of the Flavor and Extract Manufacturers Association (FEMA), McCormick has remained at the heart of flavor innovation.

As the industry expands toward broad-based ingredient solutions, our distinction lies in maintaining a 100% focus on flavor. It's what defines us and what continues to inspire everything we do. Rooted in a natural heritage and deep culinary expertise, we're uniquely positioned to meet today's consumer demand for healthier, cleaner products that never compromise on taste. Unique and distinctive is our dual identity: both a flavor house and a global consumer brand leader. With insights spanning every channel—from home kitchens to foodservice—we understand flavor from every angle, enabling us to predict trends and create experiences that resonate across cultures and cuisines.



"AI and machine learning are deeply integrated across McCormick's flavor creation process, from consumer insights and sourcing to product development," says Brendan M. Foley, chairman, president, and chief executive officer, McCormick & Company Inc. "These digital tools enhance how we engage with customers, enabling faster, insight-driven innovation with greater agility and high-impact in the marketplace."

Courtesy of McCormick

Wellness-Driven Flavor, Global Heat Trends, Sustainable Sourcing and AI-Powered Taste Innovation

Q&A with Brendan M. Foley, chairman, president, and chief executive officer, McCormick & Company Inc.

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Q: How is your company adapting to global changes in dietary habits and flavor expectations?

Foley: As global dietary preferences evolve, the growing focus on wellness is redefining consumer expectations of flavor. Today's consumers prioritize quality of life, seeking foods that deliver functional benefits alongside taste. This shift is driving demand for products that are natural, clean-label, and nutritionally balanced—without compromising taste. McCormick is well-positioned to meet this demand, grounded in our long heritage of expertise in natural ingredients.

For over 20 years, the McCormick Science Institute (MSI) has sponsored independent research on the health benefits associated with the use of culinary herbs and spices on diet quality. MSI supports peer reviewed published research highlighting the positive physiological effects of herbs and spices to make nutritious foods more appealing.

Our health and wellness innovation pipeline continues to grow as customers reformulate existing products and launch new health-forward offerings. Reformulations target sodium, sugar, and artificial ingredient reduction while enhancing nutrient density, without compromising taste. These improvements also deliver sustainability benefits, such as reducing carbon footprint specifically when dairy is replaced by plant-based alternatives.

Advanced taste technology is enabling this transformation at scale. McCormick Optify taste modulation platform enhances creaminess, juiciness, and saltiness in reduced-fat or reduced-sugar formulations and minimizes off-notes in plant-based proteins. Our technology enables the use of proprietary ingredients that effectively balance bitterness from functional ingredients, allowing consumers to enjoy healthier, flavorful choices.

We continue to strengthen our extracts portfolio—spanning fruit, vanilla, herbs, and spice tonalities derived through cold-pressed extraction and steam distillation—to meet growing consumer and customer demand for clean labels.

McCormick's proprietary encapsulation technology preserves the fresh taste of natural flavors when converted to powder, performing exceptionally across citrus, coffee, aged beer and savory umami profiles.

Q: What emerging flavor trends are you seeing?

Foley: Spotting what's next has long been our competitive edge, powered by a global reach that connects kitchens, cultures, and consumers everywhere. Our 26th Flavor Forecast continues that tradition, uncovering the trends shaping tomorrow. From early calls like pumpkin spice and chipotle to today's bold new directions, our predictions don't just follow trends—they define them.

For 2026, we're celebrating black currant as the Flavor of the Year—a tart-yet-sweet berry symbolizing our key trends: Attainable Opulence, Simple to Spectacular and Sauce from Somewhere. These reflect consumers' desire to elevate everyday meals, find beauty in simplicity, and explore global flavors through innovative sauces and spreads.

And then there's heat—our signature competency. We've been measuring, mastering, and reinventing it since 1983, from the science of capsaicin to the sensory warmth of ginger, pepper, and mustard. Today, 84% of global consumers are seeking that thrill, and heat has evolved beyond intensity into artistry. We see it in three forms: the unapologetic burn of Heat for Heat's Sake, the personality of Super Hero Chilli, and the nuanced balance of Complex Fire, where sweet meets spicy in perfect harmony.

Our Flavor Forecast has consistently anticipated this evolution—from wasabi (2007) and gochujang (2012) to mala (2020) and aji amarillo (2025)—showcasing how heat and global flavor exploration continue to define the future of taste.

Q: What role do you see sustainable sourcing playing in the future of the flavor industry? And how are you preparing for potential supply chain disruptions?

Foley: Sustainable sourcing will be central to the future of the flavor industry as consumers increasingly demand environmentally responsible products. At McCormick, we view sustainability as both a responsibility and a strategic advantage—essential for ensuring quality, cost efficiency, and long-term supply security. Our global supply chain sources over 14,000 ingredients from over 85 countries, many of which face climate and social challenges. To build resilience, we embed sustainability into our business processes and decision-making.

Through our Grown for Good framework for key iconic ingredients, recognized at Farm Sustainability Assessment (FSA) 3.5 Silver level by the Sustainable Agriculture Initiative Platform—we advance regenerative agriculture, biodiversity, and fair labor across our supply chain, positively impacting more than 54,000 acres of farmland, 53,000 farmers in 11 countries. In Madagascar, for instance, our participation in the Sustainable Vanilla Initiative supports over 25,000 farming households and distributes millions of seedlings to promote biodiversity and regenerative farming.

These combined efforts strengthen farmer livelihoods, secure ingredient quality, and mitigate risks from potential supply chain disruptions, ensuring that sustainability remains integral to both our business performance and the future of flavor.

Q: How is AI or machine learning being integrated into your flavor development process?

Foley: AI and machine learning are deeply integrated across McCormick's flavor creation process, from consumer insights and sourcing to product development. These digital tools enhance how we engage with customers, enabling faster, insight-driven innovation with greater agility and high-impact in the marketplace.

First in Flavor, McCormick's proprietary multi-step trend identification process, pinpoints flavors just before they reach widespread adoption. By integrating menu insights, search behavior, social engagement signals, e-commerce performance, and strategic evaluation, the tool identifies emerging tastes at the optimal moment for scaling. This data-driven approach accelerates speed to market and increases the success rate of innovation.

Our partnership on a cloud-based platform provides real-time traceability across our supply chain, capturing data on field mapping, production, and sales. McCormick is uniquely positioned across the full spectrum of the vanilla value chain from orchids to retail. This modern agritech approach ensures all vanilla shipments are fully traceable back to the farms, reinforcing transparency and trust while delivering the authentic flavors consumers love.

Flavor design is both an art and a science, traditionally requiring years of expertise and extensive experimentation. To accelerate this process, McCormick co-developed SAGE, an AI-powered system built on decades of proprietary sensory science, taste profiles, and consumer preference data. SAGE helps product developers create innovative flavor experiences with improved taste, quality, cost efficiency, and sustainability—reducing trial-and-error and strengthening customer relationships.

Culinary Heritage, Science and Digital Innovation to Shape the Future of Flavor

For more than 135 years, McCormick has evolved alongside changing consumer expectations while making life more flavorful. By combining culinary expertise, scientific research, responsible sourcing, and digital innovation, we are shaping the future of flavor and reinforcing our position as the world's most trusted source of flavor.



Robertet

2025 revenue: €843.9 million (across categories)

Headquarters: Grasse, France

**Commentary courtesy of Mark Bailey, Senior Vice President, Global Flavors Division, Robertet*

Shaping the Future of Flavor Through Emotion, Science and Nature

How Robertet is blending natural mastery, emotional science and entrepreneurial creativity to redefine the future of flavor innovation.

With 175 years of expertise and deep roots in Grasse, the Robertet flavors division continues to pursue a clear ambition: to elevate natural flavor solutions through innovation. Yet beyond heritage and expertise, the true strength of Robertet lies at the heart of its business: creation, entrepreneurship, and the relentless desire to help customers' brands succeed with their consumers.

