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July 2024

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Product Roundup: Ingredients

Fresh Multimedia F&F Offerings

2024 Leaders & Newsmakers

Key players in F&F share company strides and influences for innovation in the industry over the last year.

Fermentation for Flavor and Functionality
@ *Flavorcon* 2024

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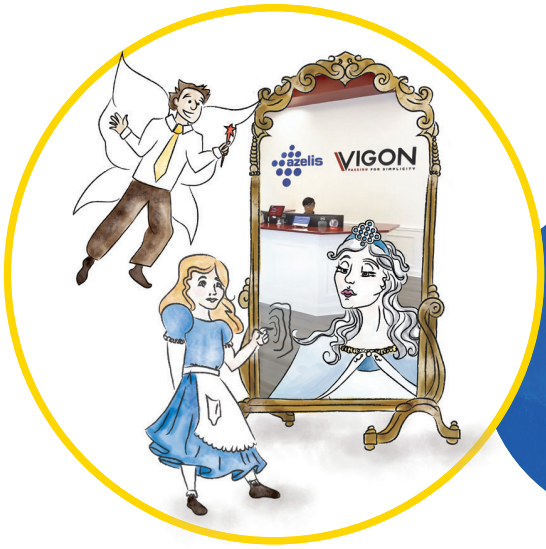
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P&F+ *looks forward to continuing its investment in an industry bursting with innovation.*

I wanted to begin this issue by saying thank you to our readers, advertisers and contributors. With your continued support, *Perfumer & Flavorist+* (*P&F+*) is able to report on the latest ingredients, technologies and regulatory updates within the global F&F industry.

As this issue is publishing shortly after the closing of *World Perfumery Congress*, we are thrilled to have hosted over 1,100 fragrance professionals from around the world in Geneva, Switzerland, at Palexpo. We hosted over 300 perfumers, who took advantage of educational conference sessions, explored a bountiful expo hall and were able to escape the office to connect with fellow creatives. Together, the future is bright for F&F. *P&F+* looks forward to continuing its investment in an industry bursting with innovation and exponential growth.

Be sure to subscribe to our free daily newsletter for the latest headlines in F&F. You can also follow along on social media for exclusive content and event recaps on LinkedIn, Facebook as well as Instagram (@perfumer_flavorist). You don't want to miss it! Like, comment and share posts to join the conversation.

Flavorcon 2024

Speaking of events, Flavorcon 2024 (*www.flavorcon.com*) is gearing up for its return to Atlantic City, New Jersey. Be sure to mark your calendar for October 8-9! We will be having a live organoleptic panel the day before (October 7), and lunch will be included with this year's panel registration. Don't forget—members of the Society of Flavor Chemists, British Society of Flavourists and the Women in Flavor and Fragrance Commerce receive discounted rates. Visit *www.flavorcon.com* for more information on discounted hotel rates, scheduled conference sessions and exhibitors. More on page 46.



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Ingredients

Sublimolide

Mane

www.mane.com

Sublimolide (CAS# 28645-51-4) is a captivating macrocyclic musk, mirroring the natural ambrettolide found in ambrette seed. Subtle at first, its musky note blooms into a warm embrace with cozy fruity nuances and powdery floral undertones. Extremely persistent, Sublimolide creates beautiful volume and a magnificent sillage. It is compatible with vegan fragrance formulations.



2,4-Decadienal

Avant Organics

www.avatorganics.com

2,4-Decadienal (FEMA# 3135, CAS# 25152-84-5) is a versatile compound with a distinct fatty chicken odor that produces robust nuances for both meat and citrus flavors. The fatty and oily characteristics of 2,4-decadienal enhance citrus by adding depth and complexity to orange and grapefruit flavors. 2,4-Decadienal is perfect for beef and chicken, adding intensity to fatty profiles as well as fried juicy top notes. It's also excellent in adding authentic qualities to potatoes, French fries and roasted profiles. Avant Organics provides this material as EU Natural, Kosher, non-GMO, and Halal. For your free sample please email info@avantorganics.com.



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www.symrise.com/de/scent-care/aroma-molecules/perfumery-ingredients/#Isomuscone

Isomuscone® (CAS# 2550-52-9), the sensual signature musk by Symrise, offers powdery and animalic facets. As a very efficient ingredient, it can be used at small dosage levels in a fragrance, where it also supports masculine, herbaceous, aromatic, spicy notes and also animalic, white flower characters. Isomuscone® is true and exceptional.



cis-3-Hexenoic Acid Synthetic & Natural

Penta International Corp.

www.pentamfg.com

Now offering *cis*-3-hexenoic acid (FEMA# 4493, CAS# 1775-43-5, JECFA# 2181) in both natural and synthetic forms. Containing a flavor base as green, fruity and sweet. Odor notes as green, grassy, fruity, cheesy with waxy, ripe and slightly buttery notes. The material is Kosher and Halal.

Images courtesy of the manufacturers



Onion Juice Concentrate Umami

Gourmet Ingredients B.V.

www.gourmet-ingredients.nl/en/products-onion-concentrate

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Customized flavors that set your products apart. Armed with market-led insights, extensive flavor systems and teams of flavor experts, we'll combine our skills with your ideas to help you reinvent your product—landing on the perfect mix of functional, visual and taste benefits. Let's be taste buds.



Citronella Oil

Berjé Inc.

www.berjeinc.com/products/essential-oils/citronella-oils/citronella-oil-chinese-85-35/

Berjé's citronella oil (FEMA# 2308, CAS# 8000-29-1) imparts a remarkably fresh and citrusy-sweet aroma, with powdery and somewhat woody undertones. The oil contains high concentrations of citronellal, citronellol and geraniol, making it exceptionally versatile for use in cosmetics and perfumery. It pairs well with citrus and floral ingredients such as bergamot, geranium and lavender.



Bis(2-methyl-3-furyl) disulfide

Natural Advantage

www.natadv.com

Natural Advantage introduces natural *bis*(2-methyl-3-furyl) disulfide (FEMA# 3259, CAS# 28588-75-2). This material occurs naturally in cooked beef and tea. It can be described as bloody, seared beef, pork, and chicken with sauerkraut and onion nuances that give it a full meat flavor. Although typically used for meats, *bis*(2-methyl-3-furyl) disulfide can also be used to add fatty notes to material as well as add creamy and milky effects at low dosage. Use levels 1ppm as consumed. It is EU and U.S. Natural, Kosher and non-GMO.

Click above to play

IFF Outlines Consumer Neo-Hedonism Flavor Cravings in Dairy Segment

IFF unveils its Trends Report on the dairy market to identify the evolving consumer trends in the dairy and alternative dairy categories. The report is said to be derived from a comprehensive quarterly global survey of 21,000 consumers and monthly market data[a], highlighting how brands can win over budget-conscious consumers by offering health benefits and resonating with consumer values.

"In the face of a global cost-of-living crisis, dairy and alternative dairy brands have found a silver lining by focusing on quality and value," said Richard Neish, head of global futures, Consumer Intelligence at IFF.

"It is not about competitive pricing; it's about delivering products that enhance wellness and align with consumer values — a strategy that is proving to be a game-changer."

The report identifies five key trends that will drive market changes and product innovation with 'BetterBeing' as a leading trend, reflecting a significant shift in consumers' health preferences. Six in ten (60%) respondents said they were always or often influenced by health labeling in their product choices.

Perfumer & Flavorist+ connected with Neish to discuss what these trends mean for consumer demands and how companies can capitalize.



"Our research found that many consumers are rewarding themselves more than they did before the pandemic seeking happiness and pleasure as everyday goals to bring delight and fun to their lives," shared IFF head of global futures, consumer intelligence, Richard Neish.

What are consumers looking for in terms of flavor with this shift?

Richard Neish: One of the key trends identified in the report is 'neo-hedonism' —a shift towards pleasure-centric lifestyles. Our research found that many consumers are rewarding themselves more than they did before the pandemic seeking happiness and pleasure as everyday goals to bring delight and fun to their lives. This is clearly reflected in the dairy sector, where taste very much remains king, particularly in categories associated with indulgence, like ice cream.

How can companies capitalize?

Richard Neish: Companies can absolutely capitalize on the new focus on sensory pleasure, but the best strategy depends on both category and target demographic, in particular age. For example, while most customers still prefer traditional dairy flavors, zoomers and millennialsa are notably keener to experience new and unusual options, with their choices more inspired by social media than older cohorts.

Meanwhile, older consumers tend to be more inclined to try new flavors on vacation, presenting an opportunity to tap into the 'gastro-tourism' market. However, bearing in mind that Gen X and Boomers are far more likely to choose traditional flavors than other demographics, it's vital that brands highlight the authenticity of different cuisines when targeting older demographics.

Brands can also deploy flavor to enhance premiumization and indulgence and upsell standard products. Ice cream, for example, is seen by most consumers as an indulgent comfort food, and we're seeing a lot of activity aimed at continuing this association, with nostalgia and premium versions of classic flavors a strong selling point. Alternatively, complex or unusual flavors can be used to appeal to adventurous consumers seeking novelty.

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[a]GlobalData 2022 Q2 global consumer survey

Courtesy of IFF

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Givaudan & Iberchem Celebrate Academia del Perfume Inductees

World Perfumery Congress 2022 speaker and Givaudan vice president perfumer, Adriana Medina, alongside Iberchem global fragrance creation director Luz Vaquero, were inducted as members of The Perfume Academy Foundation (Academia del Perfume).

The foundation celebrated the appointment of seven new Academics, five women and two men, who represent "perfume wise men," and is said to be the first entity of its kind in the world to create the figure of "the Academics of Perfume." The naming ceremony obeys a protocol inspired by those of the Royal Academies, in an environment of great historical and cultural significance.

The Perfume Academy Foundation is said to be a global elite group that brings together big noses and experts, considered the best Spanish-speaking perfumers in the world.

Each member is assigned a symbolic armchair with an olfactory note with which the Academic feels a special affinity or connection.



Givaudan vice president perfumer, Adriana Medina inducted as a member of The Academia del Perfume.



Iberchem global fragrance creation director Luz Vaquero inducted as a member of The Academia del Perfume.

As Academics by Number:

- Ane Ayo- Academic by Number, Armchair Peonía
- Adriana Medina- Academic by Number, Armchair Cinnamon
- Kilian Hennessy- Academic by Number, Armchair Ron
- Luz Vaquero- Academic by Number, Armchair Tuberosa

As Academics of Merit:

- Adriana Izquierdo Domínguez, Academician of Merit, Amberwood Armchair
- Cecilia Bembibre, Academician of Merit, Armchair Jacarandá
- Dominique Roques- Academician of Merit, Armchair Benjuí

"Tuberose is an enveloping white flower, inspiring and with a narcotic effect," said Vaquero. "It enhances a fragrance but without becoming the protagonist. It is not the queen of flowers, nor is it present in all perfumes, but it represents that special touch that rounds out a composition, that silent luxury that provides quality. In a similar way, the perfumer is that silent luxury behind a perfume. For these reasons, I chose to name my chair Tuberose," Luz Vaquero said.

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Courtesy of Givaudan

British Society of Perfumers Celebrates One Day Symposium's 40th Anniversary

The 2024 One Day Symposium (ODS) hosted by the British Society of Perfumers (BSP) marked the event's 40th anniversary. The event was held on April 25, 2024, at Whittlebury Hall Hotel and Spa (Whittlebury, Towcester NN12 8QH).

BSP's ODS welcomed keynote speaker, Nicola Pozzani, an award-winning fragrance creator and educator, to discuss "Fragrance: Bridging art and cultures." Throughout his speech, Pozzani introduced his unique fragrance background with a few examples from experiences in both commercial and educational settings. Attendees had the opportunity to smell how fragrance creation can translate perfumery heritage and culture, as well as be an inspirational tool in contemporary art.

This year's presenters included representatives from Bedoukian, Givaudan, Ventos, Biolandes and Ultra.



British Society of Perfumers' president Julie Dunkley (L) and vice president Denise McLaverty (R) cutting the anniversary cake at the ODS.

Quintessence Fragrances Expands with Offices in the Middle East



Located in Sharjah, UAE, the new offices are said to reflect Quintessence's dedication to the Middle Eastern market.

In April 2024, Quintessence Fragrances, a fragrance house based in Newhaven, UK, announced the opening of its latest office in the Middle East.

Located in Sharjah, UAE, the new offices are said to reflect Quintessence's dedication to the Middle Eastern market. Leading the office is Shafi Ibrahim, who will collaborate closely with the company's creative centers in the United Kingdom and India to expand the company's presence throughout the Middle East.

"We already have some excellent business in this area both from India and UK, so with Shafi joining our team we aim to expand rapidly throughout the region," said Grant Warden, managing director of Quintessence Fragrances.

From top: courtesy of British Society of Perfumers; Quintessence Fragrances

European Parliament Votes to Approve Revision of Chemicals Rules



The vote is said to confirm the text agreed between the co-legislators and will help support the future of the natural ingredients used in cosmetics and fragrances.

On Tuesday, April 23, 2024, Cosmetics Europe and the International Fragrance Association (IFRA) welcomed the European Parliament vote on the revision of the Regulation on the Classification, Labelling and Packing of chemicals (CLP). The vote is said to confirm the text agreed between the co-legislators and will help support the future of the natural ingredients used in cosmetics and fragrances.

"We are pleased that the trilogue negotiations have produced an agreement that puts to the fore the need for clear scientific grouping of substances for harmonized classification and labeling," said Aurelie Perrichet, regional director for Europe at IFRA. "It enhances legal certainty whilst making grouping a workable approach–which is important given how much group restrictions will likely affect the perfumer's palette."

"The revised regulation also includes specific provisions for the classification rules of substances with more than one constituent ('MOCS') derived from plants or parts of plants", said John Chave, Director General of Cosmetics Europe. "This decision will support the future of the natural ingredients used in cosmetics and fragrances – helping to meet bio-economic, social and competitiveness goals."

"We believe it is key that, following the example of the CLP, further changes to the cosmetics and chemicals legislation support competitiveness of the cosmetic and fragrance sectors while promoting sustainability of products," said Chave.

"Boosting growth and competitiveness is in line with the recent draft conclusions of the Council of the EU and the widely supported Antwerp Declaration. Respectively, these call for a new European Competitiveness Deal and for a European Industrial Deal," concluded Perrichet.

Courtesy of International Fragrance Association

The 2024 Flavor & Fragrance Leaders & Newsmakers Issue

Executives from some of the most influential F&F companies provide an in-depth look at the evolving market and provide insight into what's to come.

Welcome to the 2024 Leaders & Newsmakers issue! Over the last year, *Perfumer & Flavorist+* (*P&F+*) has witnessed industry leaders invest in the growth and development of innovation centers worldwide to address evolving customer needs.

In the pages ahead, you will get an inside look at what key players in the industry have marked as influencers for innovation across flavor and fragrance segments. Many of these players agree that the top influencers are (but are not limited to) sustainability, consumer-conscious purchasing, and the utilization of artificial intelligence in both formulation and research.

Consumer-conscious purchasing and investment are major talking points. Consumers are looking for more from their products, from functional flavors to the utilization of neuroscience in formulating fragrances. Mental well-being reigns supreme in this post-COVID environment, and F&F houses are getting creative to meet these demands to build toward a future that prioritizes health in all formats. F&F creators are tasked with being fortune-telling tastemakers. With that being said, let's hear from the people behind the curtain creating for tomorrow.

As in previous years, *P&F+* tapped industry leaders and newsmakers to weigh in on their companies' strides over the last 12 months and share their outlook on emerging trends in F&F. Some companies have provided their own introductions to the interview and have chosen a narrative format rather than a standard Q&A. All companies are presented here in alphabetical order.

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taco Bout FLAVOR

Dimethyl Sulfide, Natural
FEMA 2746
corn, alliaceous, tomato, vegetative

Thialdine, Natural
FEMA 4018 *(dilutions available)*
roasted brothy, beef-like, cooked shrimp, popcorn

Sharp Cheddar, Natural
sharp cheddar cheese

trans-2-Decenal-US, Natural
FEMA 2366 (US Natural)
fatty, cilantro, dairy & cheese notes, citrus nuances

Bis(2-methyl-3-furyl) disulfide, Natural
FEMA 3259 dilutions available
beefy, seared meat, onion and garlic

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ADM

Chicago, Illinois

2023 Sales: $3.48 billion (net income) / $93.94 billion (revenue reported)



In 2023, ADM focused on executing our business strategy to further expand our flavor capabilities, extending our commercial and technical excellence to support growth across food and beverage segments.

For this year's Leaders & Newsmakers issue, ADM has tapped three company representatives to share insights on their respective segments and discuss vital research that happens behind the scenes to create boundary-pushing flavor solutions.

Expanding Global Flavor Capabilities

Calvin McEvoy [CM]: The heart of food and beverage innovation is the sensory experience, which takes technical know-how and vast capabilities to achieve. ADM's mission is rooted in unlocking the power of nature, which we leverage to create remarkable nutritional offerings that also support our broader company-wide sustainability initiatives, ultimately enriching the quality of life for consumers across the globe. A combination of our enduring commitment to technical advancement, novel ingredients often derived from natural sources and an ever-expanding library of flavor solutions has helped us make enormous strides in flavor and product innovation over the past decade.

As a premier human nutrition company and flavor powerhouse, we are dedicated to paving the way for the future of food, through continuous investment in science, technology and creation know-how, and anticipating emerging trend opportunities. We are building upon our robust capabilities with new extensions that provide bespoke solutions for our customers to have a competitive edge.

In 2023, we focused on executing our business strategy to further expand our flavor capabilities, extending our commercial and technical excellence to support growth across food and beverage segments. This includes bolstering geographic expansion in Africa, APAC and LATAM, as well as continued leadership in North America and Europe. In Africa, we are expanding

Images courtesy of ADM

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



Martin Ongteco, vice president of Creation, Design and Development, Global Food Savory, ADM

our strategic facilities and labs to support the immense ongoing growth in this market and provide crucial proximity and agility.

Our deep expertise, premier technologies and collaborative approach to product creation, as well as production excellence through our state-of-the-art flavor production facility in Pingu, China, was key in also achieving tremendous momentum in the incredibly dynamic APAC market. Continually pushing the boundaries of flavor and taste through our creativity and proprietary solutions enables the extraordinary results coming from these regions and markets, helping our global flavors business flourish with new possibilities.

Positively impacting and widening our global reach as a flavor powerhouse are several milestone acquisitions, including Revela Foods, FDL and Totally Natural Solutions (TNS). Our acquisition of Revela Foods, a Wisconsin-based flavor developer and manufacturer with a strong focus on cheese and dairy flavor tonalities, is fueling a range of innovative possibilities to advance flavor capabilities in dairy, plant-based alternative dairy and savory product development. The acquisition of UK-based FDL reinforces our expansive global flavor and full solutions capacity, enabling us to extend further into foodservice and quick service restaurants (QSR), along with the broader food and beverage landscape. TNS, a UK-based hop oils and extracts manufacturer founded in the historic hop region of Kent, is strengthening our relationships with brewers not only in EMEA, but also opening up opportunities in other regions, particularly in markets like APAC and LATAM, which are interested in the use of hop oils and natural hop flavors.

Each of these acquisitions amplifies our flavor innovation capabilities, delivering more value to our customers and helping them reach their target consumers swiftly while staying ahead of fast-moving trends and demands. Across ADM, we are driven by a go-to-market mindset and, by coming together with these companies to serve our growing global customer set in consumer product goods (CPG), QSR and foodservice, we are building novel sensory experiences and products in the dairy, savory and beverage sectors and beyond.

Building Partnerships and Cutting-Edge Solutions Across Sectors

Martin Ongteco [MO]: As consumers' tastes and behaviors shift, the market needs to develop and encompass more choice and optionality. In each food and beverage category, there is tremendous opportunity for flavor innovation, and our global team of flavorists and formulation experts leveraging our broad portfolio and technologies puts us at the forefront of what's next.

ADM's continued investment in the Academy of Future Flavorists is critical in developing future talent to

design flavors from scratch, working collaboratively with product developers to ultimately result in game-changing food and beverage creations. Through specialized education and training over a multi-year program, aspiring flavorists are coached and mentored to unleash their creative and design capabilities, and they are taught to use ADM's unique technologies and captive ingredients in developing flavors for food, beverages and dietary supplements. Supporting the next generation of flavorists ensures that ADM, and the overarching food industry, will produce phenomenal and delicious nutrition solutions today and bring new insights and innovation for decades to come.