In a world shaped by changing dietary habits, rising health awareness, and growing sustainability expectations, flavor has taken on a new dimension. It is no longer simply about taste performance. It is about emotion, trust and delivering reassurance and joy in every consumer experience.



"At its core, Robertet's ambition is simple yet powerful: to future naturals by putting creation at the service of brands, and brands at the service of consumers," says Mark Bailey, senior vice president, global flavors division, Robertet.

At Robertet, creation is at the heart of everything we do with a mindset that drives the transformation of natural raw materials into meaningful sensory experiences. Our flavorists embody the entrepreneurial spirit that empowers teams to challenge convention, anticipate shifts, and move with agility in an increasingly complex marketplace.

Elevating Nature through Science and Emotion

Naturality is not seen as a constraint, but as a source of differentiation and inspiration. Through its Futuring Naturals vision, Robertet combines scientific excellence, sensory mastery, and ethical responsibility across the

Courtesy of Robertet

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entire value chain. More than 1,600 natural raw materials sourced from over 50 countries form the palette from which our creators design authentic and emotionally resonant flavor solutions.

What makes this approach distinctive is the integration of emotion into innovation. Through technical and sensory expertise, Robertet can leverage proprietary patented tools inspired by AI and neuroscience to decode how consumers truly feel when they taste a product. This enables creators to move beyond formulation to crafting experiences that can spark emotions such as comfort, nostalgia, energy, or indulgence.

By uniting science and emotion, Robertet elevates flavor from a technical component to a strategic lever for brand success helping customers build stronger, more lasting connections with the consumers.

Entrepreneurial Innovation Serving Brand Performance

Innovation at Robertet is sparked by proximity. Proximity to nature, to customers, and to consumers. Talented, cross-functional teams in research, marketing, and creation work together to transform global trends into concrete, market-ready solutions.



"By elevating nature through science, emotion, and entrepreneurial spirit, Robertet does more than develop flavors, it crafts experiences that inspire, reassure and endure," says Mark Bailey, senior vice president, global flavors division, Robertet.



"By uniting science and emotion, Robertet elevates flavor from a technical component to a strategic lever for brand success helping customers build stronger, more lasting connections with the consumers," says Mark Bailey, senior vice president, global flavors division, Robertet.



"Whether addressing sugar or salt reduction, bitterness masking, or nutritional fortification, the objective always remains clear; improve nutritional value without sacrificing pleasure," says Mark Bailey, senior vice president, global flavors division, Robertet.

Whether addressing sugar or salt reduction, bitterness masking, or nutritional fortification, the objective always remains clear; improve nutritional value without sacrificing pleasure: "if it ain't tasting great, the consumer won't buy it!"

Robertet is at the forefront of innovations in the functional food and drinks market thanks to our unique integrated sourcing, our extraction processes our analytical methods and formulation expertise. Positiv'Food comes from the synergy between the Health and Beauty division and the flavor division by combining the expertise of both divisions. Natural active ingredients are integrated into our flavor systems that support well-being and credible claims, aligned with regulatory frameworks across regions.

This collaborative approach ensures that innovation directly fuels brand growth. . Rather than pursuing disruptive profiles, Robertet evolves known tastes through subtle natural nuances and textures, allowing brands to innovate progressively while maintaining consumer confidence.

Glocal Strength, Resilient Future

The future of flavor demands resilience as much as creativity. Supply volatility, environmental pressures, and regional diversity require an innovation model that is both globally connected and locally empowered.

Robertet's "glocal" strategy reflects this belief: combining centralized scientific excellence with strong regional presence and entrepreneurial agility. Investments such as the new development platform in Poland reinforce customer proximity while strengthening the group's international innovation network.

Programs like the cocoa reduction program further demonstrate how creation and science come together to solve complex challenges, preserving indulgence while responding to economic and sustainability pressures.



"The future of flavor demands resilience as much as creativity. Supply volatility, environmental pressures, and regional diversity require an innovation model that is both globally connected and locally empowered," says Mark Bailey, senior vice president, global flavors division, Robertet.

Across all initiatives, sustainability is embedded as a structural driver of performance and trust, from responsible sourcing and traceability to upcycling and co-product valorization.

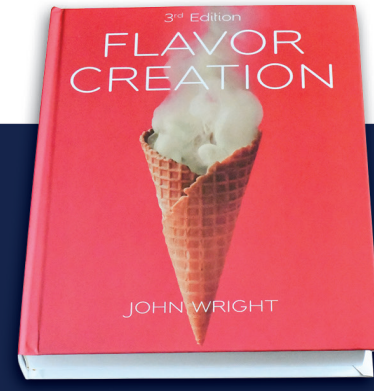
At its core, Robertet's ambition is simple yet powerful: to future naturals by putting creation at the service of brands, and brands at the service of consumers.

By elevating nature through science, emotion, and entrepreneurial spirit, Robertet does more than develop flavors, it crafts experiences that inspire, reassure, and endure.

JOHN WRIGHT'S FLAVOR CREATION,
Third Edition is now available!

Order the Third Edition now through Blurb
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This must-have guide covers everything from flavor creation techniques and raw materials to end products and sensory science.
Get your copy today!



Scentium

Sales 2025: € 380M

Headquarters: Murcia, Spain

**Commentary courtesy of Scentium, which is part of Iberchem and a Croda brand*

Inside Scentium's 22% Growth Surge and Global Flavor Expansion



"Over the past 12 months, Scentium has experienced a particularly strong period of growth, achieving a 22% increase in global turnover," says Manuel García, global sales director/ deputy general manager Scentium. "This performance was driven by our differentiated service model in priority product categories and territories across emerging markets, as well as by our niche-focused strategy in more mature markets."

From Swicy Snacks to AI-Driven R&D: How Scentium Is Scaling Flavor Innovation

Q&A with Manuel García, Global Sales Director/ Deputy General Manager Scentium

Q: Can you give a brief overview of some key highlights of milestones the company reached over the last 12 months?

García: Over the past 12 months, Scentium has experienced a particularly strong period of growth, achieving a 22% increase in global turnover. This performance was driven by our differentiated service model in priority product categories and territories across emerging markets, as well as by our niche-focused strategy in more mature markets.

Several initiatives developed in previous years reached full commercial momentum in 2025, generating significant and recurring business. Notable examples include our strong growth in citrus flavors and emulsions for soft drinks in Africa, natural flavors for pasta fillings in Italy, and berry profiles for extruded candy and licorice across multiple regions.

Another major milestone was the expansion of our production facilities in Alhama de Murcia, our HQ, adding new manufacturing capacity for both powder and liquid flavor formats. In parallel, we increased our emulsion production capabilities in Nanchang, China. We also strengthened our global innovation infrastructure by establishing dedicated pilot plants in Spain for beverage, dairy, confectionery, bakery and savory applications, opening new offices and laboratories in Colombia, and expanding our laboratory space in Dubai.

Courtesy of Scentium

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"While the flavor industry is traditionally a 'sticky' business, where long-term relationships and the complexity of switching suppliers play an important role, companies cannot rely on this alone," says Manuel García, global sales director/ deputy general manager Scentium. "If you are unable to consistently deliver the solutions your customers need, competitive pressure will quickly increase. Deep industry expertise and highly customer-focused R&D will therefore remain essential to sustaining competitiveness."

Q: What emerging flavor trends are you seeing in your key markets, and how quickly can your company adapt to these changes?

García: Across our key markets, we are seeing strong momentum around tropical and nostalgic flavors with a modern twist, Asian-inspired profiles, and bold chili-based combinations.

In beverages, we expect a decisive adoption of trends such as prebiotic sodas and flavor-driven line extensions combining cream, fruit and herbal notes. Tropical profiles including pineapple, guava and passion fruit continue to gain traction, while Asian inspirations such as yuzu, ginger and ube are attracting increasing interest from both brands and consumers.

In confectionery, indulgent profiles like pistachio, matcha, vanilla cream and bakery-inspired notes remain on the rise. Meanwhile, in savory snacks, "swicy" (sweet + spicy) flavor combinations continue to resonate strongly with consumers, and pickle has emerged as one of the fastest-growing profiles.

At Scentium, we are able to respond quickly to these evolving trends thanks to our agile monitoring of market data and consumer insights through our global network of partners and associates. This is complemented by a flexible, decentralized product development model that allows our regional teams to translate emerging trends into relevant flavor solutions with speed and precision.

Q: What key consumer trends do you believe will shape the future of flavor preferences and development?

García: In mature markets, consumers are increasingly informed about nutrition, fitness and mental well-being, and they expect food and beverages to support their everyday health. As a result, there is growing demand for products that deliver added value through functional benefits such as energy support, relaxation, immunity, protein or gut health. Future flavor development will therefore need to work seamlessly with specialty ingredients designed to deliver these benefits.

At the same time, the "less is more" mindset continues to gain ground. Consumers are seeking products with less sugar, fewer calories, less alcohol and reduced sodium. This shift is driving demand for flavors that feel clean and authentic, including fresh, true-to-fruit profiles as well as nostalgic yet playful and experiential flavor concepts.

In emerging markets, our focus is on supporting customers in developing affordable, nutritious products with flavors tailored to local taste preferences. Success in these regions also requires careful consideration of regulatory frameworks and cultural or religious requirements, which are often key factors in the successful launch of new products.

Q: Looking ahead 3-5 years, what strategic initiatives will be critical for maintaining competitive advantage in the flavor industry?

García: Protecting and strengthening existing business will remain a primary strategic priority. While the flavor industry is traditionally a "sticky" business, where long-term relationships and the complexity of switching suppliers play an important role, companies cannot rely on this alone. If you are unable to consistently deliver the solutions your customers need, competitive pressure will quickly increase. Deep industry expertise and highly customer-focused R&D will therefore remain essential to sustaining competitiveness.

There is also still significant R&D work ahead for our industry. A good example is the plant-based category. Despite the substantial investments made across the sector, sales volumes for plant-based meat and fish alternatives have recently stagnated in several markets, which suggests that taste and aroma still do not always match the expectations consumers have of the traditional products they aim to replace.

Looking ahead, artificial intelligence also has the potential to become a powerful tool for the flavor industry. It can support analytical processes and product design, helping to reduce development timelines and accelerate time to market. However, because the "language" of flavor is highly specialized and largely based on proprietary data, the real competitive advantage will depend on the quality of internal datasets and on systematic product evaluation methods.

Sensient Technologies

2025 Sales: Approximately $1.61 billion (across categories)

Headquarters: Milwaukee, Wisconsin

**Commentary courtesy of Sensient*

Sensient's Flavor Playbook for a Rapidly Evolving Food Industry



Across the board, consumers are looking for multi-sensorial experiences. So much of life is consumed via screens now that people crave fully engaging, elevated sensory experiences whenever possible. We are not only considering taste, but also texture, mouthfeel, color, aroma and more.

Courtesy of Sensient Technologies

Sensient Technologies provides innovative, scientific solutions for food, pharmaceutical, and personal care products in a safe and sustainable way.

Sensient offer a comprehensive suite of products and services for food industry customers, including flavors, extracts, taste modulators such as flavor enhancers and maskers, colors, agricultural ingredients, and biotransformed flavors.

Sensient believes in transparency, where honesty and clear communication forms the basis of our interactions with customers and employees. This core value has earned Sensient a reputation for operating in a legal, ethical, and responsible manner around the world.

With a goal of going beyond serving as a reliable supplier, Sensient strives to be a true partner that listens, understands, advises and delights the food developers and manufacturers who trust us with their flavor needs.

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Prepared for a Changing World

In 2025, Sensient Flavors & Extracts introduced several solutions that help customers respond to emerging challenges in the market and the world at large.

In June, the company launched BioSymphony, an innovative portfolio of natural flavors crafted directly from nature's finest ingredients. BioSymphony delivers authentic, high-impact flavor solutions that enable food and beverage developers and manufacturers to do more with less.

BioSymphony delivers value in three strategic ways:

1. Premiumization: BioSymphony enhances products with deeper, more sophisticated flavors, helping them stand out.
2. Flavor Expansion: By adding nuance and tonal complexity to existing flavors, BioSymphony helps developers unlock new dimensions in their current flavor library.
3. Ingredient Challenge Solutions: BioSymphony boosts the performance of key ingredients, allowing developers to reduce or replace premium, scarce or production-limiting ingredients while preserving the intended flavor impact.

Sensient has also developed a line of masking solutions aimed at helping clientele navigate challenges associated with the widespread formulation conversion to natural colors. For example, PureMask solutions have been enhanced to specifically mask flavor and odor off-notes that can be associated with natural color sources in some applications as the food industry continues its shift away from synthetic colors.



Paul Manning, CEO of Sensient Technologies

Providing Innovative, Reliable Expertise

Toward the end of 2025, Sensient introduced The Pipeline for beverage creators. This beverage development hub brings together the expertise of scientists, manufacturing experts, marketing professionals and product developers to help improve the success rate of new beverage product launches. Customers can get strategic guidance along every step of the process, partner with Sensient's experts from all segments of beverage creation and formulation, and enjoy access to a vetted network of packaging, production, distribution, sales and marketing partners.

The Pipeline's structured process uses a highly personalized approach to provide access to all resources in one place, creating an ideal experience for any beverage creator from startups to more established and experienced developers.

Growing economic pressures are forcing the flavor market to find ways to add purpose and value to everything. Understanding how consumer trends impact flavor trends helps Sensient identify new methods to add that purpose and value.

Across the board, consumers are looking for multisensorial experiences. So much of life is consumed via screens now that people crave fully engaging, elevated sensory experiences whenever possible. We are not only considering taste, but also texture, mouthfeel, color, aroma and more.

Functionality beyond simple nourishment has become a baseline expectation. People want food and beverages that improve their lives. Consumers are looking for products that fulfill multiple needs in a convenient way that also taste great. Specific areas of interest include digestive health and nutrient-dense foods, such as high fiber or protein-rich options.

Global flavors will continue to be a consumer priority, but this category is migrating at a much faster pace than

before. The flavor profiles will no longer be a general influence pulled from a broad region. Moving forward, consumers are looking for more authentic, more exotic and more precise influences. Global flavors tend to follow the path of exotic fruits, evolving along a spectrum from adventurous to more mainstream, creating a continual cycle of seeking the next new, interesting and true-to-source flavor.

Culinary accents are also rising in popularity and importance. Sensient's experts are assisting customers with those next-level gourmet notes to make basic flavors toasted, fire-roasted, caramelized, or grilled for mouthwatering results.

To meet these needs, Sensient is leveraging tools like flavor enhancers, PureMask, TrueBoost and BioSymphony to create new flavor solutions that exceed customer expectations.

Sensient's flavor enhancers are a portfolio of yeast extracts that can be used to amplify desirable notes like umami, meaty richness, cheesy creaminess, and salty impact while delivering depth. Yeast-based products are also highly effective at supporting desirable characteristics such as texture and mouthfeel. Similarly, TrueBoost helps bring out the best taste in every application.

PureMask's adaptable masking technology will continue to become more important as demand grows for protein-dense foods, bringing with it a demand for better and stronger masking techniques.

Sensient's BioSymphony portfolio is designed to be the answer to a list of flavor challenges, such as flavor premiumization, expanding a customer's limited flavor library, boosting or replacing scarce or expensive ingredients, or balancing flavor profiles in formulations with ingredients associated with off-notes.

Sourcing and Sustainability

Environmental changes and worldwide supply chain disruptions have created unique challenges to sourcing. In response, Sensient is continuing to develop proactive programs for assessing risk, mitigating impact, and sharing solutions that respect both farms and farmers.

The pillars of Sensient's sustainability strategy—decarbonization, water stewardship, waste reduction, sustainable supply chain and sustainable product design—guide our sourcing practices, which prioritize the replenishment of lands that supply the ingredients and technologies we depend on.