Crucial to this ongoing progression is our collaborations, partnerships and acquisitions, which bring on more technologies and technical expertise. For example, Revela Foods' unique solutions complement and integrate well with our global flavors portfolio and, through the exchange of creative tools, we are finding exciting cohesion points. Our sensory expertise and solutions are supporting Revela's cheese sauces and seasonings, and Revela's innovative enzyme technology adds new enzyme-modified flavors to our portfolio. This technology is particularly important in supporting clean-label product positioning, which consumers are expecting in many of their food and beverage purchases. It's another valuable tool at our disposal to power an unmatched, customizable approach to flavor and food.

FDL is augmenting our food-service strategy and supporting our CPG efforts, bringing on new proprietary flavor formulations, including providing outstanding botanical extraction capabilities. FDL also operates three production facilities and two customer innovation centers in the UK. Uniting these formulations, systems and operations with our robust flavors library, expertise and established presence in Europe accelerates the innovation pipeline for our customers.

TNS has proprietary technology for concentration and fractionation of hops, which is a significant addition to our capabilities. TNS sources varietal hop oils from different regions and develops mouthfeel and bittering agents for beer, beer mix and non-alcoholic options. They now combine with our natural flavors, including citrus and fruit profiles and malt extracts and flavors, allowing us to extend the innovation possibilities within beer and beer mix, along with the 0.0% beer space and refreshing offerings like hop water. A substantial advantage of the access to hop oils is reducing the cost associated with hops throughout the brewing and formulation processes. With TNS, we have the final puzzle piece to provide an all-encompassing beer and hops flavor portfolio.



Marie Wright, president of Creation, Design and Development and Chief Global Flavorist, ADM

As we continue to bring Revela Foods, FDL and TNS into the fold, we are already seeing synergies throughout our flavor and product development projects, deepening our foundation in different flavor families. These added differentiated technologies and solutions are providing the tools that serve as a springboard for more creative outcomes and support our vertical integration efforts from ideation to the finished product.

Innovating Today for Tomorrow's Demands

Marie Wright [MW]: Our comprehensive innovation process utilizes both our unparalleled technical understanding of flavor and our global insights team. We continually monitor emerging trends and track where the food and beverage industry is moving. Our annual flavor and color trends report is an excellent example of our consumer data in action, in addition to how we capitalize on technologies and systems to identify important patterns in consumer behavior. For our 2024 Flavor and Color Trends report, our insights collection tapped into both the knowledge built up through our expert trend-spotters around the globe, along with artificial intelligence (AI), thus bringing together the efficiency of AI with a critical human element.

Within this report, we pulled out key themes shaping the motivations behind consumers unapologetically choosing flavors and colors that reflect their personalized desires. This includes an era of consumers proudly broadcasting their various lifestyle choices to the masses. Concurrently, there is an increased focus on tailored wellness, prompting functionality demands to rise

to the top. Many consumers even expect all products to have wellness benefits as a baseline. However, they want functional beverages, snacks, plant-based options and more to taste exceptional, without compromise, including those with low- or no fat, sugar or salt, high protein or fiber or with the inclusion of biotics.

The recent hyper-focus on solutions that may stimulate the appetite-regulating hormone GLP-1 is putting additional pressure on the food and beverage industry to produce more offerings containing fiber, protein and wholesome ingredients without sacrificing a divine sensory experience. Consumers taking GLP-1 agonists may be limiting their intake of foods and beverages, but they still want them to taste fantastic. Our creation, design and development (CD&D) team works across categories with ADM's extensive health and wellness portfolio, scientists and experts, enabling quick responses to these impactful trends with innovative products, accelerating our customers' speed to market.

This is where our quality flavor solutions, novel technologies and unwavering commitment to superb sensory experiences shine, especially as there is also increased calls for sugar reduction in all facets of food and beverage. Through the introduction of our proprietary solutions and technologies, including our TasteSpark[a] flavor modulation technology, we play a pivotal role in optimizing taste challenges from functional applications. This includes supporting low- and no-sugar offerings by building back mouthfeel and texture. We also leverage this technology to mask off-notes in high-protein and high-fiber applications. We use this technology in combination with our wide range of naturally derived flavors to bring intrigue, freshness in taste, authenticity, decadence and delight to foods that meet the needs of every consumer, from better-for-you beverages to plant-based dairy and meat, condiments, baked goods and confectionery.

As we look to what may occur over the next several years, considering global events and influences, generational differences and an overall growing population, we are bringing on new partners, acquisitions, capabilities and technologies now to address future demands. For instance, forward-looking technologies will include a spotlight on AI and precision fermentation, supporting the novel creation of flavor ingredients. AI tools enable the integration of consumer needs with flavor and product development, working alongside flavor technologies to deliver a multisensory experience. Marrying new flavor experiences with new food technologies, including cell-cultivated meats and vegan-suitable whey and casein dairy products, are in the works and on the horizon. With our far-reaching capabilities, solutions portfolio and research and development centers, we are poised for action, proactively anticipating and responding to ever-evolving market and consumer demands by innovating the flavors of tomorrow.

p&f+

[a]TasteSpark is a trademark of ADM



Azelis

2023 Sales: €3.2 billion[a]



Steve Pringle shares, "The shift toward more sustainable products is another growth engine for the industry over the coming years."

In February 2024, Azelis announced the appointment of Steve Pringle, Ph.D., to the senior management role of managing director of Vigon International, an Azelis company. For this year's Leaders & Newsmakers issue, Pringle shares key company highlights over the last 12 months, influencers for innovation in F&F and Azelis' main focuses.

Can you share three key company highlights for the last 12 months?

Steve Pringle [SP]: The past 12 months have seen an exciting transition in our senior leadership with the appointments of Anna Bertona as Group CEO, Evy Hellinckx as EMEA CEO, and Todd Cottrell as Americas CEO, as well as several other business unit executives. With these changes comes an increased focus on alignment, as well as on building globally connected, digitally enabled businesses. This is even more so for the food & beverage and flavor and fragrance (F&F) markets, for which we have significantly strengthened our footprint in the Americas region with the acquisition of Gillco Ingredients in the US and Vogler in Brazil.

In October last year, we acquired BLH SAS ("BLH"), a well-known distributor of F&F focused on the fine perfumery market in France. This acquisition reinforced and expanded Azelis' F&F footprint in EMEA by strengthening our ability to serve customers in the region with additional product lines. BLH's expertise in fine perfumery and the wider fragrance market alongside our other business units including Scansmoke in the Nordics, Quimdis in France and Ashapura Aromas in India, broadens our global footprint within the segment.

In the United States, we expanded our global network of over 70 application labs with a new applications and formulations lab outside of Princeton, New Jersey that will serve our Life Science markets. These developments set Azelis up for future growth in the segment by significantly expanding our current technical offerings along with a new repacking and commercial excellence center. The new lab is co-located with other areas within Azelis which increases

[a]*https://www.azelis.com/en/news/azelis-reports-solid-margin-progress-for-9m-2023-0*

Images courtesy of Azelis

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knowledge sharing with adjacent Food & Nutrition, Personal Care, and Home Care segments thereby creating synergies across the markets and expanding our ability to meet the evolving needs of our flavor and fragrance and personal care customers.

What are the major influencers for innovation in 2024 leading into 2025?

SP: The shift toward more sustainable products is another growth engine for the industry over the coming years. Sustainability is one of our three growth drivers, together with innovation and digitalization, and a testament to our commitment to sustainability is our participation in ACD's Responsible Distribution Code, our top industry ranking on ESG by Sustainalytics (among a peer list of 178 international traders and distributors) with a score of 11.9 (lowest risk), or CDP's climate rating program, where we earned a 'B' (Management) score. In addition, Azelis has been included in Euronext's BELbESG Index[b], as one of 20 listed that demonstrate the best ESG practices. Our task will be to balance regulation with innovation. As an innovation partner with a strong focus on sustainability, we help our stakeholders advance their sustainability agenda by bringing healthy and responsibly manufactured products to market with a competitive edge.

We expect to see consumers continuing to want to connect to simple, understandable and healthier ingredients. This will continue to drive ingredient innovation and stimulate product development with a wide range of healthier product propositions across a broad range of categories. In other categories we expect indulgence to become a higher priority for consumers. Being able to connect to these trends with flavor and fragrance ingredients that combine function with taste or aroma will be important in the way we connect with our customers.



Steve Pringle, Ph.D., managing director, Vigon, an Azelis Company

[b]Euronext's BELESG is a registered trademark of Azelis

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Pringle explains, "Our purpose is innovation through formulation, for which we will continue to grow and strengthen our network of application labs and technical hubs."

What are your main company focuses and/or goals for the next 12 months?

SP: In 2024 we will continue to focus on executing our business strategy, supported by our growth drivers: Innovation, sustainability, and digitalization. Challenges in the global supply matrix will continue to be seen. Azelis is building a global network in F&F with its foundations keenly geared towards reducing these supply chain complexities, improving visibility and making things as simple as possible for our customers. Our passion for simplicity combined with the expanding Azelis global F&F network puts us in an ideal position to be able to serve the market more effectively than a complex supply network of smaller suppliers and producers could. To support this in the United States we have recently opened a new 130,000 sq. ft. distribution hub. This state-of-the-art facility will offer the latest in logistics capabilities and an improved level of agility and service.

Our purpose is innovation through formulation, for which we will continue to grow and strengthen our network of application labs and technical hubs. We will continue to find ways to deliver innovative solutions for the F&F market, leveraging the technical expertise of our highly talented lab teams and exploring ways to share learnings and innovation across related segments.

Sustainability remains a key agenda item as we continually invest in decarbonizing our operations. At Vigon, we pride ourselves as enabling our customers more sustainable solutions along with faster time to market. Another focus will be in the investment in digitalization, launching customer portals and investing in digital marketing to bring our formulations and technical expertise closer to customers.

In addition, through new principal relationships and acquisitions, we will expand our product portfolio to enhance our lateral value chain in F&F. This will allow us to offer our customers greater value through more innovative and sustainable solutions, working closely with our principals and suppliers to ensure that we continue to operate responsibly and with a high level of accountability.

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dsm-firmenich

Kaiseraugst, Switzerland and Maastricht, Netherlands

2023 Sales: €12.31 billion



Perfumery & Beauty president Emmanuel Butstraen shared, "The merger has brought new capabilities and reinforced our position to deliver added value to our customers, helping them delight consumers with product superiority across segments worldwide." (Kaiseraugst headquarters pictured)

Since the last edition of *Perfumer & Flavorist*, a new player has entered the market as a 'category-of-one' company, combining capabilities in a way that hasn't been seen before.

In May 2023, Swiss fragrance and flavors house Firmenich and Dutch nutrition and health innovator DSM combined in a merger of equals formed by two iconic companies. The result, dsm-firmenich, just recently celebrated its first anniversary.

The move has created a unique player with strengths in nutrition, health, and beauty.

Bringing together over 150 years of combined history, the merger has united two industry leaders with long-standing commitments to innovation and sustainability, with combined global revenues exceeding €12 billion.

dsm-firmenich currently has four business units that offer customers a one-stop shop for expertise in Perfumery & Beauty; Taste, Texture & Health; Health, Nutrition & Care; and Animal Nutrition & Health.

dsm-firmenich in figures:

- 30,000 employees
- 340 locations globally in about 60 countries
- 15 research & development centers

Across these businesses, the company makes products as wide-ranging as fine fragrances, probiotics, skincare products, plant-based proteins and omega-3s.

"Our newly combined organization offers integrated solutions in fragrances, flavors and health, supported by innovation-led science. By leveraging our unique ingredients portfolio and creating new capabilities, we can bring something new to the market which no other company is currently capable of delivering," said CEO Dimitri de Vreeze. "We look forward to bringing unparalleled innovations to the market and taking consumer

Images courtesy of dsm-firmenich

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Dimitri de Vreeze, CEO, dsm-firmenich

products to the next level with active benefits, thereby enhancing wellbeing while fostering customer intimacy. Our purpose is to bring progress to life, by combining the essential, the desirable, and the sustainable."

A Legacy of Innovation

Both companies had rich histories, underpinned by science. Firmenich was founded in the garage of Charles Firmenich in 1895 in Geneva, while DSM transformed itself over the past century from a Dutch mining company to an innovator in nutrition and health.

These two parts are now merged into a much larger company with even more resources to address evolving consumer trends. dsm-firmenich invested more than €700 million in science and research in 2023 as the company aims to develop disruptive products and technologies with an end-to-end innovation approach.

The company's innovation hasn't gone unnoticed. dsm-firmenich was recognized as one of LexisNexis Intellectual Property Solutions Top 100 Global Innovators in 2024.

2023 A Year of Change

2023 was focused on integrating both companies into one, combining the strengths of each company's pipeline, and creating synergies with novel joint concepts and tapping into cross-selling opportunities.

dsm-firmenich has a goal of reaching synergies of €350 million a year and getting an annual sales uplift of about €500 million by 2027.

2023 was also a challenging year in many ways with macro-economic headwinds, significant shifts in the geopolitical landscape, unprecedented dynamics in the vitamins industry, a high inflation environment, and weak demand as well as destocking.

Against this backdrop, the company took decisive and immediate actions, accelerating the company's integration efforts, transforming its vitamins business and reviewing the portfolio - prioritizing high growth and higher margin segments.

The portfolio review culminated in an intention to separate the Animal Nutrition and Health business from the Group and bring it under a different ownership structure to deliver its full potential and prosper on its own path.

For this reason, the below report will only focus on the following business units: Perfumery & Beauty; Taste, Texture & Health; and Health, Nutrition & Care.

Perfumery & Beauty

dsm-firmenich's Perfumery & Beauty (P&B) unit is a leading creation and innovation partner for some of the most iconic brands in consumer goods, lifestyle and luxury beauty. Powered by science-based innovations in fragrance and personal care, this business unit makes customers' products more desirable, essential and sustainable, driving consumers' preference.

Key priorities for P&B include green chemistry (sustainable scientific processes), conscious perfumery (the creation of sustainable fragrances and scents), and consumer-inspired innovation that delivers superior performance.

"The merger has brought new capabilities and reinforced our position to deliver added value to our



Emmanuel Butstraen, president, Perfumery & Beauty, dsm-firmenich



dsm-firmenich drives the development of disruptive products and technologies with an end-to-end innovation approach.

customers, helping them delight consumers with product superiority across segments worldwide. In this new setup our perfumers can augment their creations, push the boundaries of performance, and develop solutions in a broadened portfolio, meeting and exceeding our customers' continually evolving expectations," said Perfumery & Beauty president Emmanuel Butstraen.

Reinventing Fragrance Encapsulation

PopScent[a] Eco Max was one of P&B's biggest innovations of 2023. We reinvented fragrance encapsulation, delivering outstanding long-lasting fragrance benefits, with the first range of capsules made with 100% biodegradable ingredients.

The PopScent Eco range delivers a lasting fragrance experience from wash to wear. Crafted with diverse chemistries and complementary performance profiles, these capsules empower perfumers with the most efficient and versatile tools, offering wide creative flexibility across categories. These versatile capsules, bring high creative and applications flexibility and meet the highest sustainability standards with no compromise on consumer experience.

[a]Popscent is a registered trademark of dsm-firmenich



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SOLVAY

Dual-Release Profragrances

In July 2023, we launched HaloScent[b] BerryBoost, a fragrance innovation that releases two different perfumery molecules simultaneously, known as dual-release profragrances. These molecules, which have a low environmental impact due to their biodegradability, are activated through contact with air and water. With a new, patented natural activation technology, and a fruity olfactive profile, HaloScent BerryBoost lifts the overall product experience, increases the fragrance preference, and enhances consumers' overall sense of satisfaction. It has applications not only in-home care but also in hair care.

New Exclusive Ingredients

In 2023, we launched an exclusive collection of six natural and synthetic ingredients. This includes two captive ingredients - unique, proprietary scents that cannot be replicated by other perfumers or fragrance houses–that were released to market for the first time. Both were carefully selected by our experts to bring sustainable solutions that meet relevant regulatory requirements to fragrance formulas worldwide. The first, Mimosal[c] is an intense green muguet aldehydic note. It is highly performing and offers a long-lasting effect. The second captive ingredient, Ambrette FIRABS, is a unique signature and accessible substitute for Ambrette Absolute.

Two other exclusive ingredients launched in 2023 are Lilyflore[d] and Upcycled Cardamom Green Pod Guatemala SFE. Lilyflore is a key ingredient in the floral fragrance market, delighting perfumer palettes with its versatile and modern lily-of-the-valley facets. Upcycled Cardamom Green Pod Guatemala SFE, was created using our Supercritical Fluid Extraction (SFE) technology. SFE offers several advantages over other extraction technologies, as it reduces solvent use, energy consumption, and emissions while maintaining the integrity of sensitive compounds.

The final two ingredients launched were the powerful and complex Doremox[e], which serves as an excellent replacement for rose oxide, and cyclopidene, which, with its distinctive ylang-ylang quality, functions as a performing alternative to methylparacresol. Predominately biodegradable and designed according to the principles of green chemistry, this collection underlines our leadership and core strength in sustainability.

[b]HaloScent is a registered trademark of dsm-firmenich
[c]Mimosal is a trademark of dsm-firmenich
[d]Lilyflore is a registered trademark of dsm-firmenich
[e]Doremox is a registered trademark of dsm-firmenich



Patrick Niels, president, Taste, Texture & Health, dsm-firmenich

'Wonder You'

In 2023, we introduced 'Wonder You,' a global-reaching, cross-segmental beauty offering in the menopause category. This comprehensive product line for skin and hair care includes sun protection factor, cream, serum, shampoo and conditioner. Every solution in this collection has been designed to align with consumer trends toward holistic well-being, mindfulness, and celebration of individuality. The 'Wonder You' collection affirms our global leadership in providing scientifically proven solutions for menopause with a leading sustainability profile.

Taste, Texture & Health

The dsm-firmenich merger also brought together two highly complementary businesses with extensive capabilities in taste, nutrition and functionality in order to provide delicious, nutritious and sustainable products that deliver unique and superior consumer experiences.

The Taste, Texture & Health (TTH) business unit is led by Patrick Niels, driving advantages from the merger through cross-selling and offering customers new, integrated solutions.

TTH consists of Taste, which includes flavors, natural extracts, sugar reduction solutions – and Ingredients Solutions, which includes food enzymes, hydrocolloids, cultures, natural colorants, nutritional ingredients, yeast extracts and plant-based proteins. The business unit brings progress to life by tackling some of society's biggest challenges: providing nutritious, healthy and

sustainable food and beverages, offering appealing taste and texture, and nourishing a growing global population whilst minimizing food loss and waste.

"Our passion for the science and emotion of food extends from discovery to application, via the customer to the end-consumer. Leveraging our broad portfolio of unique ingredients and intrinsic creativity, we deliver solutions for every taste and occasion. This includes drinks with little or no sugar, dairy products with consumer-preferred mouthfeel, succulent savory bites, and nutritious plant-based alternatives that are healthier and better for people and planet," said Patrick Niels, President Taste, Texture & Health.

In 2023, we continued to increase our investments in the digital transformation of our science and innovation capabilities for TTH, with the goal of being able to generate and combine consumer, customer, and technical data insights faster.

Taste and Ingredient Solutions began joint acceleration growth programs in 2023 in sugar reduction and plant-based products. Combining the taste, texture and health capabilities of both divisions enabled us to address the challenges customers experience in reducing sugar and making meat, fish, and dairy alternatives tastier. For instance, our SmartProteins Masking solutions helped make plant-based dairy more delicious. With Smart TX PRO we can now create the right mouthfeel, bite and chew to craft customers' products to meet evolving consumer expectations.

Lactose-free Dairy Products

In early June, we launched Maxilact Next, the fastest-acting lactase enzyme on the market, to enable lactose-free dairy products to be produced more efficiently and sustainably. By optimizing production processes such as yield and throughput time, we help customers to effectively manage both unit costs and carbon footprint. We also continued to make good progress in developing comprehensive information such as carbon footprint statements and Environmental Product Declarations.

Expansion in India

dsm-firmenich acquired full ownership of the Indian company VKL Seasoning Pvt Ltd. in April 2023. Founded in 1996, VKL is the market leader in spices and flavors in India. The company is known for its strong understanding of flavors and leading reputation among Indian customers. VKL helps us further expand our seasoning capabilities and customer reach in India while expanding our raw material palette for clean label ingredients.



Philip Eykerman, president, Health, Nutrition & Care, dsm-firmenich

Excellence in Flavor Science Award for Eric Frérot

Eric Frérot, one of our distinguished scientists, received the Excellence in Flavor Science Award from the Flavor Extract Manufacturers' Association (FEMA). This is awarded to specialists who have made an exceptional contribution to flavor science – so it is an outstanding achievement and a testament to our world-class Science & Research team.

Peach+ Announced as Flavor of the Year

In December, we announced Peach+ as the Flavor of the Year for 2024, celebrating consumers' desire for exciting new ingredients and bold, adventurous flavor creation. Peach+ was inspired by emerging signals in the cultural and consumer landscape and a wide variety of influences, including culinary, fashion, design, and art. The Flavor of the Year empowers our customers to be leaders in global trends. Peach+ is an invitation to our customers to innovate with this flavor, to transcend its traditional juicy-sweet aspects and also incorporate softer, smoother, lighter, more refreshing textural elements.

Health, Nutrition & Care

dsm-firmenich believes that health is intrinsically complementary to nutrition and well-being. This is also a field that is highly synergetic with the other two business units–P&B and TTH–and is based on leading-edge scientific research, technologies and manufacturing excellence.

Health, Nutrition & Care (HNC) offers solutions for markets including early-life nutrition, dietary supplements, pharmaceuticals, medical nutrition, and biomedical materials. The business unit also addresses specific consumer nutritional and wellness needs through its direct-to-consumer i-Health business.

"HNC is dedicated to supporting the health of the world's growing population through nutrition and care solutions. The unit delivers nutritional solutions that support well-being and proactive health at every stage of life and for every lifestyle," said Health, Nutrition & Care president, Philip Eykerman.

The product range includes vitamins, nutritional lipids, minerals, carotenoids, botanical nutraceuticals, digestive enzymes, probiotics and prebiotics, active pharmaceutical ingredients and biomedical solutions.

In 2023, we became the only nutrition player with a full suite of taste capabilities, including flavors, blockers and masking systems, encapsulation technologies and delivery systems. These capabilities allow us to tackle the sensory challenges associated with many nutritional ingredients, such as B vitamins, lipids, minerals, botanicals, and proteins, and to open the door to more innovation in new consumer-preferred delivery formats.

Algae-based Alternative to omega-3

Omega fatty acids support cardiovascular health as well as cognitive and immune function. However, less than 20% of people worldwide consume the recommended 250 mg per day. This is partly due to concerns regarding their impact on marine ecosystems. In 2023, we achieved a significant milestone with the launch of life's[f] OMEGA O3020. This is the first and only single-source algal omega-3 with the same EPA-to-DHA ratio naturally found in standard fish oil, but with twice the potency. The our life's portfolio has a lower environmental impact than fish-based alternatives.

Gut Health

In 2023, we further strengthened our 'Health from the gut' offering to meet the growing demand for nutritional solutions that have scientifically backed health benefits combined with easy application and novel product formats. These clinically proven products include our next-generation Humiome[g] pre-, pro-and postbiotics, Tolerase[h] digestive enzymes, and Quali vitamins.

In July 2023, dsm-firmenich completed the acquisition of Adare Biome, a pioneer in the development and manufacture of postbiotics. Our strong infrastructure, commercialization and science capabilities will enable us to substantially scale up Adare Biome's industry-leading scientific research.

HMO Infant Nutrition Ingredients Approved in China

As a leader in HMO development and production, we are continuously pioneering advances and expanding our offering across the early-life nutrition market.

HMOs are an important component of human breast milk and have been shown to play a role in infant health by supporting immune function, gut health and, potentially, cognitive development. A growing body of scientific evidence outlining their potential benefits has shown HMOs as a powerful emerging ingredient that brings the composition of infant formula closer to that of breast milk, the gold standard of infant nutrition.

In 2023, following rigorous evaluations, two of our HMOs were approved as nutrition fortifiers for specific infant and young child products in China. This approval in China marks a significant milestone, signaling the successful navigation of a multi-year, multi-phase regulatory process that allows the unique benefits of HMOs to be accessible to infants and young children.

i-Health Consumer Business

i-Health, our direct-to-consumer business, has continued to thrive, through its focus on products serving the gut health and women's health segments, thanks to increased interest in immunity and overall health and wellness. The key launch in women's health was Estroven[i] Complete + Ashwagandha, supporting menopause symptom management.

Our Culturelle[j] probiotic range continued to attract strong consumer interest. Key U.S. launches included Culturelle Women's Health 4-in-1 Protection Capsules, which contain one of the world's most effective probiotic strains, designed to promote women's vaginal, urinary, digestive, and immune health.

Science & Research

Today's challenges demand visionary solutions. Building on a pioneering tradition that reaches back over 150 years, dsm-firmenich's Science & Research community comprises more than 2,000 employees working on innovation across 15 R&D hubs around the world. The teams are united in the pursuit of sustainable and transformative innovation for nutrition, health and beauty.

[f]The life portfolio is a registered trademark of dsm-firmenich
[g]Humiome is a registered trademark of dsm-firmenich
[h] Tolerase is a registered trademark of dsm-firmenich
[i]Estroven is a registered trademark of dsm-firmenich
[j]Culturelle is a registered trademark of dsm-firmenich



Sarah Reisinger, chief Science & Research officer, dsm-firmenich

With a track record of world-class scientific leadership and a uniquely broad portfolio of ingredients, the company applies creative expertise and proven science to improve health and well-being and address the global challenges of sustainable delivery.

"Our Science & Research teams bring together proven strengths in developing sustainable and market-leading solutions validated by rigorous, science-backed evidence. We're driven by our passion to help shape the future of nutrition, health, and beauty - and our continued investment in state-of-the-art capabilities," said chief Science & Research officer Sarah Reisinger, Ph.D.

dsm-firmenich drives the development of disruptive products and technologies with an end-to-end innovation approach. Sustainability is embedded from the outset and throughout every stage of the process - from discovery, application testing and clinical studies to scale-up and industrialization.

By harnessing the expertise of our scientists and investing in our multidisciplinary approach, Science & Research brings progress to life, driving innovation that addresses global challenges and unmet needs in nutrition, health and beauty.

We provide industry-leading science and research capabilities that drive the innovation required to deliver on our purpose and to provide differentiated solutions that combine the essential, the desirable, and the sustainable.

Shaping the Future

Sustainability sits at the core of our strategy and is deeply embedded in every single part of our business. We want to be a force for good. So we partner with suppliers, customers and worldwide organizations to make a measurable difference now, and for the long run.

To increase the sustainability of our global food systems, we are also helping drive the transition to plant-based proteins to enable better health while supporting the decarbonization of food value chains.

We continue to see significant and growing interest from our customers in understanding the impact of their products, as they aim to reduce Scope 3 emissions on their own net-zero journey. We are determined to satisfy this interest through our services and value propositions.

We catalyze industry-wide change through global engagement and continuous support for customers who are navigating their own sustainability transformations, offering collaboration and guidance to support the delivery of eco-friendly products that respond to consumers' aspirations for a healthier planet.



Givaudan

Geneva, Switzerland

2023 Sales: CHF 6.9 billion

Givaudan
Human by nature



Givaudan says the results show that the company has managed to support customer growth, while also leveraging innovation capabilities to introduce new solutions. (Givaudan Switzerland Vernier location pictured)

The year 2023 was marked by the delivery of excellent performance and encouraging progress on Givaudan's 2025 ambitions, validating the company's strategic path. Givaudan says the results show that the company has managed to support customer growth, while also leveraging innovation capabilities to introduce new solutions. This further strengthens a market leadership position in chosen markets.

With the completion of the third year of the five-year strategy cycle 'Committed to Growth, with Purpose', Givaudan delivered solid topline growth on a like-for-like basis, strongly supported by pricing actions that fully compensated for increases in input costs and broader inflationary effects. Free cash flow achieved record levels thanks to improved profitability, the contribution from a performance improvement plan and reduction of inventories.

At the end of 2023, Givaudan had:

- Over 16,200 employees
- 163 locations in 51 countries
- 64 creation and research centers

With ongoing geopolitical instabilities and a macroeconomic environment of inflationary pressures and rising interest rates, the external environment remained challenging in 2023. The industry has also gone through a period of significant change, facing material destocking and shrinkflation in all major parts of the business. Remaining focused on the core strategy of growing with customers through customized, high-value-added solutions has nonetheless allowed the company to thrive in this dynamic market environment.

Images courtesy of Givaudan

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The industry leader's 2025 strategy is built on shaping the future of food, fragrances, and beauty by affirming its position as the most sought-after innovation and co-creation partner for its customers. Health and well-being, naturals and plant-based proteins—the broader global macro themes and trends that motivate the strategy—continue to drive the business and offer opportunities for more profitable growth. Customers remain at the heart of the strategy.

Business Accomplishments

Introducing to the market a number of exciting new innovations, detailed below, helped the company address the industry's changing landscape by allowing customers to differentiate their brands with consumers through customized, high-value-added solutions. Partnerships have strengthened the company's biotechnology capabilities, contributing to the sustainability journey and helping meet customers' goals. Enhanced offerings in digital technology helped Givaudan further explore the value that it adds to its business, particularly the role it can play in aiding the creation process. This, in turn, helps the company reach new customers and respond rapidly.

"The third year of Givaudan's strategy cycle featured strong financial performance, despite the challenging environment," CEO Gilles Andrier says. He cited the company's clearly defined strategic positioning and proactive steps taken to adapt to the broader environment in explaining the company's industry-leading results.

"In supporting the growth of our customers, we demonstrated our strong focus on execution," he said. "We also leveraged our innovation capabilities to introduce new solutions, which further strengthened our market leadership position in our chosen markets."

At the end of the first quarter of 2024, Andrier said that the company had had a very good start to the year, driven by strong momentum in the established business and a high level of new wins. Strong growth was achieved across all markets and segments demonstrating Givaudan's unique position in supporting the growth of its customers around the world.

"We are well on course in all areas of our 2025 strategy and remain focused on supporting the growth of our customers with innovative and differentiating solutions," Andrier said.

Sales Performance

Though the operating environment was challenging in some key markets and segments, Givaudan sustained



Gilles Andrier, CEO, Givaudan

good business momentum whilst maintaining its project pipeline, operations and global supply chain at a high level in 2023. **Full-year group sales were CHF 6,915 million**, an increase of 4.1% on a like-for-like (LFL) basis and a decrease of 2.8% in Swiss francs when compared to 2022. Good growth was achieved across product segments and geographies, with the high-growth markets growing at 10.0% on an LFL basis and the mature markets declining by 0.6% LFL. The Company implemented price increases to fully compensate for the increases in input costs in 2023.

The company further demonstrated strength in the first quarter of 2024, with a recorded sales increase of 12.6% on an LFL basis and an increase of 2.8% in Swiss francs. Strong business momentum and a healthy project pipeline showed that it can maintain operations and global supply chain at a high level in the face of increased volume demand from customers and some continuing supply chain challenges.

Sustainability: Good Progress on Non-financial Targets

The company also made good progress on its non-financial targets, which are aligned with Givaudan's purpose of 'creating happier, healthier lives with love for nature' and integrated into the 2025 strategy. Givaudan has made specific commitments to becoming climate-positive, increasing diversity, and protecting both the

people and the environment in its supply chains and says having clear, measurable targets is an important part of demonstrating their contribution to growing the business in a sustainable way. In 2023, the company was able to accelerate progress towards its longer-term ambitions in these areas.

Givaudan secured its fifth consecutive CDP double A on climate action and water security. This latest recognition makes Givaudan one of a small number of companies that achieved a double 'A' out of more than 21,000 organizations scored and also reinforced its global leadership in corporate transparency and environmental action. For the first time, Givaudan reported on forests as part of its CDP disclosure, securing an A– signaling strong progress on its efforts to address deforestation. The CDP forests questionnaire focuses on how organizations produce, source, and use four key forest risk commodities: timber, cattle products, soy, and palm oil.

The company was also recognized at this year's RE100 awards, receiving the 'Enterprising Leader' award for its renewable electricity journey. They are very close to achieving their goal of 100% renewable electricity by 2025: 94% had already been reached by the end of 2023.

"As we celebrate these achievements it is important to recognize that we must not stop here," Andrier said. "There remains much work to do and we must continue to accelerate action across all these vital topics."

Louie D'Amico, president of Taste & Wellbeing (T&W), says that during the past 12 months, the business has strengthened its position as the co-creation partner of choice for customers, with the company collaborating to develop food experiences that do good and feel good, for body, mind and planet. "Our organization around these food experiences spaces and co-creation process continue to be key components of our approach, allowing us to better address the evolving needs of both customers and consumers in a challenging business environment," D'Amico said.

Business Accomplishments

With this ambition in mind, last year's highlights included implementing an even stronger co-creation culture, leveraging and expanding digital tools and programs, and opening new locations around the world.

The company's co-creation process is tailored to the needs of each customer and project, adding greater value than either Givaudan or the customer could achieve alone. Co-creation projects carried out over the past 12 months consistently produced product launches that far exceeded expectations.

As a key part of Givaudan's co-creation offering, last year saw a strong focus on integrating and expanding digital tools and programs, allowing customers to benefit from important insights upon which they



Louie D'Amico, president, Taste & Wellbeing, Givaudan

can build tomorrow's food experiences. The company launched a new iteration of the FlavourVision[a] program, this time powered by leading consumer insight agency Canvas8. Leveraging global research, expansive data and world-renowned expertise, Givaudan identified five consumer trends that can help customers turn market disruption into opportunities in line with consumer desires.

Last year also marked the launch of the Customer Foresight futurescaping platform. The platform leverages Givaudan's human expertise, big data and AI to anticipate tomorrow's challenges, foresee consumer expectations, and create winning food experiences. Projects have confirmed the platform's utility as a co-creation tool whose potential is poised to grow as it learns through AI, allowing it to anticipate what's next a decade from now – or beyond.

Finally, no co-creation process is complete without the right facilities to share and explore new possibilities. In 2023, Givaudan opened the Tropical Food Innovation Lab in Brazil, in partnership with Bühler, Cargill, ITAL and the FoodTech Hub Latam. This innovation ecosystem fosters the development of sustainable food and beverages along with accessible and safe nutrition with a focus on Brazilian biodiversity. Addressing plant-based innovation, Givaudan launched The Food Experience Lab for Taste and Colour at Nurasa in Singapore to enable local food tech start-ups to develop regional plant-based creations and also

[a]FlavourVision is a registered trademark of Givaudan

expanded the Protein Hub at their Zurich Innovation Centre in Kemptthal, Switzerland to support the growth of dairy alternatives. Finally, to accommodate growing needs in the Middle East, they opened a new Innovation Hub in Dubai designed to accelerate regional innovation and co-creation.

Together, these initiatives and facilities allow Givaudan to add value throughout the co-creation process, ensuring market-winning products that offer the enticing food experiences consumers seek.

Influencers for Innovation

D'Amico said he sees three main influences currently driving innovation. The first is a significant downturn in venture capital investment in food tech. This means food and beverage companies are now looking for well-established partners to provide innovative solutions and help them deliver new products and experiences to their customers.

"This is exactly why Givaudan's co-creation approach has become increasingly important to our customers," D'Amico said. "As companies turn to us for innovation, we're turning up the dial on game-changing tools, programs and facilities designed to foster collaboration, provide insight into the consumer experience and anticipate trends and foresight well into the future."

The second influence, D'Amico says, is an unwavering focus on sustainability: from raw material selection to consumer purchasing behavior, sustainability has become a key factor that guides decision-making throughout the value chain. In line with the company's purpose and as part of its commitment to food systems transformation, Givaudan Taste & Wellbeing is enabling the shift to more planet-friendly diets, helping consumers achieve their well-being goals, offering more nutritious food choices, and driving responsible value chains.

The third key influence is the importance of nutrition. From news articles and warnings from health organizations to regulatory demands and consumer scrutiny, the food industry is under pressure to start delivering greater and better nutrition to food without compromising taste. Givaudan is creating relevant solutions for all product types and consumer needs, including comprehensive flavor solutions for addressing sugar reduction needs while maintaining great taste, flavor, color, texture and masking solutions for successful plant-based products, and branded botanical ingredients that deliver scientifically backed health benefits.

Looking Ahead to 2025

D'Amico says that the industry is now facing a fast-changing and fragile global environment and that amidst



Maurizio Volpi, president, Fragrance & Beauty, Givaudan

all these challenges, the company remains committed to driving innovation and ensuring that customers have exactly what they need, when they need it. Givaudan does this by closely monitoring the market and adapting strategies accordingly. Their focus on digital transformation will continue to help the company in the year ahead, as will a focus on proactively supporting customers when it comes to regulations and new legislation.

With regulators worldwide introducing new legislation to keep pace with innovation, harmonization is one of the most important considerations for industry success. Frequent changes in the regulatory landscape have an ever-increasing impact on customers' products and Givaudan's dedicated teams of scientists, toxicologists, and specialists in regulatory affairs proactively monitor these shifts in all geographical regions where they do business.

Through advocacy activities with the International Organization of the Flavor Industry (IOFI) and other industry associations, Givaudan stays informed about new or upcoming changes in legislation as early as possible. This allows the company to assess the impact on our existing portfolio and products in development. By staying ahead of regulatory changes, Givaudan can ensure compliance, minimize the impact on existing products, and enable the company and its customers to grow and protect markets globally.

"By actively participating in these industry organizations and working groups, we have the opportunity to shape regulations and standards that impact our industry," D'Amico said. "This proactive approach not

only ensures regulatory compliance but also allows us to provide valuable guidance to our customers and contribute to the overall development and growth of the industry."

Maurizio Volpi is positive about the outlook for fragrance and beauty overall, despite continuing challenges from the macro environment. The company's strengths lie in innovations that address customer needs and consumer trends, and a perfumer's palette that features the best, safest and most sustainable molecule innovation.

"We describe our fragrance and beauty business with the words passion, expertise, and flair," Volpi said. "The artistry of our perfumers addresses a myriad of scented stories for brands everywhere. Our collections of beauty innovations push industry limits by inspiring and empowering customers with tailored products that enhance their well-being."

Business Accomplishments

Excellent performance of Fine Fragrances drove this year's good growth, Volpi said, as did an acceleration in growth of volume in the Consumer Products business.

In 2023, the company introduced a number of innovative products that address a wide range of customer needs. Rosabloom[b], for instance, is a biodegradable molecule that meets the demand for a sustainable floral rosy ingredient with outstanding diffusion and bloom. Five times more performant than citronellol, it follows green chemistry principles and shows outstanding carbon efficiency. Geogaia[c] brings green, earthy and watery tonalities to fragrance in a 100% biodegradable formula while Gravityl[d], an enriched extract of Gigartina Stellata and produced according to an exclusive multi-step and eco-friendly process, is able to relaunch key processes linked to the extracellular matrix and elastic fiber protection and reorganize fibers in the dermis. ScalpSure[e], a new addition to Givaudan's Zap portfolio, allows for the creation of fragrances that effectively counteract the multifactorial issue of scalp malodor, a concern that can be exacerbated by air pollution, stress and head coverings. PrimalHyal[f] Hydra[+] is a new cationic hyaluronic acid (HA) crafted by white biotechnology. It outperforms standard HA hydration benefits by at least a factor of two, bringing instant and long-lasting moisturizing efficacy to rinse-off and leave-on applications.

Givaudan also took a significant step in advancing customer-centered digital solutions with Myrissi[g], an innovative approach that uses AI to translate scents into color patterns. This technology strengthens the company's ability to capture and predict consumers' spontaneous emotional responses to fragrances, aligning colors, emotions, and scents effectively. The Myrissi algorithm, developed over a decade of academic research in brain imagery and AI, combined with Givaudan's 35 years of neuroscience expertise, deepens understanding of consumers' emotional mechanisms. Modeled on a database of more than 25,000 consumer tests, Myrissi decodes the spontaneous olfactory connection with color, allowing Givaudan to start the creative and product development process based on either a chemical composition to predict the color code association or a chromatic base to determine the appropriately associated scent. It also generates visual mood boards and verbal ecosystems for any fragrance, supporting customers in maximizing the emotional impact of their olfactive creation, from packaging to campaign storytelling.

At the end of 2023, Givaudan had:

- A procurement spend of CHF 3.7 billion
- 2,700 raw material suppliers in more than 100 countries
- 14,400 additional global partners supplying indirect materials and services

Givaudan's perfumers worked to deliver a fragranced interpretation of love and seduction, as understood by Gen Z. Building on expertise in decoding the ongoing and future needs of consumers, the creative vision 'What is love?' is an olfactive exploration of Gen Z's love codes – unfiltered, unstaged and inclusive. It brings to life Gen Z's take on love and seduction as a result of extensive research, driven by consumer insights and monitoring of social media. This ensures the most accurate and nuanced olfactive expression of these new love codes, which prioritize inclusivity and unbridled emotion. Perfumers can now translate Gen Z's search for authenticity and caring love into never-before-smelled fragrance compositions. Such exploration in areas of potential high growth drives innovation, Volpi said.