Some of Sensient Flavors & Extracts' most successful efforts at solving sourcing issues include:

- Creating flavors through biotransformation
- Introducing products that address ongoing crop disease, such as citrus flavor boosters
- Collaborating with our customers to develop solutions that allow them to decrease cocoa usage
- Instituting a sustainable design principles checklist to optimize resources and reduce waste or risk within the supply chain

Our ultimate goal is to serve as a valuable partner that provides a complete flavor solution. Sensient's ability to anticipate challenges and adequately align our product portfolio with evolving consumer preferences, global sourcing challenges, and regulatory demands only adds to our arsenal of tools and technologies in support of our customers.



Symrise

2025 sales: €4.9 billion (across categories); Taste, Nutrition & Health segment revenue: €3,028 million

Headquarters: Holzminden, Germany

**Commentary courtesy of Symrise*

How Symrise Is Engineering the Future of Flavor Through AI, Naturals and Functional Innovation

From citrus alternatives and plant-based taste solutions to AI-powered formulation and sustainable sourcing, Symrise is scaling a next-generation flavor strategy built for speed, resilience and consumer-driven innovation.

Q: What were some key milestones the company reached over the last 12 months?

Over the past year, Symrise strengthened its position with solid organic growth, improved profitability, and continued strategic transformation. The company achieved 2.8% organic sales growth, increased its adjusted EBITDA margin to 21.9%, and delivered a record business free cash flow of €780 million. A proposed €400 million share buyback and 16th consecutive dividend increase underscore Symrise's long-term financial discipline and confidence in sustainable value creation.

At the strategic level, we advanced Phase 2 of the One Sym Transformation, enhancing commercial excellence, accelerating innovation, and driving structural efficiencies across the business. Investments in regional production capacity, customer proximity, and the expansion of Care & Wellness further strengthened our portfolio and global reach.

On the food and beverage side, we expanded our application and creation footprint, deepened our naturals portfolio, and invested in new technologies that improve consistency, quality, and speed of development. These steps help customers benefit from faster execution, more targeted concepts, and reliable supply supported by an increasingly resilient supply chain that strengthens service levels across both Savory and Flavor.

A particularly important milestone included the continued expansion of our global chicken capabilities. With new spray-drying capacity in France, complementing existing production in the United States, Symrise strengthened its ability to serve global and regional



Over the past year, Symrise strengthened its position with solid organic growth, improved profitability, and continued strategic transformation.

Courtesy of Symrise

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customers with a broad portfolio of chicken solutions from broths and fats to powders and authentic roasted, boiled, or grilled taste profiles. In parallel, the expansion of our liquid compounding capacity in Holzminden increases flexibility and speed in supplying high-quality liquid solutions. Together, these investments enhance supply security, enable scalable innovation, and support clean-label development across savory applications such as noodles, soups, and bouillons.

Sustainability is integral to this growth: initiatives such as "Bridging the Gap" and our robust portfolio built on side-stream valorization help customers deliver great taste with improved resource efficiency and a stronger sustainability story.

Q: How is Symrise adapting to global changes in dietary habits and flavor expectations?

Consumers increasingly seek better-for-you choices that combine health, sustainability, and enjoyment. We help brands respond by combining deep consumer insights with expertise in natural, plant based, functional, and protein-rich solutions, enabling authentic and relevant taste experiences.

As a key enabler serves our consumer insights ecosystem, combining tools such as trendscope with digital platforms like SymVision AI. Together, they help us translate emerging mindsets into concrete opportunities connecting consumer signals with faster concept creation and more precise flavor solutions.

Across Taste, Nutrition & Health, we combine these insights with strong application expertise in beverage, savory, naturals, and protein-rich solutions. For example, in plant-based protein we use targeted screening approaches such as Protiscan to help identify the right ingredient and taste strategies supporting better texture, reduced off-notes, and high consumer acceptance. At the same time, continued investments in regional flavor creation and application capabilities help us respond quickly and authentically to local taste preferences.

Q: What emerging flavor trends are you seeing in your key markets, and how quickly can Symrise adapt?

We see strong momentum in several areas:

- Natural citrus and citrus alternatives, particularly in China
- Coffee flavors around the world that enrich several application categories
- Bold, experiential snack seasonings in Asia and Latin America
- Better-for-you and non-alcoholic beverages with functional positioning
- Globally inspired culinary profiles, alongside
- Mindful indulgence across categories



Dr. Jean-Yves Parisot, CEO of Symrise

Because our application labs and creation centers operate close to customers worldwide, we can rapidly translate these trends into market-ready concepts. Our regionalized innovation ecosystem powered by insights from trendscope, AI-enabled capabilities such as SymVision AI, fast prototyping, and sensory validation supports quick adaptation, scale-up, and reliable commercialization across markets.

Q: How do you balance innovation with consumer familiarity when developing new flavor profiles?

Innovation works best when it feels both exciting and reassuring. We use sensory science and in-market insights to identify where familiarity matters most and where we can introduce novelty without compromising acceptance.

By combining consumer-led insight with creative craftsmanship and familiar taste anchors and supporting this with AI-assisted flavor design we help brands elevate recognizable profiles through new natural ingredients, functional benefits, or sustainability improvements.

Contributions from our global and local sensory panels ensure innovations remain accessible while delivering distinctive, market-relevant differentiation.

Q: How has your R&D process evolved to better anticipate shifting consumer preferences?

Our R&D process now integrates data-driven tools, AI supported prediction, and cross-functional collaboration, giving customers earlier access to insights, faster formulation routes, and more precise sensory targeting. This shortens time-to market and reduces development risk.

The establishment of our global Data & AI Hub in Barcelona strengthens these capabilities further. Insights from proprietary research including trendscope and other consumer studies feed directly into R&D briefs, enabling proactive solution design that anticipates category evolution rather than responding after the fact.

Q: Which ingredient technologies are you most excited about, and how are they transforming your offerings?

We are particularly excited about advances in naturals, next-gen bio derived ingredients, fermentation-based building blocks, savory taste technologies, and protein-focused solutions. These technologies deliver strong taste performance while supporting clean labels, improved nutrition, and sustainability.

Examples include expanded chicken-based solutions produced using new spray-drying capacity in France and health-active ingredients like Chondractiv Move, which bridge flavor, wellness, and functionality. Together, these innovations help brands create premium, differentiated taste experiences aligned with modern consumer expectations.

Q: How is AI or machine learning being integrated into your flavor development process?

AI plays an increasingly central role in our innovation engine. It helps flavorists explore more possibilities in less time by supporting quicker prototyping, more targeted ideation, and better prediction of sensory outcomes.

Through platforms such as Symvision AI, machine learning enhances formulation speed, ingredient compatibility assessments, and compliance ready design. For customers, this translates into faster development cycles and concepts that align closely with the brief from day one.

Q: How are you leveraging biotechnology or fermentation processes to create new flavor solutions?

Biotechnology and fermentation help deliver consistent, high quality, and sustainable flavor ingredients,



Walter Ribeiro, member of the board and head of Taste, Nutrition & Health, Symrise.

including taste profiles that are difficult to achieve through traditional extraction. These approaches reduce natural supply volatility and support differentiated sensory experiences.

They also play an important role in savory and protein rich applications, where fermentation based solutions help address off notes, enhance mouthfeel, and improve overall taste performance in increasingly complex food matrices.

Q: What role does sustainable sourcing play in the future of the flavor industry, and how is Symrise preparing for potential supply chain disruptions?

Sourcing transparency and reliability are becoming essential for brands and consumers alike. Through long standing partnerships with farming communities, regenerative agriculture programs, and diversified sourcing strategies, we help ensure secure access to responsibly sourced raw materials.

Tools such as our Houston CO_2 tracking platform support data based decarbonization and clearer

environmental communication, while geographically diversified production including for key ingredients such as chicken strengthens resilience against climate and market volatility.

Q: What key consumer trends will shape future flavor preferences and development?

We see continued demand for:

- Functional well-being
- Naturalness and authenticity
- Experiential and hybrid taste profiles
- Global culinary inspiration

Insights from trendscope complemented by AI-enabled analytics such as SymVision AI and younger consumer groups show growing interest in playful, adventurous flavors paired with transparent sourcing and ethical credentials. We support brands by combining early insight work, regional expertise, and rapid concepting to stay ahead of these shifts.

Q: Looking ahead 3-5 years, what strategic initiatives will be critical for maintaining competitive advantage?

We will continue to invest in customer proximity, consumer-led innovation, digital technologies, and sustainable value chains. These focus areas ensure high-impact ideas, reliable ingredients, and agile support critical components of long-term customer success.

At the company level, Symrise will continue to advance its One Sym strategy, emphasizing:

1. Commercial excellence to strengthen partnerships
2. Differentiated innovation through AI, ecosystem collaboration, and cross-segment synergies
3. Scalable efficiency across procurement, operations, and supply chain
4. Sustainability leadership, including circular models and net zero pathways

Together, these initiatives reinforce Symrise's position as a global leader in taste, nutrition, and health while supporting durable, profitable growth.



Takasago International Corp.

FY2025 sales: ¥225.092 billion

Headquarters: Tokyo, Japan

**Commentary courtesy of Satoshi Masumura, chairman and CEO, Takasago*

Beyond Taste Q&A: How Takasago Is Redefining Flavor Innovation Through Technology and Sustainability

Can you give a brief overview of some key highlights of milestones the company reached over the last 12 months?

Masumura: In 2025, we have seen steady business growth, especially in developing regions. We have opened Takasago India Taste Innovation Center (TITIC) in Bengaluru, India, for deeper engagement with our customers. Internally, we have implemented various initiatives to further improve resilience of our supply chains, recognizing that this is a major expectation from our customers. Also, Takasago has been successfully offering flavor solutions for challenges related to depletion of natural resources, and flavor innovations to improve taste and aroma in food and beverages.

How is your company adapting to global changes in dietary habits and flavor expectations?

Masumura: We continuously monitor consumer trends and translate them into innovative technologies that meet shifting demands. As consumers increasingly seek taste authenticity and flavors that are true to nature, we have advanced our Vivid Technology program with new approaches such as Retroma and Freeze Grind Technology. These innovations enable us to deliver natural, authentic flavors that not only align with modern dietary preferences but also exceed consumer expectations.

What emerging flavor trends are you seeing in your key markets, and how quickly can your company adapt to these changes?

Masumura: A major emerging trend across our key markets is what we call Taste Mosaic—the growing demand for flavor exploration through new fruits, botanicals, herbs, and spices. Consumers are seeking diverse, health-forward profiles that offer both novelty and a sense of well-being. Takasago stays ahead of this shift by rapidly developing a broad portfolio of these emerging flavors, all designed to meet global and local regulatory requirements and perform effectively across a wide range of applications.



"Looking ahead, Takasago's 'Technology for the Future' will drive innovation and strengthen our position in the flavor industry," says Satoshi Masumura, chairman and CEO of Takasago.

Courtesy of Takasago

How do you balance innovation with consumer familiarity when developing new flavor profiles?

Masumura: We visualize unprecedented flavors and consumer-preferred taste characteristics based on sensory evaluation data of commercial products. By leveraging

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various analytical techniques, we express the flavor profiles of our proprietary flavors in a human-interpretable form, paving the way for the creation of new flavors.

Through these efforts, we aim to strike a balance between delivering innovative taste experiences and maintaining familiarity. Furthermore, by integrating new technologies into existing popular flavors, we promote product development that provides consumers with a sense of reassurance while offering new surprises and discoveries.

Can you describe how your R&D process has evolved to better anticipate shifting consumer preferences?

Masumura: Takasago's CIMR team uses Global Pulse TrendSeeds, social media analytics, and consumer research to identify trends and accelerate product development tailored to regional needs. Through customer engagement and industry participation, we build an agile R&D process that responds quickly to evolving markets.

Which ingredient technologies are you most excited about, and how are they transforming your product offerings?

Masumura: Our company is actively working to utilize underutilized resources such as by-products generated during citrus juice production as new flavor ingredients. By adding new functionalities and repurposing by-products that were traditionally used as animal feed or discarded, we aim to reduce environmental impact and strengthen sustainability, while creating new value for conventional flavors.

How is artificial intelligence or machine learning being integrated into your flavor development process?

Masumura: Takasago is integrating artificial intelligence into our flavor development process through Ai-T-Aroma, a deep learning-based generative AI platform designed as a new strategic tool for flavor creation. This technology enables us to efficiently and cost-effectively design optimal flavor profiles that align with evolving consumer demands and expectations. While still a work in progress, Ai-T-Aroma is being continuously enhanced by combining our technical expertise in flavor creation with extensive consumer insights and market trend analysis. This integration allows us to accelerate innovation and deliver flavors that are both scientifically optimized and deeply relevant to global consumer preferences.

How are you leveraging biotechnology or fermentation processes to create new flavor solutions?

Masumura: Takasago is advancing sustainable flavor and fragrance solutions through biotransformation and precision fermentation. Since 2020, we've partnered with NEDO (New Energy and Industrial Technology Development Organization) on bio-production projects, and in 2023 joined a new initiative to upcycle unused organic residues into valuable aroma ingredients. Guided by Vision 2040 and NGP-2, from FY2024 we will accelerate R&D in upcycling and bioproduction to support the bioeconomy and a circular society under our slogan: "Symbiosis with Nature."

What role do you see sustainable sourcing playing in the future of the flavor industry, and how are you preparing for potential supply chain disruptions?

Masumura: We believe that sustainable sourcing will play an increasingly important role in the flavor industry by supporting not only environmental and social responsibility but also long-term quality and supply stability. At Takasago, we promote long-term raw material security through "TaSuKI", an initiative focused on co-creation with sourcing regions and addressing social and environmental challenges at origin. In addition, we strengthen transparency and risk management across our supply chain through TakaSource to better respond to volatility and uncertainty.

What key consumer trends do you believe will shape the future of flavor preferences and development?

Masumura: Health and well-being will remain the defining macro trend shaping the future of flavor preferences and development. Within this, two key drivers—Empower Wellness and Emotional Journey—are expected to lead the way through 2026 and beyond. Consumers increasingly seek food and beverage products that support both physical and emotional well-being, favoring options with reduced or no sugar, salt, and fat, yet unwilling to compromise on taste.

Looking ahead 3-5 years, what strategic initiatives will be critical for maintaining competitive advantage in the flavor industry?

Masumura: Looking ahead, Takasago's "Technology for the Future" will drive innovation and strengthen our position in the flavor industry. This platform focuses on five key areas: Basic Taste & Nutrition (delicious products with less sugar, salt, and fat), Health & Well-being (functional and emotional benefits), Plant-Based & Animal-Free (sustainable alternatives), Sustainability (renewable flavor solutions and reduced environmental impact), and Technological Innovation (breakthrough advancements). Together, these pillars enable us to shape healthier, more sustainable, and inspiring products for the future.

GLP-1 DRUGS ARE RESHAPING SCENT PREFERENCES AND PERCEPTIONS

Accounts point to a spectrum of olfactory changes rather than a single predictable effect as reward signalling is subtly rearranged.



A growing number of users of GLP-1 weight-loss medications are reporting an unexpected side effect that sits far outside the drugs' intended metabolic targets: a reshaping of smell itself. Across patient anecdotes, clinician observations and emerging cultural signals, a pattern is forming in which appetite suppression appears to be accompanied by heightened, altered or newly emotionally charged responses to fragrance.

The reports span multiple compounds in the GLP-1 class, including Ozempic, Wegovy, Mounjaro and Zepbound, and appear in both clinical interviews and informal online communities.

In reporting from *HuffPost*, patients described fragrances taking on an almost intrusive intensity or emotional stickiness[a]. One comedian said a single Le Labo scent became an obsession for days, while others described a shift toward frequent reapplication, layering and rapidly changing scent preferences. Some users on GLP-1 drugs reported gravitating toward dense florals and vanilla-heavy compositions, building collections that expanded rapidly as appetite for food diminished.