Innovation with Care for Nature and Communities

As part of the creative process, Givaudan conducts detailed consumer research in every corner of the globe, helping perfumers understand what people love and enabling them to provide pleasure with each scent they

[b]Rosabloom is a trademark of Givaudan
[c]Geogaia is a trademark of Givaudan
[d]Gravityl is a trademark of Givaudan
[e]ScalpSure is a trademark of Givaudan
[f]PrimalHyal is a trademark of Givaudan
[g]Myrissi is a trademark of Givaudan

create. Extensive grassroots work and sharing unique insights, all while seeking optimal ways to stay on top of scientific progress, and identify imminent market shifts and product development trends.

"We are constantly looking out for emerging trends or new areas to explore, innovating and often drawing inspiration from our many artistic and cultural partnerships," Volpi said. "All brands need to know what's coming next to ensure their products resonate with consumers."

Tailored strategies for tapping into mature market opportunities and strategies for increasing care for Nature and Communities complete the approach to innovation in the company's Fragrance & Beauty business. While Givaudan's ingredients palette for fragrance mixtures is now over 85% biodegradable by volume, the company aims to reduce its impact even more by bringing additional biodegradable materials to market over time, ultimately reaching a goal of 100%. The same is true of renewable ingredients: the company wants to use renewable resources to produce all of its materials.

"When looking at the way we create, we build on a basis of sustainability with a synergistic combination of creativity and science," Volpi said. "We stay abreast of rapidly evolving consumer preferences and industry trends, and our scientific expertise allows us to push limits and establish Givaudan as a leader in the fragrance industry."

Focus Over the Next 12 Months

Looking ahead, the company is watchful of changes in the regulatory landscape that can have an impact on customers' products. Givaudan Fragrance & Beauty monitors such legislation in all geographical regions where it does business and actively engages in advocacy to learn about new or upcoming changes in legislation as early as possible. This allows the company to assess the impact on the existing portfolio but also to examine products in development, helping them to remain in compliance and minimize the impact on existing products.

A significant part of this commitment involves continued investment in the Environmental Laboratory, helping Givaudan lead advances in biodegradability testing within the sector. With almost three decades of testing experience, the Givaudan laboratory has extensive capabilities for both biodegradability and physico-chemical testing to Good Laboratory Practice (GLP) standards. This certification allows the team to conduct studies that are recognized by the OECD and essential for the worldwide registration of new molecules. The number of tests rose to more than 1200 by the end of 2023 from just 40 in 2016. The lab has supported the development of both PlanetCaps[h], the first biodegradable polymer for use in encapsulated fragrances able to meet stringent European Commission macroplastics safety regulations, and the biodegradable molecule Rosabloom.

"In a world increasingly focused on sustainability, our expertise in providing proven safe and sustainable ingredients not only positions Givaudan as a competitive force but also fosters confidence and trust among customers and consumers alike," Volpi said.

[h]PlanetCaps is a trademark of Givaduan



Iberchem SAU

Murcia, Spain

2023 Sales: €290 million



Iberchem announced a new site in China is set to be commissioned in 2025 and will feature laboratories, R&D facilities, offices, and manufacturing facilities.

After an impressive year of double-digit growth, Iberchem checks in for the Leaders & Newmakers issue to discuss other company strides, influences for innovation and current focuses.

Could you share three key company highlights with us from the last 12 months?

José Balibrea: Iberchem has achieved another year of strong double-digit growth. The global fragrance company Iberchem, its fragrance house Parfex, and its flavors division Scentium have together achieved sales exceeding €290 million for the very first time. This was an increase of 17%, or 18% in constant currencies, and above industry average growth rates, driven by our strong positioning in fast-growing markets.

At the beginning of the year, we unveiled a new creative center in Indonesia to support our strong growth momentum in the country. Located in the western area of the capital, in the Tokopedia Tower, the center features sampling and application labs as well as testing cabins for personal care and home care products. The new hub, which spans over 900 square meters, is also home to a recently expanded team of fragrance technicians and specialists, complete with its own full-time specialist perfumer.

We also announced that a new site in China is set to be commissioned in 2025 and will feature laboratories, R&D facilities, offices, and manufacturing facilities. The expansion aligns with our "Made in China for China" initiative, which is also set to facilitate exports to other countries in the region. This investment reaffirms

Images courtesy of Iberchem

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José Balibrea, managing director, Iberchem



Robert Cabal, Fragrance director, Iberchem

Iberchem's deep-rooted commitment to China. It is set to triple our current manufacturing capacity.

Other relevant expansion projects are also taking place in France (Parfex), Spain, and Dubai, with the aim of increasing our R&D and production capabilities.

As regards our flavor division Scentium, we launched the expansion of our production facility at our headquarters in Spain, which is set to increase our global supply capacity by 80%. In addition, a new lab facility for sweets and beverages was inaugurated in our R&D center, which is based at our headquarters.

What are the major influencers for innovation in 2024 leading into 2025?

Robert Cabal [RC]: Sophistication through simplicity: Applying the *less-is-more* approach in fragrances, following the *quiet beauty* megatrend. This means using fewer ingredients in formulations, but optimizing and enhancing their performance, combining efficacy and sustainability through the creative expertise of our global team of perfumers.

Wellness: Once again, wellness remains a major macro trend, moving from "storytelling" to "story-doing" through the neuroscience of fragrance with a truly proven effect on consumer mood and well-being. Under this claim, this year we have launched our first mood-lifting collection of fragrances driven by our Wavemotion program.

Technology: New tech initiatives (i.e. Vita tool) and, critically, AI will continue to improve both fragrance product development and formulation, as well as consumer feedback into our creation process.

What are your main company focuses and/or goals for the next 12 months?

RC: We will continue to grow in our core product and customer and geographical areas. We will combine this with increased efforts on our premium fine fragrances market, as well as the functional fragrances market, supported by our new technologies. Recent launches include our biodegradable odor-neutralization technology, VernovaPure[a], and our neuroscience program, Wavemotion, in which we are developing mood-enhancing fragrances across all product ranges.

We will continue to explore synergies with Croda to promote our Beauty Care Fragrances in Western and Eastern Europe. We will make use of our key success factors in emerging markets to establish relationships with third-party manufacturers in developed countries.

We will also expand our technical capabilities and platforms in fragrance release (with the microcapsules NeoCaps[b] and VernovaCaps[c]), malodor control, and neuroscience, and we will also increase our production capacity in China, Spain, Indonesia, and Colombia.

[a]VernovaPure is a registered trademark of Iberchem
[b]NeoCaps is a registered trademark of Iberchem
[c]VernovaCaps is a registered trademark of Iberchem

What are the major influencers for innovation in 2024 leading into 2025?

Jose Manuel Mateos [JMM]: Helping our industrial customers on the African continent deal with the scarcity of basic raw materials. In certain business segments, shortages, quotas, or the soaring prices of basic ingredients are affecting our customer's output. For example, in industries where cocoa or sugar are vital ingredients but not available in enough quantities to fulfill the demand. Therefore, we aim to deliver flavor systems that can help in developing cocoa- or sugar-reduced final product recipes without compromising on aroma and taste.

> "New tech initiatives and, critically, artificial intelligence will continue to improve both fragrance product development and formulation, as well as consumer feedback into our creation process."

Tackling flavor challenges in plant-based alternatives, responding to vegan trends. Technical challenges like improving the functionality and processability of butter, as well as mimicking its smell, taste, and mouthfeel, have been dealt with successfully. Today, a new generation of plant-based foods, such as meat and fish alternatives, is striving to improve its bite, texture, appearance, and consumer acceptance. As many studies reveal, perfecting taste and aroma is key to these products' success and consolidation. Our contribution to this endeavor is flavor- and masking- systems that can be adapted to different food matrixes, in collaboration with our customers.



Jose Manuel Mateos, general manager, Scentium

Intelligent flavor release in processed food. We have found out that many food manufacturers would like their products to have a full and balanced taste all the time, just like in real food. Flavors often deliver significantly more up-front impact than is experienced in, for instance, a piece of fruit, chocolate, or cheese. Processed food with too much up-front impact may impact your taste buds but not your mind. In response, we are working together with some of our customers and partners on intelligent flavor release systems that mimic the full "rich" flavor experience that comes with naturally grown or home-prepared food.

What are your main company focuses and/or goals for the next 12 months?

JMM: We will continue to grow in our core product areas and increase customers in strategic countries. We will consolidate our presence in South Africa through our Johannesburg facility. And, last but not least, we will increase our flavor market share in China through our local facility and strengthen our commercial operations in Colombia and Mexico.

Operationally, we are completing our new lab facility for the sweet, savory, and beverages sectors, and also the expansion of our new production plant, both of them in Alhama de Murcia (our headquarters). We will also make major investments in the savory sector by increasing our R&D, application, and sales workforce.

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IFF

New York, New York
2023 Sales: $11.5 billion

IFF returns to the Leaders & Newsmakers issue for 2024 with segment leaders to highlight strides in various markets and influencers for innovation. The company also doubles down on its commitment to a sustainable future and shares forward-looking goals.

ERIK FYRWALD, CEO

As a chemical engineer, I've always been drawn to companies that leverage science and creativity for a better world. That's why, when I joined IFF as CEO in February, I was already an admirer of the Company's rich history, reputation as an innovative powerhouse, and commitment to sustainability. I believe in the power of the natural sciences to create sustainable solutions, and I'm proud to lead a company that shares this vision.

Since taking on the role of CEO, I've made it a priority to immerse myself in our operations and connect with our employees and customers in every region. This hands-on approach has deepened my admiration for this company and our work. I've witnessed firsthand the passion and dedication that drives our innovation and sustainability efforts, and it's truly inspiring.

Customers are Our Focus

Our commitment to sustainability is not just a buzzword; it's a core part of our business strategy. Led by our robust innovation platform and research and development pipeline, we deeply value our customer partnerships. We are committed to helping them achieve their ESG goals and sustainability targets. This includes striving for all new IFF innovations to have a sustainability value proposition supportive of people and planet by 2030. As of 2023, a significant percentage of our new projects already meet that criterion, as affirmed by our proprietary Innovation for Sustainability model. Today, R&D is embedded within our business units, further bolstering the intimate connection between our pipeline and the needs of our customers. We also have a 2030 goal to enable customers to save 50 times more CO_2e than generated at our manufacturing sites. We are working toward this through the delivery of our products, which often lower environmental impacts through their performance during the use phase, demonstrating our commitment to sustainability throughout the product lifecycle.



IFF CEO Erik Frywalk shares, "Our commitment to sustainability is not just a buzzword; it's a core part of our business strategy."

Innovation is in Our DNA

Being an innovation powerhouse means constantly reassessing and continually evolving our approach. We strive to protect the environment and safeguard human health, from responsibly sourcing and using our input materials more efficiently to promoting circularity and reducing upstream and downstream impacts.

We can positively influence sustainability across the entire value chain by leveraging our unique combination of partnerships, technologies, and capabilities. Beginning at the source, we strive to promote

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Erik Fyrwald, CEO, IFF

regenerative ecosystems and equitably support our workers and grower communities by conducting rigorous human rights risk assessments in our strategic supply chains. We also work with various stakeholders and local communities to responsibly harvest seaweed in support of marine conservation—a commitment we've been involved in for more than 60 years—which was recently underscored by a new partnership to restore seaweed forests in northern Norway.

At the product level, we actively listen to our customers and work to win along with them. For example:

- Through programs such as Re-Imagine Waste, we create new upcycled concepts, launch certified upcycled products, and strive to prevent waste through new food protection innovations. The 2023 launch of NOVAGARD NN 1-10, a naturally occurring antimicrobial and antifungal blend, offers a cost-effective alternative to synthetic preservatives while potentially extending product shelf life and enabling less frequent product distribution, resulting in a lower carbon footprint related to transportation.
- Our proprietary Designed Enzymatic Biomaterials[a] (DEB) technology is a revelation that uses advanced biotechnology to create a new-to-the-world class of biobased polysaccharides that enable more sustainable products without compromising performance. We celebrated the launch of the first personal care ingredient enabled by DEB in 2023 with AURIST[b] AGC – a water-soluble, readily biodegradable conditioning biopolymer comprised of natural and nature-inspired ingredients to deliver various applications.

We Drive Operational Excellence for People & Planet

Together, we are continually progressing for more and better, including our commitment to diversity and gender parity. One of our recent DEI recognitions includes being named the top U.S. Company for gender equality and tenth globally by Equileap. We are proud to have already closed our overall mean, unadjusted gender pay gap, and we continue to work toward gender balance across our workforce. This extends to a focus on gender representation in our succession planning and the incorporation of diversity considerations in recruiting.

Another way we ensure the well-being of our people is to continuously improve our safety program and strive to achieve an incident-free workplace. We made good progress this year, with a decrease in our total recordable incident rate for the second year in a row against our 2021 baseline.

As we look to further our commitment to climate and planetary health, we focus on lightening our footprint across our manufacturing operations. We also lead on urgent climate action and aspire towards our science-based target of reducing our absolute direct and indirect GHG emissions by 50% below 2021 levels by 2030.

We also continued to advance toward reaching Zero Waste to Landfill (ZWL) status at all our major manufacturing plants worldwide. When I started earlier this year, I had the pleasure to visit some of these sites that achieved internal ZWL verification last year, adding to our growing list of ZWL-verified locations around the world.

I am excited to support employees as they push our boundaries daily to achieve our ambitious goals and advance our innovation pipeline to best serve our customers' needs. In 2024, we will continue capitalizing on our investment in bioscience and unparalleled scale-up capacity to accelerate the shift to climate-neutral, more sustainable solutions. To achieve these goals, we collaborate and connect with our suppliers, partners, customers, and other valued stakeholders to ensure we progress annually and prepare for the future. Here's to achieving more together in 2024!

[a]Designed Enzymatic Biomaterials is a trademark of IFF

[b]AURIST is a trademark of IFF

YUVRAJ ARORA, president, Nourish

What are your leading focuses and goals for the next 12 months?

Yuvraj Arora [YA]: We're always striving to nourish people, products, and the planet. As stated in our Do More Good Plan, our environmental, social, governance, *plus* Sustainable Solutions (or ESG+) roadmap, we have a 2030 goal for all new innovations to have a sustainability value proposition that supports people and planet. This includes advancements such as health and wellbeing products, solutions for sustainable food systems, and circular economy strategies. We'll continue to build on our progress in reducing food waste and upcycling, lowering carbon footprints, practicing sustainable growing and production, and more.

We'll grow our modulation capabilities to meet consumer demands for healthier products that still taste indulgent. These capabilities help customers develop delicious recipes with lower sugar, salt, and/or fat and mask off-notes. We're also addressing mental well-being as we continue to work on unique flavors that support mood management.

In addition to showcasing new and exciting tastes, textures, and experiences, we create solutions that benefit all. As the cost of living increases, we're innovating for consumers by developing flavors with cost-effective tools and working to extend shelf life and stability—supporting our sustainability goals.

Can you share three key company highlights for the last 12 months?

YA: In 2023-24, we expanded and enhanced several of our flavor creation labs around the globe and opened two new co-creation centers in South Korea and the Netherlands. This spring, we also celebrated the completion of our state-of-the-art Citrus Innovation Center, resulting from an exciting partnership with Florida Polytechnic University. We're fostering a transformative holistic citrus development ecosystem that supports global citrus research and development.

The center will help us co-create with the university, customers, and partners and develop breakthrough citrus solutions for the Food & Beverage and Scent industries. In addition, we'll be able to more effectively leverage our citrus insights and solutions, like IFF NEO[c], our natural flavor collection entirely free of citrus-derived molecules, fractions, and oils.

We've made significant advancements in taste modulation. This year, we've introduced a range of



Yuvraj Arora, president, Nourish, IFF

new taste modulation technologies that empower our flavorists to further refine sugar reduction and mask off notes. Modulation was also key to creating CREMODAN[d] GREENPRO 101—launched in 2023—which can lower recipe costs by up to 25% and the carbon footprint of ingredients used in ice cream by up to 30% by helping manufacturers reduce the milk solids and fat content of ice cream without impacting its perceived indulgent quality.

In addition, we continue to nourish people through our longstanding relationship with Jon Bon Jovi Soul Kitchen, community restaurants in New Jersey that serve those in need. We volunteered our services to create a Soul Seasonings line; recently, Bon Jovi himself announced the release of new seasonings we worked on.

What are the major influencers for innovation in 2024 leading into 2025?

YA: With Panoptic—our proprietary trend intelligence approach—we've identified several trends or "Lifestyle Movements" that significantly impact how people live and consume:

- **Affordability: Simple Frugality**: Consumers are reevaluating their priorities, making more thoughtful choices, seeking products with values that align with theirs, using fewer resources, and spending less money. Because of this, purpose-driven products, discounts and perks, and private-label options are increasing in popularity.

[c]NEO is a trademark of IFF

[d]CREMODAN is a registered trademark of IFF

- **Health: Better Being and Sustainability: Responsible Living**: There's an ever-increasing focus on self-care, mental well-being, natural healing, moral and social responsibility, and eco-consciousness. This means companies need to provide products that are better for people and the planet, emphasizing nutrition, carbon footprint reduction, and upcycling.
- **Experience: Neo-Hedonism**: Consumers are looking for new ways to enjoy life, and companies can meet this need with innovative, sensorial taste experiences and unexpected flavors. This trend is relevant for many categories where consumers seek unique products that engage the senses—like ice cream and dairy desserts, beverages, salty snacks, and bakeries.
- **AI Digital: AI Human**: AI technologies, while enhancing personalization and speed, need validation and proof of improvement. They serve as catalysts in the food and beverage sectors, augmenting human skills and connections. We deploy Generative AI and Deep Learning models at IFF to increase our best-in-class domain expertise. We're developing an AI-based decision support tool to better and more quickly identify new pathways to upcycle food side streams—one of the many examples of our dedication to innovation, sustainability, and efficiency.

ANA PAULA MENDONÇA, president, Scent

Can you share three key company highlights for the last 12 months?

Ana Paula Mendonça [APM]: IFF strives to reduce the environmental impact of our ingredients, fragrances, and portfolio. The complexity of fragrance design requires dynamic IT systems to manage and track improvements regarding the environmental impact of our ingredients. IFF has incorporated tools to transform bills of materials to life cycle data and connect this to business data to enable in-depth analysis of fragrances and customer metal formulas. IFF has also incorporated this LCA data into our perfumers' design tool. With this life cycle data at their fingertips, IFF perfumers can add mindful design to their toolbox as they continue to develop superior fragrances while meeting customer sustainability needs and targets.

LMR Renewable Extracts Collection comprises five absolutes obtained with 100% bio-sourced and biodegradable solvents, with many more currently in development. As a responsible fragrance ingredient manufacturer, these renewable absolutes offer a re-interpretation of classic absolutes known for decades. What is new? They reveal the hidden olfactory facets of the extracted flowers that can now be exploited in fragrance creation. While the main objective of this collection is to reduce environmental impact, we are finding new applications, such as cosmetics, where these new absolutes provide advantageous benefits over conventional absolutes. This will offer a bright future for these new sustainable ingredients.



Ana Paula Mendonça, president, Scent, IFF

In 2023, as part of our efforts to lead the regenerative agenda, we invested in the expansion of our biodegradation testing facility to accelerate the development of biodegradable Scent Solutions, delivering best-in-class fragrances while meeting the Scent business unit's ambition and our customers' ESG goals. With this new capability, our Ingredients Synthesis Team targets intrinsically biodegradable molecules in parallel with the desired hedonics and performance. The output of our internal testing will, over time, improve the existing predictive models, allowing Scent molecules to be confidently assessed for their biodegradation even before being synthesized. Ultimately, this will result in a Scent Creative Catalogue that includes the next generation of biodegradable linear, high-volume specialty ingredients that enable creative differentiation.

IFF EcoCaps is our first-to-market responsibly designed scent delivery system designed first for fabric softener and powder detergent applications, which offers:

- A broader olfactive freedom to deliver consumers new scent experiences.
- A better cost-in-use performance across washing stages, from wet to dry laundry.
- Significantly improved sustainability credentials fostering positive impact.

In April this year, Puig launched a Charlotte Tilbury fragrance collection that unlocks the full power of the IFF Science of Wellness, including 40 years of research leveraging IFF neurosciences and AI.

What are your main company focuses and/or goals for the next 12 months?

APM: We will continue to expand our presence in targeted growth regions. This will be demonstrated by the opening of state-of-the-art Scent creative centers in Shanghai and Dubai later this year.

We continue to invest in the talents of tomorrow through the IFF Shiftan perfumery school and our joint perfumery school program with ISIPCA. This allows us to train perfumers, scent designer managers, and scent experts, increasing diversity and serving all regions.

Aligned with our customer needs, we will continue to drive product superiority with our key Innovation platforms, such as:

- Novel sustainable ingredients and delivery systems,
- Modulation leveraging new biotech capabilities,
- Novel natural ingredients by our LMR team,
- Health & wellness solutions, i.e., successful METASLEEP[e] product range
- And the acceleration of our digital capabilities

Finally, our ambition is to continue our above-market growth.

What are the major influencers for innovation in 2024 leading into 2025?

APM: We use our internal Panoptic trend research tool to drive innovation. Here are three select trends identified as being major influencers for IFF innovation:

- **Better-Being:** People are adopting a pragmatic approach to health, focusing on more innovative ways to optimize their health and enhance how they look and feel. They seek more practical and natural options that deliver instant enhancements and proven results, shifting away from time-consuming, complex, expensive, or exclusionary solutions. They are increasingly relying on the latest scientific and technological advancements to achieve their desired outcomes, and AI is changing the game by making personalized health and wellness affordable. Health and well-being are integrated with every aspect of their lives and interconnected with their world. Living longer is no longer enough; people also want to live better. The increasing focus on being healthy as we age drives the demand for offerings tailored to an older population, more tech-savvy and affluent, who want to enjoy a more active and independent life. The IFF Science of Wellness program and our internally developed AI tool, CODEX, allow us to respond to this growing trend.
- **Responsible Living:** Alarmed by the disastrous consequences of the climate crisis, people are increasingly committing more to the planet and investing more time and money to find new ways to live sustainably and create a regenerative future. Eco-ethical values are now paramount: it is about becoming responsible citizens of the world for the planet and the people living on it. While information is increasingly questioned, people seek greater transparency, honesty, and trusted sources for products, solutions, and responses to political, moral, social, environmental, health, and safety issues. IFF is deeply committed to delivering on these expectations, with the ambitious catalog transformation program mentioned above and human rights and social impact commitments.
- **Neo-Hedonism:** Consumers are expanding their definition of hedonism, seeking new and innovative ways to experience pleasure, infusing the every day with joy and sensorial delights. They want surprise, mystery, awe, and wonder, making new experiences that engage a broad spectrum of feelings and emotions. While financial challenges remain, they are self-gifting with creative, affordable treats, accessible pleasures, and new forms of indulgence where they seek meaningful and healthy experiences rather than excess and extravagance. They are cherishing new, simple, daily practices and pampering rituals that help them rejoice and counteract their lingering anxiety and unhappiness. With an expanded Science of Wellness program, which looks at understanding the connections between scent and the senses (colors, and now sound thanks to a unique partnership with IRCAM Amplify sound research startup), IFF is providing perfumers with new tools to cater to the quest for neo-hedonism. The IFF La Fabrica program also gives perfumers around the world a platform for creation in collaboration with world-leading artists such as Kong Jeu A at the Korean Biennale Pavilion with Odorama Cities, featuring ten IFF perfumers from around the world; Dominique Ropion and Vacheron Constantin and art director Yiqing Yin; Nicole Mershon and artist Delcy Morelos with Cielo terrenal and El Abrazo at New York Dia Foundation and more, providing a playground for increased olfactive expressions.

[e]METASLEEP is a trademark of IFF

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Kerry Group

Kerry, Ireland

2023 sales: €8,020 million



John Savage shares, "We see exciting growth opportunities across a wide number of global markets, and we will be placing a particular emphasis on opportunities in the Asia Pacific, Latin America, Middle East and African regions."

CEOs Edmond Scanlon and John Savage (Taste) join the Leaders & Newsmaker issue to discuss the company's key strides over the last 12 months, artificial intelligence's impact on innovation, and the main company focuses for the months ahead.

Can you share three key company highlights for the last 12 months?

Edmond Scanlon [ES]: The past 12 months have seen a number of milestones for Kerry Group. From the perspective of our taste business, we have seen significant investment, new product launches in key areas, and important third-party recognition of our sustainability credentials.

June 2023 saw the opening of a new taste production facility in Karawang, Indonesia. This investment is emblematic of our strategy to bring our capabilities closer to the markets we are serving, particularly in high-growth regions globally.

Indonesia, and South East Asia more generally, is such an exciting market, and it is wonderful to be extending our presence there. We are seeing such a rapid pace of consumer-product innovation in those markets – they are hugely dynamic and are providing great opportunities for new product launches and product development.

Stepping back and taking a more global view, we are seeing some important trends gaining momentum; specifically those with a general consumer health lens, and salt reduction in particular. We are seeing greater cut-through in the message that we need to do much more with regard to sodium reduction in our foods and beverages. Despite the significant strides that have been made in this regard in a number of markets over the past few years, globally, we are still consuming twice as much salt as should be in our diets day-to-day, and this excess consumption is driving millions of excess deaths a year, according to the WHO. I'm proud to say that the scientific experts at Kerry have developed an excellent range

Images courtesy of Kerry Group

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Edmond Scanlon, CEO, Taste, Kerry



John Savage, CEO, Taste, Kerry

of tools to help address this challenge, and these have been added to this year by an extension in our portfolio to include Tastesense[a] Salt; the next generation of our sodium reduction technologies, that have the capability to reduce salt levels in key food categories by as much as 50%, while still retaining excellent taste and functionality. This could be a game-changing product for many categories and is one of a number of product areas that Kerry is working on to support healthier product formulation.

Sustainable nutrition is at the heart of what we do as an organization, whether that is in taste, or across our wider portfolio. Sustainable nutrition focuses on a full spectrum of considerations, encompassing dietary and environmental sustainability issues. We have been working hard to advance our objective of reaching 2 billion people with sustainable nutrition solutions by 2030, and I am committed to realizing that objective. It has been gratifying, over the last year to see our sustainable nutrition reach grow to positively impact over 1.25 billion people around the world last year. In addition to this, our wider sustainability efforts have seen third party recognition, via the World Benchmarking Association, which placed our sustainability performance amongst the top 10 of the most influential companies in the food and beverage sector globally in 2023, and via the *Financial Times*, which has recognized Kerry to be amongst 'Europe's Climate Leaders' in their special 2024 report on that topic, for the positive steps we have taken to reduce emissions, relative to revenue. These are positive public recognitions of progress we have been making on our sustainability journey, which reflects the passion and commitment of our team.

[a]Tastesense is a trademark of Kerry

What are the major influencers for innovation in 2024 leading into 2025?

John Savage [JS]: You could potentially summarize the major innovation influencers across three categories: consumer trends, health requirements and industry needs.

As always, the changing patterns of consumer taste and trends continue to drive exciting and interesting product innovations. Kerry's Taste Charts look to map these developing trends each year, giving a global and regional picture of what is happening, and providing comparability on evolving patterns from one year to the next. One of the most interesting trends I have noted, and which is covered in the taste charts, relates to the continued fusion and exchange between global cuisines. Filipino and Peruvian dishes and flavors, for example, are rising to global prominence, and fusing with other culinary traditions to provide interesting inspirations. Staying on top of the constantly evolving trends in consumer tastes is no doubt one of the most interesting aspects of the industry, and innovating in this space is something we really enjoy at Kerry.

Alongside the more transitory trends in taste, we are seeing the strengthening of a more permanent dynamic driving innovation, and that is the healthfulness of formulations. The industry has been on a long path to reduce sugar, salt, and fat levels in products, and to remove other unwanted ingredients, and this will only grow in importance. Significant progress has been made in this area in many cases, at country and category levels, and in some areas, we have reached a point where big reductions have been made but further, and more difficult to achieve reductions are still required. Kerry are significantly engaged in this area, and has a very strong portfolio and capability offering in place to address customer needs. We recently launched Tastesense™ Salt. By leveraging our fermentation, extraction and cooking expertise, we developed a toolbox of solutions that deliver on salt and umami taste while significantly reducing the amount of sodium in a product.

> “As always, the changing patterns of consumer taste and trends continue to drive exciting and interesting product innovations.”

Beyond consumer trends, and health requirements, there is another major factor driving innovation in the current market – and one which we have seen in many guises before, relating to shortages in essential taste commodities. Cocoa and orange are both experiencing shortages globally, with a particular crunch being faced in the case of cocoa. Crucial supplies from West Africa have been severely hit, with prices soaring as a result. A resolution to the issue appears to be a long way off.

Brands are of course being forced to look at formulation options that will get the very most out of the reduced and costly supplies of material available in the market. Kerry have been working with customers to address these needs and have a suite of products available which seek to maximize cocoa taste experience while enabling reduced reliance on the commodity in an overall recipe. Achieving this has been a challenge, but we, and our customers, have been very happy with the results achieved. More generally, we can see that product shortages, in various areas, often driven by environmental pressures and climate change, will continue to be a pressing feature driving the need for innovation in the years ahead, with the need for more long-term, sustainability-focused initiatives to mitigate environmental conditions becoming ever more evident.

Another important area in innovation is artificial intelligence (AI), this has an increasingly important influence on how we work and innovate in Taste. We are very excited about the potential AI has for our business in 2024 and beyond.

What are your main company focuses and/or goals for the next 12 months?

JS: From a Taste business perspective, over the next 12 months, we will continue to pursue our growth strategy, and extend our reach in sustainable nutrition.

We see exciting growth opportunities across a wide number of global markets, and we will be placing a particular emphasis on opportunities in the Asia Pacific, Latin America, Middle East and African regions.

Healthfulness of product formulations will remain a top priority for many, so we envisage significant, ongoing work on this agenda with customers, alongside product innovations to address evolving consumer trends.

Within this, enabled by our strong vertical integration across several key areas we will be assisting customers in managing cost-related issues in the supply chain. Shortages in supply of specific commodities, as referenced above, will continue to drive the need for cost-optimized solutions in certain taste profiles, even if the more general inflationary pressures we have seen in the supply chain over the past number of years continue to subside. Affordability will remain a very key issue for consumers around the world, and one which food producers will necessarily be keeping front of mind.

As always, we’ll continue to evolve our broad portfolio to keep up with consumer and market trends, with a number of new product launches forthcoming in areas such as savory taste, and within our range of natural botanical extracts – both of which offerings will enable compelling consumer product innovations.

The next 12 months will be an exciting year, characterized by investment, growth and innovation.

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Mane

Le Bar-sur-Loup, France
2023 Sales: €1.770 billion





"With a view to continuing our growth and meeting the 2026 targets set by the Group, always keeping in mind our determination to serve our customers extremely well, we have once again continued to invest this year," said Jean Mane.

During a year of economic challenges globally, the Mane's Group delivered solid growth, demonstrating its focus on leveraging innovation capabilities, pursuing its sustainability-challenging targets, and continuing to invest 10% of its revenue to further strengthen its market leadership in targeted local and international markets.

Business Accomplishments

Full-year 2023 sales were €1.770 billion ($1.915 billion), an increase of 4.2% compared to 2022. "We are very pleased with our 2023 performance demonstrating our ability to support the growth of our customers. I am extremely proud and grateful to all Mane collaborators around the world for their continued commitment, and for their good results in a challenging economic environment" Jean Mane, president and CEO of Mane, said.

There have been some fine achievements, in particular Mane Indonesia, and Mane Mexico whose sales exceeded significant thresholds. LATAM flavors recorded solid results and continue to grow at a rapid pace. New clients solidly implanted in the region spurred growth, particularly in the key markets of Mexico, Brazil, and Argentina. Global and emerging businesses in both Sweet and Savoury segments also showed solid growth over the prior year.

Flavors showed solid growth across Europe, too. The Maghreb and the Middle East produced excellent results. All our teams worked hard to maintain and develop our customers' business. Key clients performed extraordinarily well, with strong growth in product ranges.

In North America, flavors were able to capture growth over the prior year, despite a challenging market as our customers focused on driving efficiency throughout their supply chain. Changes in demand

Images courtesy of Mane

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patterns to pre-COVID levels and productivity pressures to curb consumer inflation were the norm. In this context, the business still grew both top and bottom line. Our broad portfolio of flavor, seasoning, herbs & spices, preservation systems and color serves the Snack market particularly well, as this category continues to grow double digits. Dairy also outperformed the prior year as we continue to lead with differentiated vanilla solutions. Mid-market customers, especially in the functional nutrition and snacks segments, continue to drive speed of launch. Working jointly with clients continues to drive advantage and has helped them to accelerate launches of winning products. Mane encapsulation technologies and delivery systems enhancing unique consumer experiences, such as flavor change or morphing, continue to gain market traction.

Fine Fragrance also reported excellent results, with another year of double-digit growth in Europe, major market launches for several of our long-standing customers, and significant wins for new global and regional customers. Finally, for Fragrance Consumer Goods in EMEA, all sales offices and categories reported growth, with good overall performances. The home care segment performed particularly well, with strong consumer demand for home fragrances and candles. In this market segment, consumers are looking for premium fragrances and beautiful olfactory signatures. The quality of our raw materials and the unlimited creativity of our perfumers enable us to respond effectively to this trend.

Investing in Growth Markets

"With a view to continuing our growth and meeting the 2026 targets set by the Group, always keeping in mind our determination to serve our customers extremely well, we have once again continued to invest this year," said Jean Mane.

"In June this year, I was delighted to inaugurate our brand-new Pinghu plant in China. This new site will



Jean Mane, president and CEO, Mane

enable us to give a major boost to the development of the flavors market in China and neighboring countries. In India, we have opened this year the second KANCOR site in Byadgi, Karnataka, which will allow us to quadruple our spice extraction capacities, with continuous extraction technologies and a supercritical CO2 extraction unit. This brand-new production site will also enable Mane Group to strengthen its activities in the natural colorants and antioxidants sectors, among others," Jean Mane continued.

On the African continent, the Group pursued its investments this year, with the inauguration of a new Fragrance Creative Centre in Abidjan, Ivory Coast, as well as new premises and flavor application laboratories in Accra, Ghana.

Finally, in the United States, Mane just celebrated the expansion of its new Wayne site, which will enable it to





The innovation center at Mane headquarters centralizes several structures such as scientific documentation, a laboratory for new technologies, pilot lines, a test platform for new processes, an extraction workshop, and laboratories to further research on encapsulation and extrusion.

triple the production of fragrance compositions starting in 2024. Good progress on the new liquid flavor production unit at Woodlawn has also been made, with the full commissioning occurring before year-end.

In Paris, the building that will house the future Fine Fragrance Creative Centre has been delivered, and the teams will move to this new facility in a near future. After Barcelona, Dubai, Shanghai, and Milano, this new space will be one more milestone in our investments in Fine Fragrance, enhancing creativity, strengthening our ability to understand consumer needs, and reinforcing our Consumer Insight expertise. We will bring our perfumers a unique place to express their creativity and multiply our co-creation projects with our customers, offering them a place for exchange and infinite fragrance innovation.

In Le Bar-sur-Loup, the headquarters, the CIS (Center Innovation Sarrée) is now fully operational. This innovation center centralizes several structures such as scientific documentation, a laboratory for new technologies, pilot lines, a test platform for new processes, an extraction workshop, and laboratories to further research on encapsulation and extrusion. At the Perfumery Centre of Research, the Group has strengthened its Consumer Insights and Sensory Analysis expertise, with a new dedicated area and the latest generation equipment. This investment reinforces our deep insights into consumers' needs and will guide our creative teams to envision tomorrow's fragrances.

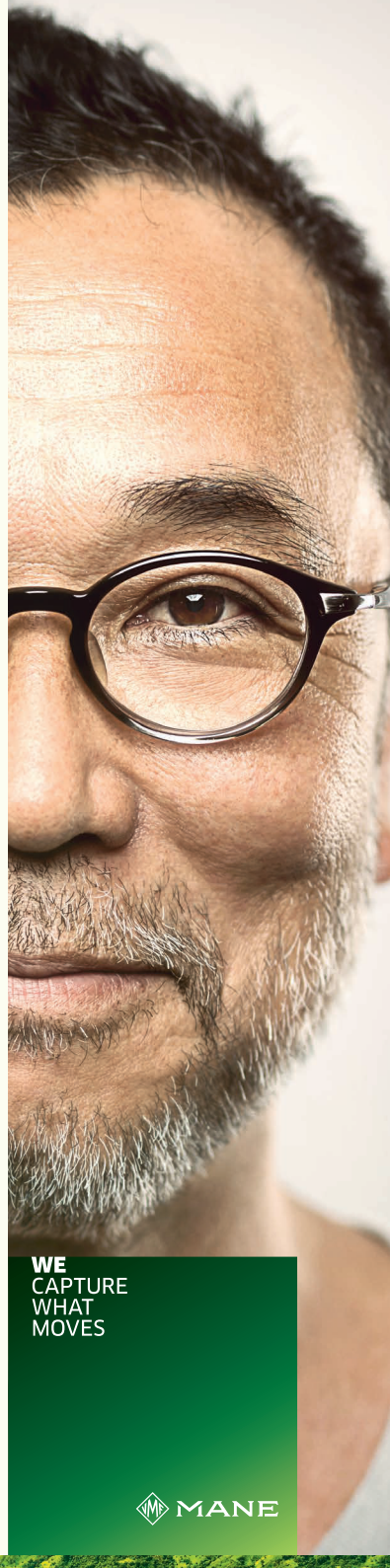
Finally, to meet the ever-increasing demands of our customers and remain competitive in the marketplace, the Group has launched new programs to implement new IT and Artificial Intelligence systems that will have a positive impact on workflows and operational efficiency.

Sustainable and Ethical Value Chain

Mane is pursuing its CSR initiatives, committed to operating the most sustainable and ethical value chain. For the third time in a row, CSR actions have been awarded the Ecovadis Platinum rating medal, the highest accolade. Mane Group also achieved a significant improvement in its CDP ratings (A Climate; A- Water; B Forest), and it is maintaining its efforts, with ambitious climate objectives by 2030.



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CAPTURE
WHAT
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To reinforce our commitment to the climate, we also became a member of RE100 initiative, joining more than 400 companies worldwide committed to achieve 100% renewable electricity consumption by 2030. At the same time, we reaffirmed our commitment to ethical and responsible conduct by reissuing our Code of Ethics and rolling out related training in all our subsidiaries. In 2023, the hottest year on record, we have voluntarily turned many of our environmental actions to engage our employees and raise their awareness of the need to significantly reduce our carbon footprint (conference by Dr. Jean Jouzel, deployment of the "Fresque du Climat").

In India, Mane Kancor was recognized by the YMCA (Young Men's Christian Association) in 2023 for the company's active engagement in various Corporate Social Responsibility (CSR) initiatives, which encompass various fields such as women empowerment, education, infrastructure development, and healthcare. Mane Kancor has also secured the prestigious "Commitment Bade" in the Ecovadis sustainability assessment in recognition of the company's commitment to sustainability initiatives. "And I am proud to say that Mane Kancor has won the Kerala State Ministry of Industries award for the best-performing enterprise in exports" added Jean Mane.

Finally, the Group joined the Climate Fund for Nature, an initiative by Mirova, a sustainable investment firm, to support high-quality projects dedicated to nature protection and restoration. Mane has joined forces with the fund initiated by KERING and the L'OCCITANE Group to provide long-term financing for projects, confirming a growing interest from major corporations in investing in nature-based solutions, in addition to our decarbonization trajectories.

Major Influencers for Innovation

Health and wellness continue to be a major influencer in driving flavor innovation. Further, in 2023, productivity savings, increased taste impact and modulation, and unique trigeminal sensorial consumer experience continue to push innovation demands in this market. Many product categories are impacted and engaged in innovative solutions: cost pressure on cocoa and vanilla, demand for impactful naturals in Beverage, Dairy, Confection and Savory, replacement of juices, and masking of nutritional components such as protein in all segments. As consumers seek natural "good for you" labels, combined with great taste at reasonable prices, these challenges will continue to drive innovation. Mane technologies serve these needs exceptionally well. Our consumer insights team continues to explore the



Jean Mane shared, "To reinforce our commitment to the climate, we also became a member of RE100 initiative, joining more than 400 companies worldwide committed to achieve 100% renewable electricity consumption by 2030."



LATAM flavors recorded solid results and continue to grow at a rapid pace. New clients solidly implanted in the region spurred growth, particularly in the key markets of Mexico, Brazil, and Argentina.

preferences of Gen-Z consumers and has focused specifically on protein consumption as well as their consistent craving for coffee, hydration, and recovery.