Meanwhile, a 2025 personal essay in *Allure* described[b] the opposite reaction: formerly beloved perfumes becoming unbearable, especially gourmand or edible-smelling notes such as vanilla, caramel and fig. In some cases, the aversion was likened to pregnancy-like hormonal shifts, with scents that once signaled pleasure instead triggering nausea or discomfort.

Taken together, these accounts point to a spectrum of olfactory changes rather than a single predictable effect: increased sensitivity, decreased tolerance, emotional repatterning or, in some cases, a substitution effect in which fragrance becomes more salient as food loses its hedonic pull.

Researchers quoted in the *HuffPost* reporting emphasize that the phenomenon is real in the experiential sense but not yet clinically mapped. Fatima Cody Stanford of Harvard Medical School noted that patients on GLP-1 drugs sometimes describe "stronger" or more noticeable smells, particularly a reduced tolerance for heavy or

[a]*https://www.huffpost.com/entry/glp-1s-smell-change_l_6a063709e4b0a33000e07180*
[b]*https://www.allure.com/story/semaglutide-glp-1-changed-sense-of-smell*

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Patients on GLP-1 drugs sometimes describe stronger or more noticeable smells, particularly a reduced tolerance for heavy or fried food odors, alongside occasional increased awareness of perfumes and ambient scents.

Image by khosrork at Adobe Stock

fried food odors, alongside occasional increased awareness of perfumes and ambient scents. However, she stressed that the theme is "increased sensory awareness rather than a complete change in smell."

More mechanistic hypotheses are beginning to emerge from olfaction research. Scientists at institutions including the Monell Chemical Senses Center[c] suggest several possible pathways: altered reward signaling in the brain, nausea-linked aversion conditioning and even direct modulation of olfactory processing, given that GLP-1 receptors are present in brain regions involved in smell and appetite regulation. One proposed model suggests that as food reward signaling decreases, other sensory channels—particularly scent—become more psychologically prominent.

At the same time, researchers caution that there are no large controlled studies yet confirming a direct causal link between GLP-1 drugs and changes in olfaction.

What is clearer is that these personal reports are now intersecting with a visible shift in fragrance culture itself.

A 2025 analysis from *The Guardian*[d] highlighted a surge in gourmand perfumes—fragrances built around edible notes such as vanilla, coffee, caramel and pastry-like accords. Market research cited in the report shows double-digit growth in dessert-inspired fragrance launches, alongside rising online searches and social media engagement for sweet scent profiles.

Industry analysts have suggested a possible feedback loop: as GLP-1 medications suppress appetite and reduce food consumption, consumers may be drawn to decadent scent experiences that simulate indulgence without eating. In this framing, fragrance becomes a form of sensory compensation—pleasure redirected from ingestion to inhalation.

The trend is already visible in product strategy. Celebrity fragrance lines and mainstream launches have leaned heavily into dessert-coded scent profiles, while social media communities have embraced "scent layering" and fragrance collecting as a form of identity expression and mood regulation.

Across both medical reporting and beauty industry analysis, a shared idea recurs: GLP-1 drugs may be subtly reorganizing how reward is experienced. With food less central, smell—one of the most memory-linked and emotionally charged senses—appears to be gaining psychological weight.

Whether this represents true neurobiological change, conditioned association, or simply heightened attention remains unresolved. But as clinicians begin to hear more consistent anecdotes and the fragrance market continues its shift toward edible nostalgia, the overlap between metabolic medicine and sensory culture is becoming harder to ignore.

[c] *https://monell.org/monell-center-researchers-present-latest-findings-at-international-meeting-on-consumer-sensory-science/*

[d] *https://www.theguardian.com/fashion/2025/aug/23/foodie-perfumes-weight-loss-drugs*



















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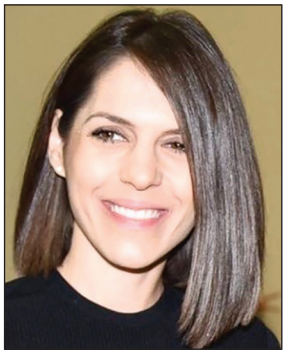
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2-Isobutyl-4-methyl-1,3-dioxolane's alcoholic, fuse oil impression in combination with its sweet element would complement brown spirits profiles, like rum, whisky, cognac.



BY MARIA PALASSAROU
Flavorist, Givaudan

Flavor Extremes: From Funky Sulfur to Zesty Citrus Precision

Our June 2026 Flavor Reports, EU Edition, features methyl-3-(methylthio)butyrate, citral-less and terpeneless lemon oil, bisabolene ex-lemon, and much more.

Organoleptic Evaluation Panelists

- **Andrea Albertino, Ph.D.,** Senior Flavorist, Esarom
- **Kavita Bhatnagar, Ph.D.,** CEO, Kanegrade Flavors & Ingredients
- **John Forbes,** Consultant, Ceressence Consultancy
- **Trevor Groome,** Consultant Flavorist – Director, Orchid Aromatech Ltd
- **Bimal Karmakar, Ph.D.,** Principal Flavorist, Givaudan
- **Jack Nicol,** Flavorist, IFF
- **Britta Nobis,** Senior Flavorist, Silesia
- **Maria Palassarou, Ph.D.,** Flavorist, Givaudan
- **Ján Peťka, Ph.D.,** Head of Flavor Development, Austria Juice
- **Michele Pezzotta,** Flavorist, Silesia Flavors
- **Aine Walsh,** Principal Flavorist, Keurig Dr Pepper

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In this month's column we evaluate ingredients from Treatt, a global ingredients manufacturer founded in 1886 and known for its expertise in natural extracts, particularly citrus oils and extracts. The column will also review high-impact aroma chemicals supplied through Treatt's long-standing partnership with UK manufacturer Endeavour Speciality Chemicals.



TreattZest Expressed Lime's zesty, sweet, coumarinic elements would complement liquors, alcoholic drinks and cocktails profiles, like mojito.

2-Isobutyl-4-methyl-1,3-dioxolane

FEMA# 4286, CAS# 18433-93-7

- **Odor Descriptors @ 1%:** Ethereal, pungent, fruity, sweet, ripe, fermented, brown notes, rummy, nutty, green grassy, slight rubbery, resinous.
- **Taste Descriptors @ 5 ppm:** Chocolate, sweet, tropical, pungent, green leafy, herbal, alcoholic rummy, fusel oil notes, metallic, rhubarb, berries fruity profile.
- **Possible applications:** Its sweet ethereal element would complement all brown tonalities, especially chocolate flavors, while it would provide additional complexity to brown nutty profiles, such as medium-roast type coffee flavors. The dominant fruity and ripe aspects would make it a great addition to various fruit flavor profiles, like tropical fruits, orchard fruits, berries, as well as dried fruit flavors. Its alcoholic, fuse oil impression in combination with the sweet element would complement brown spirits profiles, like rum, whisky and cognac. Lastly, the pungent, fermented and metallic notes could make it a great fit in dairy and cheese tonalities, like blue cheese flavors.

Methyl-3-(methylthio)butyrate

FEMA# 4166, CAS# 207983-28-6

- **Odor Descriptors @ 0.01%:** Sulfur, tropical fruit notes, like passion fruit, durian, jackfruit, fermented, vegetable, rubbery, metallic, slight alliaceous, truffle notes, cheesy.
- **Taste Descriptors @ 1 ppm:** Tropical, overripe, fermented, sweet, cooked, pulpy, fruity, sulfur, passion fruit notes, rubbery, metallic, truffle, cheesy, dried fruit notes, rummy.
- **Possible applications:** Its intense sulfur, exotic character would complement all tropical fruit tonalities, such as passion fruit, durian, jackfruit, mango, whereas its sweet, overripe and pulpy attributes would provide additional complexity to canned fruit profiles, like pineapple, stone fruits flavors, like peach and apricot, as well as orchard fruits tonalities. The sweet, fermented elements in combination with the sulfur notes would make it a great fit in dairy flavors like condensed milk, whereas its additional metallic character could also complement cheese tonalities, like mozzarella flavors.