We are committed to developing flavors solutions helping consumers optimise their diet with healthier food without sacrificing taste. Our taste modulation experts have implemented a precision program named Sense Capture[a] Precision Taste Modulation to achieve the optimal taste experience that consumers expect. This cutting-edge and unique approach combines aromatic intelligence with product knowledge based on advanced analytical technologies and sensory methodologies, in-house and external expertise: from salt reduction to sugar reduction, fat replacement, or plant-based transition, we address all aspects of the taste for even the most complex food product or drink, enhancing the expected perceptions and reducing the undesired dimensions of taste.

[a]Sense Capture is a trademark of Mane

Scents that Go Beyond Smelling Good

Fragrances have always been recognized to convey emotions, and the demand for emotional fragrances is strong. Mane's Wellmotion[b] program brings together consumer insights, scientific research and perfumers 'creation expertise to overcome this challenge. We have set up a specific consortium to pool together expertise with the final objective of being able to certify the emotional impact of our fragrances.

In terms of creation, we see a continuous demand for signature and quality in a highly educated market of connoisseurs. The market is in demand for very mischievous floral notes. In this context, our expertise E-pure Jungle Essence[c], illustrates the re-birth of enfleurage combining a first step of enfleurage in oil and a second step of supercritical CO_2 extraction is a green alternative to absolutes which captures the

[b]Wellmotion is a trademark of Mane

[c]Jungle Essence is a trademark of Mane

signature scent of fresh flowers. It opens up new and unparalleled creative possibilities.

The success of fruity and gourmand notes is undeniable. Mane Jungle Essence portfolio offers a wide range of fruity and gourmand notes, enabling our perfumers to demonstrate their infinite creativity.

Ingredients are Key Drivers of Innovation

In India our Mane Kancor research and innovation focus on developing innovative products that address sustainable solutions in multiple categories, including cosmetics, solutions for extended shelf life, natural colors, nutraceuticals, and ingredients for taste and aroma. The innovative initiatives were in line with the long-term goals of improving carbon neutrality, and more exploration of nature and ethnicity with traceable backward integrations.

Mane Kancor's ingredient solution Rosehip Extract is recognised as one of the top three most innovative Ingredients at Fi India 2023 showcasing an increasing palette with innovative offerings.

We are in the process of developing a color ingredient spectral area that consists of the colors red, blue, and yellow with a variety of green chlorophyll solutions with competitive-quality edges. An additional field of endeavor involves the continuous development of diverse cosmetic products, such as those designed to eliminate body odor, prevent acne, and lighten skin tone. Our natural antidandruff solutions were recently granted a patent in the United States.

Created in 2011, Green Motion[d] is more relevant than ever! This online tool assesses the environmental impact of aromatic ingredients, fragrances, and flavors. Many of our customers have been using it for their eco-friendly briefs, designing more responsible products. A new article published in the scientific International Journal of Green Chemistry establishes the existence of a correlation between greenhouse gas (GHG) emissions calculated with a full Life Cycle Assessment and the Green Motion score using a clustering approach to the 12 principles of green chemistry. The comparative analysis clearly demonstrates that by improving the Green Motion score of our fragrances and flavors, we can help directly reduce the GHG emissions of our products.

Forward Thinking: Company Focuses & Goals

"Mane's key objectives are set for the long term: continuing to grow and transmit, while staying fully independent and a family-owned company".

Climate strategy is a top priority for the Mane Group, and the need for climate action has never been more dire. We will pursue our ambitious near-term decarbonization targets. We are in it for the long haul, carefully setting in motion today the actions that will help us ensure a lasting and better future.

In an increasingly complex and volatile world, and in order to meet our customers' growing demand for rapid response to their needs, the company has embarked on a process of digitalization. This will enable us to deploy tools that will not only improve our service to customers but also optimize our operational efficiency. At the same time, we will strengthen our use of Artificial Intelligence to support formulation processes, mass document analysis or consumer data processing, accelerating our ability to respond to market needs. Finally, we will also help to develop the digital culture within our company through communication and training tools, essential pillars to adapt successfully and with agility to a constantly changing world.

The immediate focus for the next 12 months is also on functional ingredients in natural antioxidants, natural color blends, cosmetic ingredients, and nutraceutical ingredients. We will concentrate on growing regions in Asia with focus on India, China and Indonesia. We will also initiate newer initiatives on sustainability across various crops around several growing regions around the world. We will also have shelf-life solutions for antimicrobial sectors and synergistic solutions for a variety of category applications. Our emerging developments in nutraceuticals will focus on the domains of animal health, mental health, and digestive health.

Flavors will continue to focus on the continuing demand for health and wellness, especially in the area of functional nutrition. The desire for natural, clean ingredients remains strong. Mane's patented capsule technology is also being leveraged further in new segments for novel delivery and consumer experience in confection, nutrition and breath freshening. We also continue to build our manufacturing capacities to best serve our customers. In 2024 North America will open expansions for savory reaction flavors, as well as a new $100 Million investment in liquid flavor manufacturing slated to be customer-ready by Q4 of this year. For LATAM, in line with Mane's customer-centric approach, Mane Mexico has opened new modern offices in the Polanco area of Mexico City. This new location is designed to facilitate interaction with clients with collaborative spaces that foster communication and contact. Additional capacity investments in Mexico and Brazil are also underway.

In essence, relying on our entrepreneurial spirit, we will continue to reinforce our position on the market, bringing breakthrough innovation to our customers, and addressing the utmost needs of consumers' expertise, while having people and the planet at the heart of our actions.

[d]Green Motion is a trademark of Mane

















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Robertet Group

Grasse, France

2023 Sales: €721 million



Jérôme Bruhat shared, "We aspire to become the global hub for natural product innovation, with the launch of Villa Blu by Robertet, our first startup accelerator dedicated to visionary projects in the natural products ecosystem."

Robertet returns to the Leaders & Newsmakers issue with a one-on-one with CEO Jérôme Bruhat to discuss key company highlights, major influences for innovation and becoming more global to meet customer needs.

Can you share three key company highlights for the last 12 months?

Jérôme Bruhat [JB]: 2023 was another year of growth for Robertet, in terms of both sales and operating margin. In the midst of a highly uncertain backdrop, the company is expanding and has reported another year of over 5% growth (at comparable exchange rates) compared with 2022. Our operating margin remained steady and our EBITDA margin increased, demonstrating our robust business model and our ability to withstand persistently high inflation. Our Fragrance and Flavors operating divisions made strong contributions to our growth. Their creativity and agility have helped win over numerous customers. We also continue to believe strongly in the potential of our active and natural ingredients in the Health&Beauty division.

Robertet's main success is first and foremost its unique model, which integrates the product from the field, in partnership with suppliers, to the product we deliver to our customers with excellent traceability.

Images courtesy of Robertet Group

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ROBERTET
GROUPE

FUTURING NATURALS







Robertet Group CEO Jérôme Bruhat

Robertet continues to stand out for its commitment to innovation. We have developed a full range of green alternatives to traditional extraction processes and introduced upcycling initiatives. In 2023, we introduced the cleanRscent range of eco-designed absolutes, based on patented technology, responding to growing demands for more responsible perfumery. These innovations demonstrate our commitment to staying at the forefront of the industry and offering sustainable solutions.

Our globalization strategy has intensified with significant investments abroad. In 2023, we acquired Aroma Esencial in Spain and Sonarome in India, strengthening our presence in these key markets. These acquisitions testify to our ambition for international growth and our desire to diversify our global portfolio.

We have also redefined our brand platform and revised our strategic approach to better communicate our vision and values, introducing a new expression of our mission: FUTURING NATURALS. FUTURING embodies our bold vision and relentless quest for innovation, while NATURALS symbolizes our DNA and attachment to tradition.

What are the major influencers for innovation in 2024 leading into 2025?

JB: We have taken significant steps towards Corporate Social Responsibility (CSR), registering a new record of 55 certified natural supply chains. Our efforts are aimed at promoting sustainable agricultural practices, such as organic farming, and supporting forest preservation within our supply chains. In addition, we work closely with our suppliers to encourage the adoption of less energy-intensive processing equipment, thereby reducing our carbon footprint.

Organic farming is at the heart of our innovation strategy, helping to protect rural biodiversity and preserve soil quality. We are also investing in precision farming to further improve our agricultural practices.

In our quest for innovation, we have acquired a BioPod, an autonomous greenhouse developed by Interstellar Lab, which accelerates plant growth while limiting environmental impact. This technology, combined with our expertise in innovative extraction methods such as CO2 and microwaves, will enable us to create a range of natural products extracted using environmentally-friendly solvents.

Finally, we aspire to become the global hub for natural product innovation, with the launch of Villa Blu by Robertet, our first startup accelerator dedicated to visionary projects in the natural products ecosystem. This initiative aims to reinforce our leadership by attracting the most innovative young companies and stimulating collaboration and innovation in our sector.

We are convinced that the Robertet Group's ability to meet new challenges depends not only on the responsible and sustainable management of our environment, but also on our ability to draw inspiration from the genius of the living world.

What are your main company focuses and/or goals for the next 12 months?

JB: We are convinced that natural products have yet to reveal all their many benefits. Nature represents an inexhaustible source of inspiration for our research, our applications, and our creators.

New natural ingredients, added to the 1,700 ingredients we already source from 60 countries, the agronomy of the future, evolving extraction methods and the creative freedom given to our teams are all part of what we offer to our partners. Leading the way in understanding and respecting the environment is a source of pride for us, and also represents a unique resource for our customers.

We are modernizing the company to increase its international potential and improve efficiency. Reinforced governance, regional managers, more frequent exchanges between countries, and more effective creative and communication tools will help us achieve this. We are investing in our people, our industry and our information systems.

The future of Robertet is a company that cultivates its expertise, grows and innovates. Robertet is also becoming even more global and responsive to our customers' needs.

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Sensient Technologies

Hoffman Estates, Illinois

2023 Sales: Approximately $1.46 billion



Sensient seeks to be forward-thinking in sustainability practices at every level and is committed to the principles of sound environmental stewardship.

Thanks to another year of innovation, strategy execution, and prioritization of our customers' needs, Sensient Technologies is once again recognized as part of the Leaders & Newsmakers issue.

Earning our long-standing reputation for operating in a legal, ethical, and responsible manner around the globe, Sensient Technologies takes our mission seriously: to develop, produce and supply critical food, pharmaceutical, and personal care ingredients to the world.

Sensient knows that by operating with integrity, prioritizing professionalism and product safety, and seeking to sustainably source raw materials and produce products, we can best serve the needs of our customers. And we always strive to find a way to say "YES" to our customers.

Sensient Technologies, Paul Manning, chair of the Board, president, and chief executive officer discusses the company's sustainability strategy and a focus on innovation to exceed customers' expectations.

Innovation and Expertise Make Sensient a Premier Partner

While there will always be economic forces and market conditions that challenge our employees to optimize resources and innovate new solutions, Sensient maintains our ongoing commitment to transparency, exceptional quality, and respect for the environment.

Innovation is one of the major areas of investment. Sensient's experienced innovation team are experts in formulating natural flavors, extracts, and colors that work in our customers' products. We are channeling

Images courtesy of Sensient

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Let's Partner For Great Taste



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this deep knowledge toward creating new taste technologies to meet the health and wellness aspirations of our consumers. As more consumers show preference for such products and new regulatory requirements takes shape, there will always be a need to balance taste with health. This market gap demand remains a natural area for Sensient to showcase its innovation.

Last year, we expanded our Trueboost[a] technology portfolio to support sugar and salt-reduction-driven product development. This spectrum of natural, clean-label flavors supports some of the toughest reformulations as well as new product creation challenges. Our innovative masking solutions complement these technologies to balance out off-notes to improve overall taste. These highly advanced taste technologies provide our customers with the avenues to create healthy products without compromising on consumers' expectations of taste.

On the agriculture front, Sensient BioNutrients continues to work to help growers meet that challenge with its BloomGenix line of natural, sustainable plant nutrition solutions. Working toward the large-scale goal of increasing yield while reducing agricultural footprint and judiciously caring for the agricultural ecosystem, BloomGenix showcases Sensient's ability to support plant growth, cultivation, and processing.

Sustainability

Sensient seeks to be forward-thinking in sustainability practices at every level and is committed to the principles of sound environmental stewardship. Having surpassed our 2025 sustainability goals already in 2022, we have set new, ambitious but attainable goals for 2030. Informed by our culture of integrity, Sensient does not promise to do the impossible. We focus on what is sustainably achievable.

Sensient's sustainability strategy is built on five pillars:

1. Decarbonization
2. Water Stewardship
3. Waste Reduction
4. Sustainable Supply Chain
5. Sustainable Product Design

There is always more that can be done, but the results of our efforts will inform the future of our industry. Therefore, our updated targets are very ambitious.

Sensient is making progress toward its 2030 targets (using a 10-year lookback as our baseline measure for improvement):

1. We are on track to reduce carbon intensity of greenhouse gas emissions by 30%.

[a]Trueboost is a trademark of Sensient



Paul Manning, chair of the Board, president, and chief executive officer, Sensient Technologies

2. We are on track to reduce our overall water withdrawal by 30%. We are already ahead of schedule to reduce water withdrawal intensity by 30% in areas categorized as having high or extremely high-water stress levels.

3. We have almost reached our goal of increasing our average landfill diversion to 75%.

4. We are utilizing SEDEX and EcoVadis programs while strengthening our internal tracking of relevant supplier data.

5. We are on track to incorporate a sustainable design principles checklist into 100% of our innovation projects by the end of this year.

We believe that when our employees succeed, we succeed. We are committed to taking care of the employees who make up the foundation of our company and drive our continued global growth. Sensient has established a supportive, professional environment that fosters coaching, professional development, and opportunities for advancement.

We prioritize telling the truth, behaving professionally, and maintaining an unwavering commitment to producing safe products in safe facilities. We hold ourselves accountable and we put our customers first. Unlike most of the competition, we work together in person in our facilities every day. We aim to always be available to meet the needs of our customers no matter what.

Likewise, we are committed to supporting the communities where we work. We grow and source our products by partnering with and strengthening

farming communities through jobs, training, educational support, and disaster relief programs.

Moving from Reactive to Proactive

Market forces can be an obstacle or an opportunity, depending on your perspective. Sensient strives to be ready for anything our customers need to overcome that obstacle or take full advantage of that opportunity.

Sensient's new product development strategy focuses on helping our customers bring great products to market. We demand that all of our employees, from sales and marketing to regulatory and legal be responsive to the needs of our customers. We move much faster than most companies. We innovate in ways that help our customers succeed in meeting current demands.

For example, our SensaCraft Alcohol-Free Alcohol Type flavor platform provides all the tools manufacturers need to develop the perfect "mocktail," which many younger consumers are increasingly demanding. We create clean labels and organic, functional products using extracts with true-to-source flavor profiles and technology that can balance taste expectations with functional demands. We create products that satisfy the ever-changing regulations on sugar and sodium content while maintaining taste profiles. We are always working to develop new and more effective modulators even before regulations go into effect.

A Strategic Focus on the Future

Sensient will continue to focus on innovation that exceeds our customers' expectations, delivering solutions that perform in the most demanding applications. As we set priorities for the next year and beyond, Sensient will continue to concentrate on bringing life to products and enhancing life around us at every stage and phase of the process. We will continue to put our customers first.

p&f+



Symrise

Holzminden, Germany
2023 Sales: €4,730 million

In this year's Leaders & Newsmakers issue, newly inducted Symrise CEO Jean-Yves Parisot, Ph.D., shares insight into the impressive number of acquisitions and investments of the company in the last 12 months as well as technical advancements made across segments.

What was your company's biggest business accomplishment in the last year?

Jean-Yves Parisot [JP]: 2023 was again a successful year of growth for Symrise. We enhanced our portfolio very positively through targeted acquisitions and strategic partnerships. With the transition of CEO responsibilities to Jean-Yves Parisot, Ph.D., in early April 2024, Symrise is ready to shape the next chapter of its success story.

Putting this in numbers: The Symrise Group generated sales of €4,730 million in the 2023 fiscal year, an increase of 2.4 % in the reporting currency. Excluding portfolio and currency translation effects, organic sales growth amounted to 7.9% with a total of €903.5 million, adjusted earnings before interest, taxes, depreciation, and amortization (adjusted EBITDA) This corresponded to a margin of 19.1 %. Net income attributable to the shareholders of Symrise AG amounted to €340 million. Earnings per share achieved €2.44.

Cash flow from operating activities of €720 million was significantly above the previous year's level, driven mainly by a reduction in working capital and lower tax payments compared to 2022. The operating cash flow rate relative to sales amounted to 15.2%.

The equity ratio of 47.0 % was slightly above the prior-year level. Symrise therefore has a very solid basis for the continuing sustained development of its business.

After the end of the fiscal year, Heinz-Jürgen Bertram, Ph.D., has handed over the CEO position to Parisot, already a member of the Executive Committee and in charge of the segment Taste, Nutrition & Health, as new CEO effective March 31, 2024. The Supervisory Board also renewed the contract of Parisot for another four years until the end of September 2028. Heinz-Jürgen Bertram, Ph.D., is retiring in the best mutual consent and agreement after 21 years of service at Symrise, of which 19 as a member of the Executive Committee and 15 as CEO.

Also, Symrise expanded its Executive Board in spring 2023 and has hired the experienced manager Stephanie Cossmann, Ph.D., to take over the newly created executive responsibilities for the Human Resources and Legal group. At the same time, Jörn Andreas, Ph.D., has taken over the Scent & Care segment.



The Symrise Group generated sales of €4,730 million in the 2023 fiscal year, an increase of 2.4 % in the reporting currency.

Moving to sustainability, the figures in the Sustainability Record 2023 clearly demonstrate that Symrise achieved key sustainability targets last year. For example, the Holzminden-based Group was able to increase the share of strategic biological raw materials from sustainable sources to 95%. This mainly resulted from the more stringent monitoring of its entire value chain and closer collaboration with its suppliers. In compliance with the German Supply Chain Due Diligence Act, Symrise performed sustainability risk

Images courtesy of Symrise

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Symrise CEO, Jean-Yves Parisot, Ph.D.

assessments of all its suppliers. Seventy percent of them also reported on their own emission reduction measures last year.

In addition, with its transition to sustainable processes, Symrise improved the eco-efficiency of chemical oxygen demand in wastewater by 10.7%. It also made progress in cutting water consumption, with a reduction of 30.9% at dry locations in countries such as Egypt, India, Mexico, Spain, and Chile. Moreover, the company reduced greenhouse gas emissions from purchased raw materials and services in the supply chain (Scope 3) by around 43% between 2016 and 2023.

Taken together, these successes are enabling the company to achieve its overarching climate goals. From 2030, Symrise aims to operate net zero for direct emissions (Scope 1) and indirect emissions from purchased energy (Scope 2). The company is seeking to reduce emissions in the supply chain (Scope 3) by 30%. It intends to achieve net zero Group-wide by 2045.

What were your biggest technical advancements/ key acquisitions for the last year?

JP: Technical advancements: In the Taste, Nutrition & Health segment, work continued systematically using digital tools in our principal areas of research such as sugar, salt and fat reduction and improving the taste of plant proteins as meat substitutes or alternatives to dairy products. To this end, special statistical processes were optimized and applied, making a significant contribution to reducing project development cycles. Symrise presented an example of this way of working at the 21st FEI Cooperation Forum entitled "Characterization, processing and use of plant proteins – Concepts for foods of the future" held in Bonn on April 18, 2023. A further use of modern digital tools in identifying flavors to reduce sugar in food applications was presented by Symrise in a paper entitled "Identification of taste actives from cultural food heritage via combined text-mining and senso- analytical approach" that was delivered at the 13th Wartburg Symposium held in Eisenach on October 3, 2023. At the same conference, the company also presented current findings from citrus research in a paper entitled "Molecular-sensory decoding of Citrus latifolia Aroma" and described biotechnological approaches to manufacturing taste-balancing raw materials in a paper entitled "Biotransformation of flavonoids by fungal mycelium from edible Lentinus spp. to produce taste active flavonoids with isovanilloid motif." The further development of our citrus expertise is of significant importance considering the widespread use of these products in beverages, sweets, and other foods. That is why the molecular-sensory decoding process developed by Symrise is crucial for the exact characterization of flavor molecules and their combinations. This information is used by our developers and application technologists to create authentic product solutions for our customers. The use of renewable raw materials is becoming increasingly important in continuing to evolve selected technologies for the formulation of fragrances and product solutions. In this regard, Taste, Nutrition & Health presented its current work on spray drying coacervates on plant protein at the 21st Gums and Stabilisers for the Food Industry Conference that took place in Greece in July 2023.