TreattZest Expressed Lime

FEMA# 2632, CAS# 90063-52-8 (EU), 68916-84-7 (U.S.)

TreattZest products are based on a gentle multistage extraction process resulting in highly concentrated natural extracts that are intensely effective at low dosage rates.

- **Odor Descriptors @ 100%:** Zesty, sweet, lemon candy character, juicy, peely, soapy, green, lemongrass notes, coumarinic.
- **Taste Descriptors @ 15 ppm:** Zesty, lemon-lime character, sweet, juicy, fresh sharp, green, peely, aldehydic, slight soapy, herbal lemongrass notes, coumarinic, slight bitter aftertaste.

Image by Vittorio Gravino at Adobe Stock

- **Possible applications:** Its authentic lime expressed character would provide complexity to all citrus lemon and lime tonalities, even when added at low levels. The zesty, sweet, coumarinic elements would complement liquors, alcoholic drinks and cocktails profiles, like mojito flavor, as well as carbonated beverages, such as cola and ginger ale profiles, where a sweet, juicy citrus note is essential.

TreattZest Orange

FEMA# 2825, CAS# 8028-48-6 (EU), 8008-57-9 (U.S.)

- **Odor Descriptors @ 100%:** Sweet orange, aldehydic, ethereal, juicy, soapy, fatty, peely, floral, woody, pithy, green, herbal, perilla notes, metallic.
- **Taste Descriptors @ 15 ppm:** Aldehydic, fatty, soapy, waxy, peely, earthy, ethereal, floral, slight herbal, green, metallic, woody, pithy.
- **Possible applications:** The sweet and juicy orange character with the intense aldehydic body would complement all peely citrus tonalities, like orange, bitter orange, blood orange, grapefruit, mandarin and tangerine flavor profiles, even when added at low levels. Its intense woody, floral character could make it a great addition to rose flavors, whereas its sweet, juicy elements might also provide complexity to tropical pulpy fruit profiles.

Lemon oil citral-less terpeneless

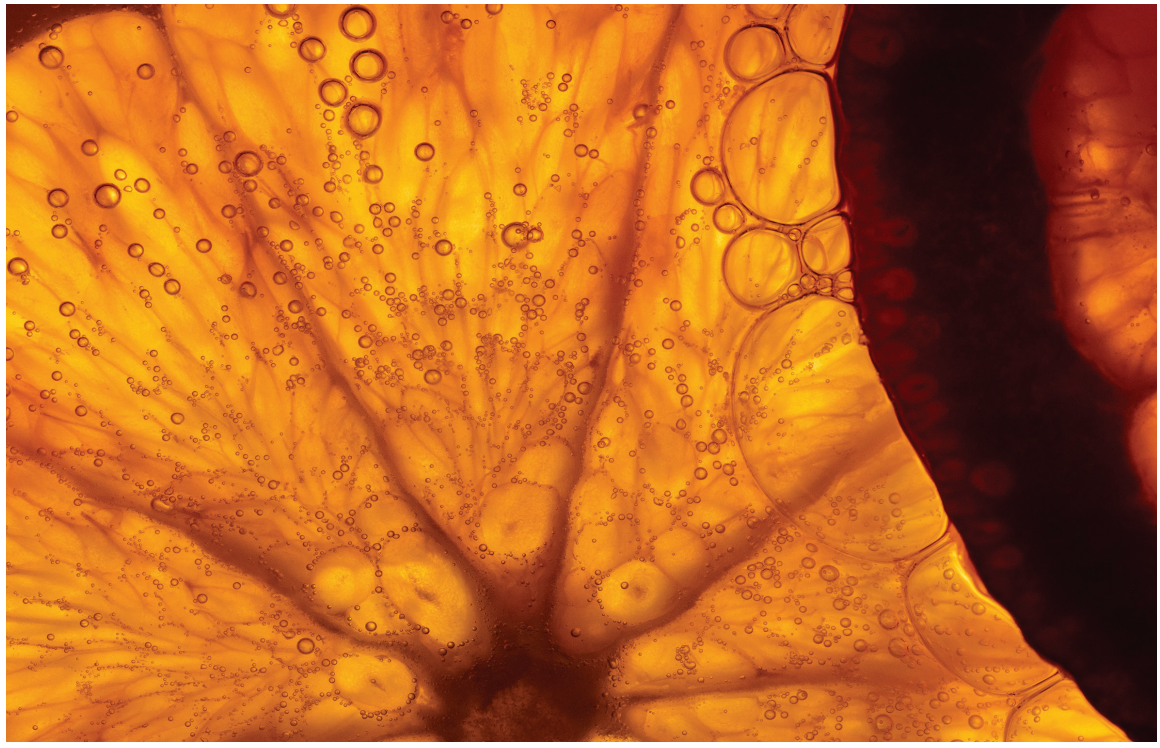
FEMA# 2625, CAS# 84929-31-7 (EU), 8008-56-8 (U.S.)

- **Odor Descriptors @ 100%:** Terpenic, woody, waxy, spicy, floral, slight soapy, green, peely, aldehydic, herbal, slight sweet fruity, earthy, metallic.
- **Taste Descriptors @ 15 ppm:** Woody, floral, earthy, herbal, spicy, metallic, soapy, waxy, aldehydic, peely, green.
- **Possible applications:** Its dominant woody, terpenic character would benefit lemon and lime expressed flavor profiles, when low citral level is needed due to stability issues in acidic beverage applications. Its strong sesquiterpene profile could also complement citrus tonalities such as orange and grapefruit flavor profiles.

Bisabolene ex-lemon

FEMA# 2623, CAS# 84929-31-7 (EU), 8008-56-8 (US).

- **Odor Descriptors @ 100%:** Woody, terpenic, earthy, citrus lime notes, green, spicy, metallic, albedo, floral, balsamic, incense notes.
- **Taste Descriptors @ 20 ppm:** Terpenic, woody, earthy, spicy, metallic, waxy, peely, albedo, sweet lime, green, cooling sensation, subtle bitterness.
- **Possible applications:** Its intense woody, terpenic character would complement a variety of citrus



Lemon Oil Citral-less Terpeneless' strong sesquiterpene profile could complement citrus tonalities such as orange and grapefruit.

Image by Vera Kuttelvaserova at Adobe Stock

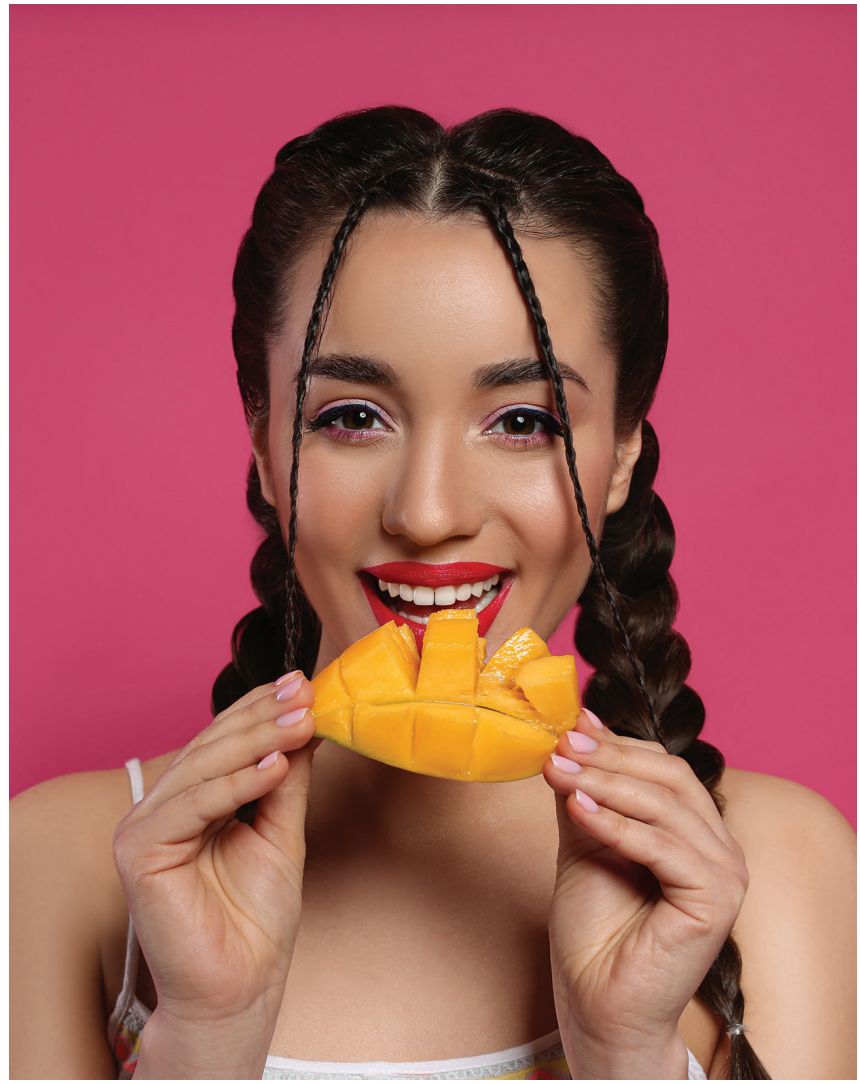
tonalities, especially lemon and lime profiles, as well as floral and spicy citrus profiles, such as grapefruit, yuzu and pomelo. The woody, earthy elements in combination with the subtle bitterness would make it also a great addition to tonic water flavor profiles.