The research and technology strategy is being implemented based on various research platforms. A large number of key topics are being worked on with a special focus on sustainability aspects. In the Food & Beverage division, examples include the development and adaptation of new, gentle and environmentally friendly separation technologies (Selective Enrichment Technologies Flavors SETFlavors[a]) and the expansion and elaboration of raw material sources for sustainable and natural product solutions for the Symrise code of nature[b] platform, which are primarily used for healthy

[a]Selective Enrichment Technologies Flavors SETFlavors is a registered trademark of Symrise

[b]Symrise code of nature platform is a registered trademark of Symrise

food concepts; the continuous development of natural and sustainable raw materials for flavor solutions that lead to the sensory-preferred reformulation of low-sugar, low-salt and low-fat food concepts; and the development of energy-efficient and low-solvent methods for concentration, beginning with plant-based raw materials. In 2023, a special focus was placed on the challenge of improving the taste of plant proteins as meat substitutes or for use in dairy products. Another focus is on reducing sugar in beverages and dairy products as well as in savory applications. In this context, the selection of varieties and new cultivation methods for a sustainable supply chain were developed and established for specific plant-based raw materials for the Taste Balancing product platform. Another focus of research in the Taste, Nutrition & Health segment is the development and application of modern digital tools for the rapid and targeted development of flavor solutions for selected food applications. The ProtiScan[c] process – developed by Symrise for recording the flavor release from innovative food preparations made with vegetable protein – is noteworthy in this context and was developed further in 2023. This process enables a significant reduction in project development times and forms a solid foundation for IT-based development concepts.

In addition, work is being conducted on the continuous improvement of product safety and the targeted optimization of the use of flavor solutions for application in reduced sugar and plant protein-based foods. In recent years, particular attention has been given to the development of digital prediction tools to support flavor development and creation. A sizable portion of this work was continued and completed in 2023 and grouped under the umbrella term "PropheSY".

Probi and the Naturals business unit have launched a joint project to develop new symbiotic products containing live microorganisms and polyphenols extracted from fruits.

Regarding its R&D strategy, the Scent & Care segment focuses on raw materials and technologies in accordance with the Fragrances division's strategic research fields of captives and ingredients, delivery systems, health and emotion, and malodor. The strategic field of captives and ingredients is researching individual perfume raw materials for the Fragrance and Oral Care business units. In the case of new synthetic substances (captives) based on petrochemicals and renewable raw materials, the focus is on floral, woody, and musky fragrances. In respect of the captives based on natural raw materials such as roots, flowers and fruits, work is concentrated on the strategic fields of biodiversity essential oils, natural technologies (Supernature) and artisan. In 2023, Cocoa Shell Madagascar, Neroli Oil Egypt, Supernature Sympep, Apple Symtrap, Strawberry Symtrap, Banana Symtrap and Blackcurrant Symtrap were added to the portfolio.

Research is also being conducted to find inexpensive raw materials for perfumery. Symrise has also added Natural Neofresh[d] to its Neofresh platform to meet customers' desire for sustainable products made from renewable raw materials.

Having continued the development of its combined expertise in fragrances and pet food, especially for dogs and cats in recent years, Symrise is now deploying these developments increasingly in direct customer projects.

The marketing of Symcap BG[e] biodegradable capsules has generated a great deal of interest from some customers for use in fabric softeners. Research for capsules for fragrance oils is now heading to vegan capsules with improved efficacy for other areas of application as well. There is also growing customer demand for vegan capsules. Symcap BG contains gelatin, so an alternative raw material based on pea protein has been found and developed into the new Symcap BP capsule that is market-ready. There is also increasing demand for kosher and halal products.

The Oral Care business unit has developed Fuji, a new cooling agent that is expected to be market-ready in 2024.

Research for the Aroma Molecules division is focused on improving existing manufacturing processes for market products such as menthol and on increasing process efficiency.

In the Cosmetic Ingredients division, there is an interdisciplinary group of cell biologists, molecular biologists and microbiologists researching the human microbiome. The new research area is investigating the benefits and risks of interactions between humans and microorganisms and is providing scientific and cross-divisional support in the development of new products for skin, scalp, and oral care, or in nutrition. The first products and product concepts have already been introduced to the market. In addition, in-depth analyses on healthy volunteers showed that neither multifunctional active ingredients nor modern UV filters influence the microbiome. In 2023, microbiome expertise was expanded to the armpit. The proprietary ex vivo model developed to identify active ingredients for deodorants was presented at a number of conferences, including the International Federation of Cosmetic Chemists and Scientists (IFSCC) Congress. It is expected that the first active substance based on the research model and the specific method will be market-ready in 2024.

[c]ProtiScan trademark of Symrise

[d]Natural Neofresh is a registered trademark of Symrise

[e]Symcap BG is a registered trademark of Symrise



Symruse filed 34 new applications in 2023 to measure innovation results and quality and evaluate global coverage and competitive impact.

Patents & Awards

The number of patents filed (34 new applications in 2023) is used to measure innovation results and quality and to evaluate global coverage and competitive impact.

In 2023, as in previous years, Symrise research was recognized with awards for its high level of innovation. Launched in 2023, the yarrow-based Supervisome[f] EPH received two awards: a European BSB Innovation Award in the "Cosmetics/Raw Materials/Actives" category and the Pure Beauty Award UK. The product is manufactured in a special process that extracts the juice from fresh, organically grown yarrow and spray dries it to yield a stable raw material that, when used in cosmetic products, is proven to give the skin a more even appearance. Also launched in 2023, SymProt'in™ Oat is manufactured by enzymatic extraction from organically grown oats and is rich in hydrolyzed proteins. Thanks to its special composition, the product helps to protect the structure of hair and received the BSB Award in the "Natural Products/Raw Materials/Actives" category. SymHair[g] Thermo, which was already launched in 2022 and has garnered numerous awards, won the Pure Beauty Global Award in the "Best Ingredient" category. It is a sustainable product that combines carbohydrates with different chain lengths, providing outstanding protection for the hair against thermal damage. Launched back in 2020, Crinipan PMC green impressed another jury in 2023 to win the prestigious PCHi Fountain Award in the "Hair Care/Scalp Care Ingredient" category. The product delivers proven efficacy against dandruff and satisfies consumer demands for environmentally compatible products.

The above technological advancements have led to a number of product innovations across all business areas.

Product innovation: Symrise has launched a collection of multifunctional ingredients for household care products. In addition to classic cosmetic ingredients, the company is now also offering multifunctional ingredients for household care products in this category. The multiple multifunctional ingredients improve cleaning performance, product aesthetics and enhance formula protection of products such as laundry, dishwashing, and surface care detergents. The demand for high-performance sustainable cleaning agents is growing rapidly while regulatory requirements for manufacturers

[f]Supervisome is a registered trademark of Symrise
[g]SymHair is a registered trademark of Symrise

constantly change. The Symrise ingredients assist with this change and support sustainability by reducing impact on the environment.

Symrise has introduced SymEffect™ UV and expanded its functionals portfolio. The synergistic mixture of renewable ingredients enhances the effectiveness of organic and mineral UV filters. It also improves the sustainability profile of sunscreens because of its natural raw material base. With this product launch, Symrise is responding to the trend towards sustainable sun care.

Symrise has launched a new range of diana food[h] bioactives for use in Beauty from within products. The company is expanding its offer with the development of these differentiating and innovative nutricosmetic ingredients. The range includes a full line of solutions for skin conditioning and anti-aging, skin brightening, as well as hair and nail care. It is composed of naturally sourced bioactives, such as collagen type I, vitamins C & A, and polyphenols from various fruits.

Symrise has introduced its tropolone-based SymDiol 68T and SymOcide PT. New data confirms the antioxidant effect of tropolone: It works effectively to protect from primary and secondary free radicals and stabilizes organic compounds that prevent oxidation. It also reduces protein oxygenation by 60% and the formation of peroxides in sunflower oil by 45%. Thanks to these properties tropolone supports the product protection system of formulations.

SymCalmin[i] Avena made from certified organic oats – can help soothe the skin and regulate its moisture balance. The product's effectiveness is on par with that of established substances. It also scores points for its sustainability. SymCalmin Avena has received the COSMOS certificate for its organic ingredient base. The organic oats come from regional sources in Germany.

Symrise has launched a range of diana food chickpea and aquafaba ingredients with multiple benefits. The range is backed by the expertise of Symrise in sourcing, quality, and food safety. The ingredients open opportunities in the development of plant-based food products with cleaner labels.

Symrise has introduced Crinipan[j] PO, an anti-dandruff active. The premium-grade ingredient offers proven efficacy and an option to replace zinc pyrithione when needed. Used in shampoos or other hair care products, it effectively combats dandruff, ensuring a flake-free scalp. Piroctone olamine, alongside zinc pyrithione, and climbazole, stands as one of the top traditional anti-dandruff actives globally. This product complements the comprehensive dandruff control portfolio of Symrise, offering versatility for all customer needs.

Some of our notable acquisitions in the last year include: Symrise has announced to participate in the Series A funding round of Ignite Venture Studio. The U.S.-based company creates and invests in global innovative start-up ventures associated with beauty, health, and wellness. By investing in Ignite Venture Studio, Symrise will expand its expertise in this market environment and grow alongside the creativity, and speed of the personal care industry. The partnership will further enable the development of tailored fragrance and cosmetic solutions in accordance with the latest consumer demands.

For its recent capital increase, Danish biotech company EvodiaBio was looking for strategic investors. Symrise joined the group of international contributors to support the fast-growing start-up. EvodiaBio has developed a ground-breaking technology platform that uses precision fermentation to produce sustainable taste for the food and beverage industry, with the potential to go beyond this market. Symrise looks forward to the future collaboration.

Symrise announced a strategic investment in Synergio. The biotech company specializes in the development of natural and sustainable solutions using advanced plant-based technology for consumer goods products. Symrise considers this investment a strategic step to expand its leadership position in the product protection business in the personal care industry. Symrise will acquire a minority ownership in Synergio with the possibility to acquire a majority stake in Synergio's share capital in the future.

Symrise AG has signed a minority investment agreement with Bonumose. The early-stage food ingredient manufacturer specializes in the affordable production of delicious, good-for-you rare monosaccharides (alternatives to sucrose) such as tagatose and allulose. With this strategic transaction, Symrise will accelerate growth in its sugar reduction initiatives. The area represents a high-priority focus for the North America region within the Taste, Nutrition & Health segment.

Symrise AG has increased its holdings in the U.S. company Kobo Products Inc., a pigment and powder specialist. The transaction creates further opportunities for both companies in the fields of mineral UV filters and decorative cosmetics. Kobo customers will also benefit from expanded capacities and global supply chains.

What are the key factors/trends shaping innovation in F&F in 2023?

JP: 1. Sustainability and natural ingredients: Sustainability continued to drive the F&F industry. Consumers increasingly demanded safe and effective

[h]diana food is a trademark of Symrise
[i]SymCalmin is a registered trademark of Symrise
[j]Crinipan is a registered trademark of Symrise

and environmentally friendly products. We address this with the increased use of natural and bio-based ingredients, as well as increasing efforts to ensure sustainable sourcing and reduce carbon footprints across production processes.

2. Health and Wellness: The growing consumer focus on health and wellness significantly influenced the F&F sector. We saw an increased demand for products that contribute to wellbeing, including functional fragrances with benefits such as mood supporting, and immune system support. Taste solutions that promote health, such as those with reduced sugar, salt, and fat, or enhanced with vitamins, also gained popularity. Our broad portfolio offers solutions for all those areas.

3. Technological Advancements: Advances in technology played a critical role in innovation within the F&F industry. We evolved our tools involving artificial intelligence (AI) and machine learning for scent and taste creation, improving the speed, efficiency, and sustainability of product development. Additionally, we employed biotechnology for creating novel ingredients and achieving flavors and fragrances that are hard to extract from natural sources.

4. Personalization: Another trend we observed, links towards increased personalization, with consumers seeking products tailored to their specific preferences and needs. We facilitate this by developing customized fragrance and taste experiences, enabled by digital technologies that allow customers to create unique products.

5. Cultural and demographic shifts: Changes in consumer demographics and cultural shifts continue to influence taste and fragrance preferences. For instance, the growing multicultural populations in many countries lead to an increased appetite for global, exotic, and ethnic tastes and scents.

Could you share your insights on the impacts of evolving regulatory updates?

JP: Regulatory updates exert a profound impact on the flavor and fragrance (F&F) industry ranging from product formulation to marketing strategies.

1. EU Taxonomy & EU Green Deal: Through the introduction of the EU Taxonomy, the European Union has classified environmentally sustainable business activities. Beginning in 2023, companies must demonstrate how they will incorporate six environmental goals into such areas as their capital expenditures or production technologies. Because Symrise's business model is sustainably structured per se, it has already well prepared itself for this work. The European Green Deal is designed to make the EU the world's first net zero economic region by 2050. The EU Taxonomy is an important aspect of this plan. This uniform classification system is aimed at channeling private and public investments in a way that will finance the transformation to a sustainable economy. The EU has defined six overarching environmental goals to structure the process: 1) Climate protection, 2) Climate change adaption, 3) Sustainable use and protection of water and marine resources, 4) Transition to a circular economy, 5) Pollution prevention and control, 6) Protection and restoration of biodiversity and ecosystems.

2. Product Reformulation: With new regulations, we may have to reformulate products. This can involve significant research and development to find suitable alternatives with the same sensory qualities, safety, or effectiveness. For example, regulations limiting the use of synthetic ingredients might push companies to explore natural alternatives, which can be more costly or variable in supply. At the same time, this can also drive innovation.

3. Compliance Costs: Adhering to evolving regulations typically increases operational costs. These costs arise from the need to conduct additional testing and certification, modify production processes, and manage more complex supply chains. Companies may need to invest in modern technologies or processes to meet these standards.

4. Consumer trust and brand image: Companies that proactively address regulatory changes and adopt more stringent safety and sustainability standards can enhance their brand image and build consumer trust.

In summary, regulatory changes pose challenges and offer opportunities to lead innovation. By adapting to these changes, we can improve our products and processes, ultimately benefiting both consumers and the environment.

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T. Hasegawa

Tokyo, Japan

2023 Sales: ¥64,874 million[a]



Last year, T. Hasegawa achieved the highest globally consolidated sales in the company's history.

This year's T. Hasegawa Leaders & Newsmakers feature is jointly answered by T. Hasegawa Co. Ltd. president and COO, Takao Umino, alongside T. Hasegawa USA, Inc., chief executive officer, Tom Damiano.

Can you share three company highlights for the last 12 months?

T. Hasegawa's business has continued to grow globally over the past year, as we strengthened our operations, expanded our capabilities, increased production capacity and introduced new technologies that advance the science of flavor development.

Last year, we achieved the highest globally consolidated sales in our company's history but as in previous years, it was not without challenges. While post-pandemic restrictions eased and socioeconomic activities began to normalize last year, concerns about the impacts of global disruptions that affect trade routes, raw material availability and their associated costs, and currency depreciation have been a challenge over the past 12 months. Despite these unexpected obstacles, we have overcome each challenge to expand flavor and fragrance sales and grow in the U.S. and Asian markets by remaining flexible and strategic in our management while aligning with customer demand to execute effectively. As a result, our financial results remained steadfast with global consolidated sales hitting the highest level for three straight fiscal years, due to the increasing sales of non-consolidated and T. Hasegawa USA. Sales from global subsidiaries outside of Japan, including T. Hasegawa USA, increased from 45.9% to 46.5% last year.

Our newest manufacturing facility in Rancho Cucamonga, California, opened last year and represents

[a]Representing total /consolidated sales for fiscal year ending September 30, 2023

Images courtesy of T. Hasegawa

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L to R: T. Hasegawa Co. Ltd. president and COO, Takao Umino, and T. Hasegawa USA, Inc., chief executive officer, Tom Damiano.

an expansion that is already generating positive top-line growth quickly while maintaining our long-term vision to boost production capacity and benefit from increased scale. In 2024, we have embarked on the next phase of capacity and capability expansion. Our current facilities in Cerritos, Calif. continue to serve as an R&D innovation center and manufacturing of savory flavors. We have embarked on an extensive renovation of our R&D Center which will enlarge our flavor development and applications footprint with additional chemist labs, state-of-the-art equipment, and an expanded pilot scale facility. Our Cerritos manufacturing plant has also entered the next phase of capacity and capability expansion and we are very proud to announce that T. Hasegawa Cerritos is now a USDA-certified facility, which will allow us to expand our flavor portfolio into USDA-certified flavors.

The talented team remains the heart of T. Hasegawa. Our synergy with T. Hasegawa's R&D center in Japan strengthens our research capabilities by sharing technical information throughout our operations to better align with global trends. Beyond R&D, our sales personnel, production managers and customer service team are a key part of our strategy to drive lasting customer relationships and broaden our flavor offerings and applications. One of T. Hasegawa's key strengths is interfacing with our customers – our employees are passionate about helping our customers succeed by solving problems, maintaining open communication and becoming a true partner that helps develop effective food and beverage flavor solutions.

What are the major influencers for innovation in 2024 leading into 2025?

Technical innovations are the driving force of our business at T. Hasegawa. We strive to continually offer new flavor modulation programs and develop unique technologies that advance the field of flavor development and modulation. These technologies are driven by trends as well as challenges in formulating increasingly complex foods and beverages.

Our "Bridge to Tokyo" flavor development program continues to drive innovation and solutions for our customers. In this program, new technologies and flavor profiles are initiated by T. Hasegawa's R&D team in Japan and further enhanced by T. Hasegawa USA to introduce new, relevant, and trending flavors in the Western market.

In terms of overarching trends that influence flavor innovation, we expect 2024 into 2025 to be a return to comfort, with familiar dishes providing consumers with relief from the hustle and bustle of life. The pleasure of savoring food and drinks is all about the experiences they offer and amazing tastes they bring to our mouths – but we also see comfort foods trending in a healthier direction. Consumers have an increasing desire



"We strive to continually offer new flavor modulation programs and develop unique technologies that advance the field of flavor development and modulation."

for healthier foods and beverages, whether with core flavors or new unique flavors, in a way where quality and authenticity is key.

T. Hasegawa has innovated around these major influences and trends with a core portfolio of technologies to provide solutions to today's challenges in ways that address quality and authenticity.

Our most significant technologies in recent years were the launch of Boostract[b], EmulsiTract[c], HaseAroma[d], ChefAromae. These technical innovations continue to provide relevant solutions to food and beverage development challenges and drive consumer satisfaction.

Boostract is a novel flavor modifier that enhances the way consumers experience food and beverages. Boostract adds or enhances kokumi (which translates to "rich taste" in Japanese), increasing the richness of taste while maintaining a balance between different flavors. This exclusive technology by T. Hasegawa allows us to help food and beverage brands deliver a consistent experience to consumers, enhancing the existing flavor profile while amplifying the mouthfeel, taste and texture. Boostract has also proven to be an effective masking agent, eliminating unwanted flavor notes in select food products while boosting the desired flavors in others. Boostract is well suited to be used in many different end-use foods and beverages such as dairy, sauces/dressings, beverages, savory, alternative protein/dairy, baked goods and more.

EmulsiTRACT is a proprietary fat mimetic technology that creates a thick, creamy sensation by combining edible fats and oils with components that enhance other flavors. This technology has a particle size close to traditional dairy milk, which provides functionality, thickness and richness to product lines where milk fat or fat replacers are often sought after to create a better-augmented texture. A significant feature of EmulsiTRACT is that this unique natural flavor modifier can limit the dependency on palm oil and other edible oils where supply chain challenges are still a concern. EmulsiTRACT is also very effective in the development of plant-based protein products – a category that has continued to grow each year. EmulsiTRACT is versatile technology with a wide range of applications across many categories such as dairy, sauces/dressings, beverages, savory, alternative protein/dairy, baked goods and more.

In recent years, we also introduced HaseAroma and ChefAroma – two innovative new flavor technologies designed to create more authentic taste experiences.

[b]Boostract is a registered trademark of T. Hasegawa
[c]EmulsiTract is a trademark of T. Hasegawa
[d]HaseAroma is a trademark of T. Hasegawa

HASEAROMA is a proprietary research and enhancement technology that creates authentic sweet and savory flavors through an extensive sensory analysis process that isolates specific flavor molecules within foods and beverages. HaseAroma aims to reproduce that "first bite" sensation that we experience biting into a food for the first time, packed with intricacy and nuances of flavor. The unique process and technology of HaseAroma can reproduce the flavor profile of a specific fruit varietal such as a Golden Pineapple, Alfonso mango or White or Pink grapefruits. The benefits of HaseAroma aren't limited to fruits and other sweet flavors, we can replicate the distinct depth of flavor achieved through cooking applications such as caramelized, sauteed, grilled, roasted and more. HASEAROMA can deliver flavor specificity in savory applications, such as differentiating between the flavor of chicken thigh or chicken breast versus chicken skin and importantly, doing so without the use of any animal products, creating a unique type flavor replicating the original taste. With the immense growth of vegetarian and vegan diets in North America, savory flavor technology like HaseAroma will continue to solutions to development challenges.

ChefAroma is a new flavor technology designed to deliver chef-inspired flavors in less time, providing a rich complex flavor that is true to original culinary recipes. Targeted to foodservice applications, ChefAroma uses reaction flavor technology and real food ingredients like butter, onion and wine to add complexity and intensity to foods. For example, ChefAroma can cut down on the prep time and be added as a base for a variety of soups/broths, condiments, glazes, ready-meals and other dishes to instantly deliver the distinct taste of restaurant quality flavors that have been cooking for hours, saving time and money.

What are your main company focuses and/or goals for the next 12 months?

Over the next 12 months, our company's focus is to continue to strengthen our operations, expand our capabilities, increase capacity and introduce new flavor and modulation technologies that help solve our customer's challenges while delighting consumers.

Our primary goal at the company this year is to sharpen our competitive edge by becoming the fastest and most efficient flavor manufacturer in the market. We're targeting several key areas to achieve this goal. Importantly, we aim to significantly reduce the time it takes to bring new products from the drawing board to the market. Speed is of the essence in our industry and by accelerating our operational timelines, we can deliver innovative solutions more quickly than ever before.

Another major focus is optimizing our overall processes to boost our operational efficiency. We're also concentrating on improving our delivery metrics to ensure that every product reaches our customers on time and in full, enhancing their overall satisfaction and loyalty to our brand.

Additionally, we're fostering a culture of innovation and agility within our teams. By encouraging creative problem-solving and enhancing cross-functional collaboration, we aim to keep our processes lean and our products cutting-edge. This agile environment will also help us respond swiftly to market changes and customer needs, ensuring we not only meet but exceed expectations.

In summary, our goal for the next year is to streamline our operations, enhance quality assurance, and ensure customer satisfaction through faster market delivery, cost efficiency, and continuous innovation. These initiatives are designed not just to sustain but to grow our market leadership in the flavor industry, creating lasting value for our customers and stakeholders.



Takasago

Tokyo, Japan
2023 Sales: ¥195,940 million

As we bid farewell to FY2023, we reflect on the culmination of New Global Plan-1 (NGP-1), Takasago's 3-year mid-term management plan. This transformative period saw us unite across divisions and organizations to pursue three fundamental directions: expanding overseas growth, improving profitability in Japan, and promoting sustainability.

Our expansion strategy lies in a dedication to building a robust global infrastructure, from building up the R&D capabilities to develop innovative flavor and fragrance to the establishment of new facilities and introduction of core systems at the global overseas sites to meet the needs of customers and consumers while caring for people and respecting the environment, in line with our Vision 2040.

Following on, Takasago president and CEO Satoshi Masumura speaks on how Takasago translates the recent trends and future prospects to the company's latest developments and strategies in this year's Leaders & Newsmakers issue.

Can you share three key company highlights for the last 12 months?

Satoshi Masumura [SM]: FY2023 was the final year of New Global Plan-1, which is Takasago's 3-year mid-term management plan. We worked across divisions and organizations to address the priority issues based on three basic policies including promoting overseas growth, improving profitability in Japan, and promoting sustainability.

Firstly, we have introduced the core system as part of our efforts to develop a global business infrastructure. After deploying the system at Singapore site in FY2022, we proceeded to introduce it at our U.S. site in FY2023.

We view the promotion of digitalization as an indispensable strategy for improving the productivity of the entire Takasago Group under the One-Takasago initiative as it will enable us to unify and streamline our global workflow in the process of development and utilization.

At the same time, we are also working on data visualization on a global scale to promptly respond to issues and speed up decision-making.



Satoshi Masumura shares, "In a world where sensory experiences play a vital role in consumer decision-making, aroma ingredients hold a unique position."

Secondly, as part of the restructuring of the production system based on the synthetic business growth strategy, we have decided to make a capital investment of approximately 8 billion yen at the Iwata Plant in Japan for the manufacture of pharmaceutical intermediates in the fine chemicals business.

This investment will promote further growth by increasing the capacity of the fine chemicals business to meet strong demand from overseas, especially from large pharmaceutical companies in the United States.

In addition, we will establish an environmentally friendly and sustainable production system based on the design concept of reducing the use of energy and water.

Images courtesy of Takasago

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Satoshi Masumura, president and CEO, Takasago

Construction is scheduled to begin in April 2024 and operations are scheduled to begin in the second half of 2025.

Last but not least, our Indonesian facility, one of our overseas growth drivers, achieved significant growth in FY2023. Prior to the establishment of the Indonesian plant, we mainly exported and sold products manufactured in Singapore to the Indonesian market, but in November 2019, we constructed a new plant in order to quickly respond to strong local needs.

Besides the transfer of manufacturing from the Singapore base, the increase in revenue from New Win contributed significantly to growth in FY2023.

Indonesia has a population of over 270 million and is expected to continue to grow in both flavor and fragrance segments.

What are the major influences for innovation in 2024 leading into 2025?

SM: The flavor and fragrance industries are poised for ongoing innovation driven by various influences. These influences encompass shifting consumer preferences, technological advancements, sustainability imperatives, and emerging trends. Understanding these key factors is essential for businesses seeking to stay ahead in the competitive landscape of flavor and fragrances.

One of the most significant influences driving innovation in flavor and fragrance is the increasing emphasis on sustainability and natural ingredients. Consumers are becoming more environmentally conscious, demanding products that are ethically sourced, and eco-friendly. In response, manufacturers are focusing on sustainable ingredient sourcing, adopting green production methods, and reducing carbon footprints. This trend is leading to the development of flavor and fragrance derived from renewable resources, such as botanical extracts, natural essential oils, plant-based alternatives to synthetic ingredients and biobased synthetics.

The wellness movement continues to influence consumer preferences in both flavor and fragrance products. There is a growing awareness of the link between aroma, taste, and emotional well-being, driving demand for products that promote relaxation, mindfulness, and stress relief. Fragrances infused with calming essential oils like lavender and chamomile, as well as products with functional ingredients, are gaining popularity. Innovations in this space focus on creating holistic sensory experiences that cater to consumers' desire for self-care and emotional balance.

Consumers are increasingly seeking flavor and fragrance that offer health benefits and functional properties. This trend is driving the incorporation of ingredients with antioxidant, anti-inflammatory, and immune-boosting properties into fragrance and flavor formulations. From probiotic-infused fragrances to functional foods and beverages, innovation in this space is driven by the convergence of taste, aroma, and health. Brands are capitalizing on the demand for products that not only smell and taste good but also support overall well-being.

Concurrently, as consumers promote healthy lifestyles, there is a growing emphasis on basic taste & nutrition, further driving the development of health-conscious food & beverage products.

Additionally, the alternative protein market is growing rapidly, especially for plant-derived products, including Dairy Alternative and Meat/Seafood Alternative. The demand for such products varies by country and region. To meet customer demands for "masking" and "authentic" flavor, we will actively develop new ingredients/flavors.

We see continued interest in more environmentally friendly solutions both due to Regulatory pressures, like the restrictions on non-biodegradable microplastics, and company commitments, for example in the areas of CO_2 emissions reporting and reduction. Takasago has been producing ECHA-compliant fragrance capsules for over a year now, and we expect the transition to this capsule type to continue in 2024-25, alongside further improvements in the chemistry. Calculating carbon footprints for fragrances and flavors is not straightforward and in addition

to our internal efforts, we participate in the various IFRA-IOFI cross-company initiatives in this area. There remains strong interest in the science behind mood-related claims, however, legal concerns often temper the final on-pack claims – we still see this as an important area of research, in line with consumer needs. An emerging area in terms of claims is the use of Artificial Intelligence. In this fast-developing area, our internal teams collaborate with external partners to enhance our speed and creativity.

Advancements in technology are enabling greater personalization and customization in flavor and fragrances. Brands are leveraging data analytics, artificial intelligence, and machine learning algorithms to analyze consumer preferences and create bespoke fragrance and flavor profiles. Customizable perfume blends, personalized skincare products, and flavor-mixing platforms empower consumers to create products tailored to their individual tastes and preferences. This trend reflects the growing demand for personalized experiences.

Advancements in technology and sensory science are driving innovation in fragrance and flavor creation. From advanced extraction techniques to virtual reality-enhanced sensory experiences, technology is revolutionizing product development processes. High-throughput screening methods allow for rapid screening of fragrance and flavor ingredients, accelerating the discovery of novel compounds. Additionally, neuroscientific research into olfaction and taste perception provides insights that inform the design of more effective and evocative fragrances and flavors.

By understanding and leveraging these major influences, businesses can create products that resonate with consumers and stay ahead of evolving market trends.

What are your main company focuses and/or goals for the next 12 months?

SM: Competition in the industry is expected to intensify amid soaring energy costs and raw material prices triggered by the Russia-Ukraine crisis. Considering the impact of geopolitical risk on resource prices and the impact of political instability on supply chains, we believe it is important to firmly grasp evolving consumer needs and develop and sell products that align with these changing demands. We also believe that these efforts will lead to improved profits for the company as a whole.

As we enter the next phase of our strategic growth plan, our primary focus remains on capturing a larger share of the global flavors market, with a particular emphasis on the Asian region. Additionally, we are actively exploring opportunities to establish footholds in key markets such as India and Africa.

For the fragrance side, the focus will be on enhancing our creative and technical capabilities in emerging markets, particularly in India, China and South-East Asia where market growth rates across both the consumer and fine fragrance categories remain resilient. In India, we have added a creative center to our growing network. Situated in Mumbai, this will serve the dynamic Indian market and provide a collaborative hub for our strategic partners to engage with Takasago teams to provide customized solutions for their brand portfolios. This opened in April 2024 and compliment the modern production facility located in Chennai. We will also invest in new facilities in specific markets such as Vietnam, where we are seeing continued growth versus the traditional developed markets.

Regarding commercial goals, Takasago will continue to focus on speedy delivery aligning with market growth rates. This has been achieved over recent years as we have focused on providing fragrance solutions across the Consumer categories. These have included new approaches to combating malodors, augmented emotions with fragrance and harnessing the power of data to create winning fragrances for our partners. We will continue to invest in those innovation platforms that enhance the quality of consumers' lives and this forms part of the core principle of Takasago, "contributing to a society based on technology."

Furthermore, we will also enter an exciting new phase of development in the Fine Fragrance category with new leadership, perfumer, and commercial team members to deliver value to our partners across the marketplace. Markets of focus will include Dubai, India and China as these countries are characterised by new levels of creativity and product launch dynamism.

The most important objective of 2024 is the continued focus on our corporate sustainability goals. We will leverage our understanding of green chemistry, explore ways to minimize our environmental impact and develop tools to measure continuous improvement. Today we already embed into our creative development process, carbon footprint measurement and design formulations for efficiency. The overarching goal is to create fragrances that delight the consumer, have elevated sustainability credentials, and deliver innovative benefits that support the product portfolios of our valued partners.

Although COP29 of the United Nations Framework Convention on Climate Change will be held in Azerbaijan in 2024, many issues related to climate change remain, and we anticipate continued concerns regarding the supply of natural ingredients post-2024 due to climate change and unstable global conditions. To address these issues, we will continue to develop flavors that reduce our dependence on natural ingredients and promote product development with an

awareness of biodiversity. We will also promote green chemistry by developing products that utilize renewable raw materials (Sustainable Scent[a] and BIOSWITCH[b]) and highly efficient processes that use catalysts to reduce the environmental burden. Additionally, we will actively engage in bio-based manufacturing and develop biodegradable products to further promote the development of environmentally friendly products.

In a post-pandemic world where health consciousness remains paramount, emphasizing mental and physical well-being is expected to continue growing in importance. To meet the demands of this health consciousness, we will focus on developing flavors and fragrances that utilize psychophysiological measurement technology and human olfactory and taste receptors, proposing the Shojin® solution to address the challenges of plant-based foods, and expanding Vivid Flavors[c] Retroma[d], which offers authenticity to improve palatability.

In a world where sensory experiences play a vital role in consumer decision-making, aroma ingredients hold a unique position. Whether it's the enticing scent of a perfume, the comforting aroma of a home fragrance, or a taste that transports us back in time, evoking vivid memories shows that the power of fragrance or flavor cannot be overstated. As we embark on the journey of the next 12 months, understanding the strategic landscape of aroma ingredients becomes crucial for businesses in the flavor and fragrance industry.

Again, innovation lies at the heart of Takasago's corporate philosophy: "Contributing to Society through Technology." Investing in research and development to discover novel aroma ingredients and formulations is essential for staying ahead of the curve. Over the next year, we will focus on experimenting with sustainable sourcing methods, exploring new extraction techniques, and harnessing the potential of biotechnological advances to create innovative solutions. Moreover, catering to the rising demand for personalized fragrances through customizable options can be a lucrative avenue to explore.

The fragility of global supply chains has been highlighted in recent times, making supply chain resilience a top priority for businesses. Diversifying sourcing locations, establishing strategic partnerships with reliable suppliers, and adopting digital technologies for real-time monitoring and optimization can mitigate supply chain risks. Additionally, fostering transparency and traceability throughout the supply chain will enhance credibility and trust among consumers, especially regarding ingredient origins and sustainability practices.

In 2024, we will implement the next generation of SAP in our major development and production facilities. This investment will enhance our supply chain resilience and provide a capability designed to meet our partner demands and navigate the challenges the industry faces in material sourcing and logistics. These challenges are wide-ranging, from the geopolitical to environmental and building robust contingency plans will remain a company focus throughout the next growth plan.

In a crowded marketplace, effective brand positioning and marketing strategies are essential for capturing consumer attention and fostering brand loyalty. Over the next 12 months, focus on crafting compelling brand narratives that resonate with consumers' emotions and aspirations. Takasago has adopted a new theme that incorporates Japan's 72 Microseasons and traditional colors of Japan. This is an alternative way to visualize the unique olfactory experiences offered by Takasago products, along with transparent communication about ingredient quality and sustainability efforts, which can differentiate our brand in the competitive landscape.

Adherence to regulatory standards and safety protocols is non-negotiable in the flavor & fragrance industry. Stay abreast of evolving regulations pertaining to fragrance ingredients, labeling requirements, and safety assessments to ensure compliance. Investing in rigorous testing and certification processes demonstrates a commitment to product safety and consumer welfare. Moreover, proactive engagement with regulatory authorities and industry associations can facilitate knowledge-sharing and regulatory advocacy initiatives.

In an interconnected world, collaboration holds immense potential for driving innovation and growth. Explore opportunities for collaboration with other industry players, research institutions, and technology providers to exchange knowledge, share resources, and co-create solutions. Collaborative ventures can range from joint research projects and ingredient sourcing agreements to co-branded product launches and marketing campaigns, fostering synergies that benefit all stakeholders involved.

As we navigate the path of the next 12 months and beyond, embracing a strategic approach to aroma ingredients is paramount for success in the flavor and fragrance industry. By leveraging market insights, fostering innovation, optimizing supply chains, strengthening brand positioning, ensuring regulatory compliance, and fostering collaboration, businesses can carve out a competitive edge and delight consumers with captivating olfactory experiences. We will embark on this fragrant journey with foresight, resilience, and creativity, shaping a scented future that captivates the senses and inspires the soul.

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[a]Sustainable Scents is a trademark of Takasago
[b]BIOSWITCH is a registered trademark of Takasago
[c]Vivid Flavors is a registered trademark of Takasago
[d]Retroma is a registered trademark of Takasago

Fermentation for Flavor and Functionality @ *Flavorcon* 2024

Discover how fermented flavors tap into the consumer's desire for natural, clean tastes, offering functional and sustainable benefits.



Fermentation, an ancient practice, involves beneficial microbes transforming raw materials into flavorful wonders—like kimchi.

Flavorcon is set to return to Atlantic City, New Jersey this October! Register ASAP for the best rates for the conference and expo hall set to be held October 8-9, at Harrah's Resort & Casino. Register now to set your flavor innovation agenda; 1-day passes are available, as are group rates.

If it's true that we eat with our eyes first, the nose comes a close second. Flavor significantly influences our preferences, shaping the course of human history. Each year, flavor trends emerge, with a recurring theme being the rising demand for clean flavors devoid of unfamiliar or artificial chemicals. Consumers seek nature-inspired traditional flavors while bridging nostalgia and a global culinary journey.

Fermented flavors align with the desire for natural, clean, traditional, and global tastes, offering functional and sustainable benefits. Fermentation, an ancient practice, involves beneficial microbes transforming raw materials into flavorful wonders—from bitter cocoa beans to chocolate, barley to beer, flour to bread and beyond.

In the upcoming *Flavorcon* (*www.flavorcon.com*) session, "Fermentation for Flavor and Functionality," senior innovation scientist, Suja Senan, Ph.D., is set to to take the stage. Discover how fermented flavors tap into the consumer's desire for natural, clean tastes, offering functional and sustainable benefits.

Advancements in bacterial and yeast genome sequencing, coupled with computational tools, enable a deeper understanding of metabolic pathways leading to flavor molecules. This knowledge facilitates tweaking for efficient exploitation and process optimization. The new-age application of omic tools to age-old practice of fermentation gave birth to precision

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fermentation. Earlier we needed grapefruit to produce the characteristic nootkatone compound. Today we have engineered yeasts fed on glucose and nutrients that can produce nootkatone in high titers in a tank. Another glaring example of using fermentation is in vanillin production. A meager percent comes from vanilla harvested from orchids, while the majority is chemically synthesized. Precision fermentation has been used to sustainably meet the surging demand by using cellular beings and turning them to cellular factories. Flavor companies worldwide are at the cusp of embracing novel machine-learning approaches to create formulations at a faster pace.

Meet Suja Senan, Ph.D.

"Fermentation I Bioflavors I Functional Foods I Beholder of Equity I Uplifter through STEM"

My curiosity for the new and innovative in food science has always been a driving force, leading me from academia to industry in a non-linear career path. I am passionate about harnessing cutting-edge technologies for human wellness, particularly in the realm of functional foods and emerging trends. With over 15 years of experience, I have led strategic projects that integrate technical expertise with industry insights. My work encompasses a range of innovations, including: - Development of value-added fermented dairy and non-dairy products - Metagenomics and fecal microbiome analyses - Nanoencapsulated core-shell models for delivering functional ingredients - Natural antimicrobials for meat and bakery applications - Fermented juices and juice drinks Throughout my career, I have cultivated skills in analytical and disruptive thinking, active learning, problem-solving, and ideation. On a personal note, I am dedicated to inspiring young girls to pursue STEM careers and am a staunch advocate for inclusivity, equity, and diversity in all my endeavors.

Pre-Con

Flavorists, get your education started early with this first-come first-served pre-*Flavorcon* session on Monday, October 7! This session will take attendees on a guided tour through a lineup of organoleptic materials with the help of Bell Flavors & Fra°grances principal flavorist, Cynthia Lipka, and junior flavorist Michael Morrison as well as a second session featuring independent flavorist and "Flavor Bites" columnist, John Wright and a flavorist from PepsiCo. This session has an additional fee and lunch is included!

New to Flavorcon?

Flavorcon is designed to give flavorists and product developers the tools they need to succeed in an



Suja Senan, Ph.D.

increasingly complex market, *Flavorcon* will connect the dots among emerging R&D advances, food and beverage market and flavor trends, and supply chain innovations. The two-day conference will include a series of data/analytics presentations, interactive educational talks and panel discussions featuring some of the industry's leading experts. Attendees will come away inspired with new tools and connections to create flavorful wins and products consumers love.

Members of SFC, BSF and WFFC receive an additional discount for registration. Don't miss out!

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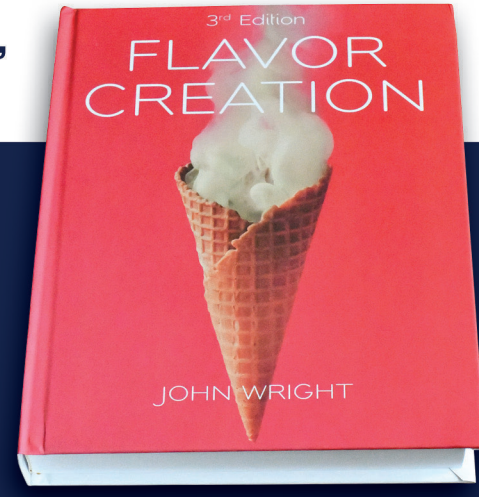
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