Matcha Treattarome

CAS# 84650-60-2 (EU), 68916-73-4 (U.S.)

Matcha Treattarome Matcha is a liquid flavoring agent and fragrance compound with a matcha green tea flavor. Derived from botanical sources, it is suitable for food and cosmetic applications, offering an herbal and green fragrance.

- **Odor Descriptors @ 100%:** Green tea notes, green grassy, tea leaf, herbal, earthy, metallic, marine seaweed notes, floral, orris, jasmine, powdery, slight fruity, fermented musty notes, hay, linseed oil character.
- **Taste Descriptors @ 0.1%:** Green tea taste, herbal, tea leaf, green grassy, earthy, marine seaweed notes, metallic, sweet, fermented notes, musty, powdery, floral, violet leaf notes, hay, astringent.
- **Possible applications:** Its intense green grassy, leafy, earthy character would provide complexity to various tea tonalities, especially green tea and matcha tea profiles, while it could also complement fruit flavors with green sharp top notes, such as apple, citrus lemon, tropical fruits like mango, as well as green mint profiles. The floral and powdery elements could benefit also berries flavors, whereas its dominant marine note would make it a great addition to savory tonalities, such as seaweed profiles.



Passion Fruit Treattarome's characteristic tropical, sulfur, estery, pulpy notes would provide depth and complexity to variety of exotic fruits tonalities, such as passion fruit, mango and pineapple flavors.

Passion Fruit Treattarome

CAS# 91770-48-8 (EU), 871125-60-9 (U.S.)

Passion Fruit Treattarome is a liquid flavoring agent and fragrance ingredient of botanical origin. It provides a vibrant passion fruit flavor and fruity fragrance, suitable for both food and cosmetic applications.

- **Odor Descriptors @ 100%:** Tropical, passion fruit notes, sulfur, sweet, fermented, estery, pulpy, seedy, spicy, fruity, slight green.
- **Taste Descriptors @ 0.07%:** Tropical, passion fruit notes, sulfur catty, fruity, sweet, fermented, estery, pulpy, seedy, juicy, floral, slight soapy, berry blackcurrant notes.
- **Possible applications:** Its characteristic tropical, sulfur, estery, pulpy notes would provide depth and complexity to variety of exotic fruits tonalities, such as passion fruit, mango and pineapple flavors, whereas in combination with its fermented, floral aspect, it would complement also sweet tropical fruits profiles, like guava and lychee. The sulfur, floral elements would make it also a great addition to berry tonalities, such as blackcurrant.

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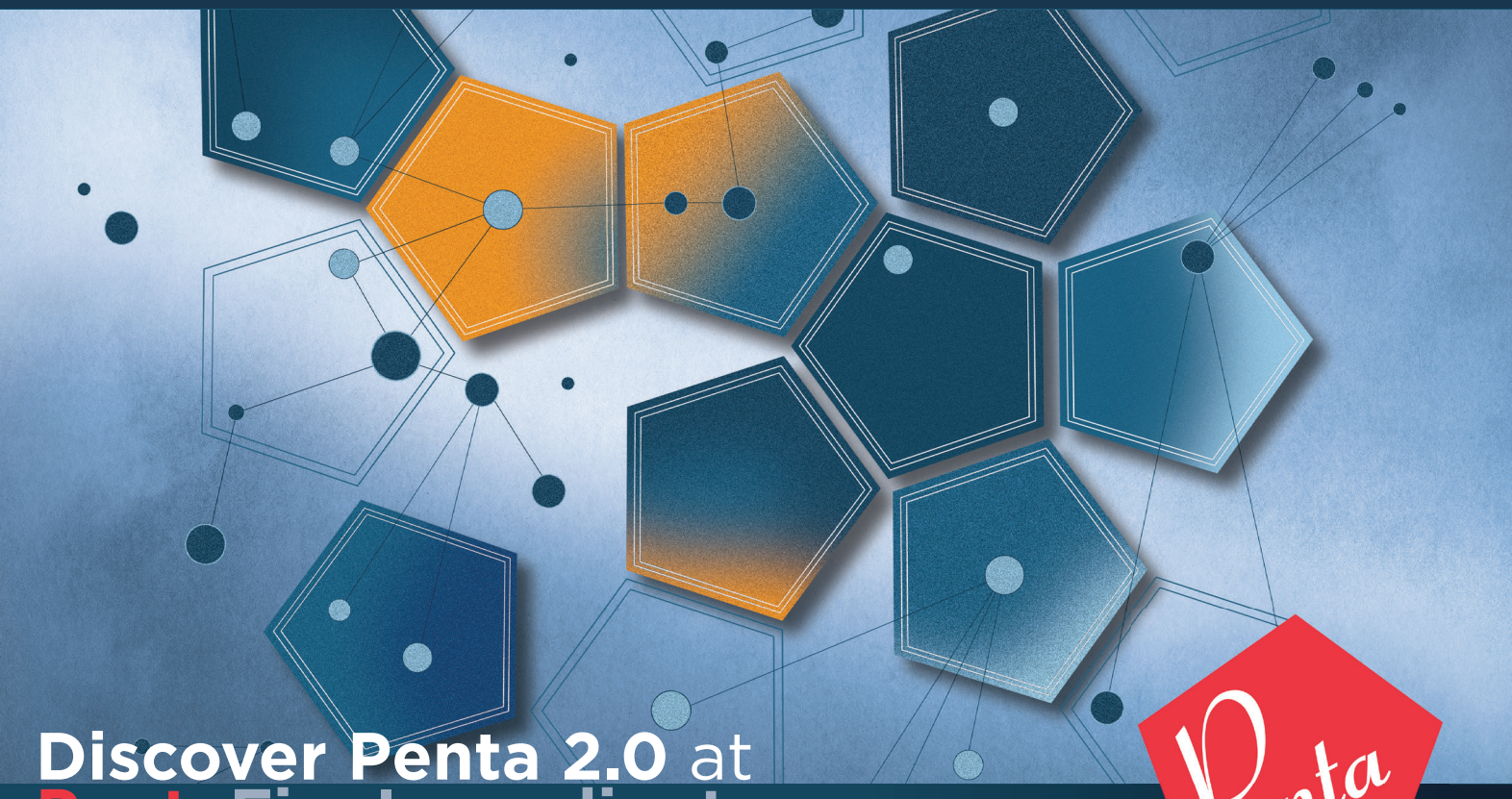
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