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January 2024

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Fragrance Industry Shifts to Repurposed Ingredients to Amplify Sustainability

Michael Edwards Joins *World Perfumery Congress* 2024 Speaker Roster

Harnessing Wellness through Fragrance

Discover the latest research ventures, launches and technologies on page 32.

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What Does 2024 Have In Store for F&F?

Self-care remains strong in consumer trends post-COVID across flavor and fragrance segments. Consumers are looking for products that can tap into their physical, mental and spiritual well-being. For instance, Gen Z are heavy fragrance users, focused on the mind-scent connection. Mood is central to motivating purchases, Circana[a] reported that 80% of fragrance users say that scent is critical for enhancing or lifting their moods. With that in mind, F&F houses are investing in the research and development of functional ingredients (more on **page 32**).



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Circana reported that 80% of fragrance users say that scent is critical for enhancing or lifting their moods.

A highly contested topic for creators is the use of artificial intelligence (AI) during the formulation of both flavor and fragrance. I connected with Mane VP perfumer Vincent Kuczinski for his take on utilizing AI as a tool in fine fragrance formulation as well as his advice for fellow seasoned *World Perfumery Congress* (*WPC*) attendees and newbies alike to maximize their experience at the upcoming event (listen in the digital edition on **page 39**).

World Perfumery Congress 2024

The *WPC* presented by the American Society of Perfumers and produced by *Perfumer & Flavorist*+— is set to return to Europe this summer! The theme is **Fragrance Forward: Where Global Innovation & Creativity Meet**.

Scheduled for June 24-27 at Palexpo in Geneva, Switzerland, the event hosts an expo hall, networking opportunities and conference sessions. Fragrance expert and author Michael Edwards will be taking the stage (**page 38** for session details), among fellow key players in the industry. Whether you plan on staying in Geneva for the entire event or popping over for a day to explore the expo hall, attendees have an array of registration options. Be sure to get your early bird ticket by visiting *www.worldperfumerycongress.com*.

Flavorcon 2024

Ready for *Flavorcon*'s return to Atlantic City, New Jersey? The two-day event is scheduled for October 8-9, 2024. Be sure to come a day early (October 7) for the opening cocktail reception to kick off the flavor event of the year. 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. British Society of Flavourists, Society of Flavor Chemists and Women in Flavor and Fragrance Commerce receive a special rate to attend!

Visit *www.flavorcon.com* to add your name to the mailing list to stay up-to-date on speakers, sessions and expo hall details.



[a]*https://www.circana.com/intelligence/press-releases/2023/gen-z-accounts-for-the-highest-bump-in-fragrance-usage-circana-reports/*



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2-Tridecanone (FEMA# 3388, CAS# 593-08-8) is an aromatic component that imparts fatty, herbaceous and slightly spicy notes. Often compared to the taste of dairy, the material becomes especially appealing when paired with meat or coconut flavors. 2-Tridecanone can be derived naturally from cheese, coconuts, cooked meats and orange peels.



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www.natadv.com

Natural Advantage introduces its Sweet Advantage-2, natural sweetness enhancer. This material can be used to enhance the "sugar bowl' effect in reduced sugar applications and applications using non-nutritive sweeteners such as Reb A and Lo Han. At lower levels, it can help intensify flavors and help smooth profiles. The product works nicely with cola, chocolate, vanilla, coffee and liquor type flavors. A typical use rate of 0.01-0.10% as consumed in finished product. EU and U.S. Natural, Kosher, non-GMO and vegetarian.



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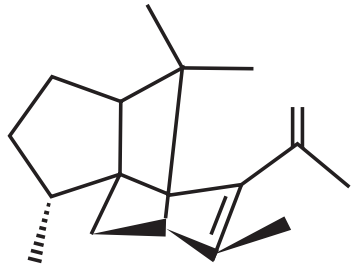


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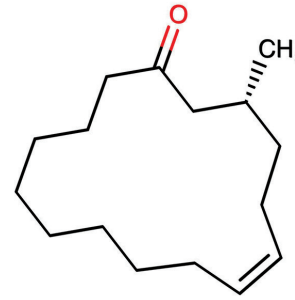


Methyl Cedryl Ketone

Hangzhou Grascent Co., Ltd

www.hangzhougrascent.com

2,6,8-Tetramethyl-9-acetyl-tricyclo[5.3.1.0(1,5)]- undec-8-ene. Methyl cedryl ketone (CAS# 32388-55-9) features a rich woody odor with an amber-musk note. Suggested applications include fine fragrance, personal care, fabric care and home care.



Q-SCENONE

OQEMA

www.oqema.com

Q-SCENONE (CAS# 82356-51-2) is a high-powered musk used in fine fragrances. It enhances at low levels and at higher amounts and adds musky tones to its boosting effect.

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Givaudan Fragrance & Beauty Taps Geraldine Nicolai as Global Head of Fine Fragrances Development

Givaudan Fragrance & Beauty has appointed Geraldine Nicolai to the role of global head of Fine Fragrances Development in addition to her current role as Creative Center director Fine Fragrances North America. In her new responsibilities, Nicolai will lead the Fine Fragrance Development team's creative strategies focused on delivering long-term value to Givaudan's customers and strengthening the business' growth globally.

Nicolai started her career in Givaudan 37 years ago. Since 2012, she has been leading Givaudan's Creative Center in New York, overseeing the Evaluation, Consumer Insights and Laboratories functions. According to Givaudan's release, Nicolai's expertise, passion for fragrance, consumer understanding and leadership have been instrumental in driving the growth of Fine Fragrance in North America during this period. She will continue to be based in New York.

Xavier Renard, global head of Fine Fragrances, said, "It's with great pleasure that we welcome Geraldine into her new role. Geraldine has had great success in leading the Fine Fragrance North America Creative team, and is well-deserving of the position. She brings a wealth of experience and expertise that will fuel our creative & development strategy to deliver breakthrough innovation & excellence across our client portfolio."



Geraldine Nicolai started her career in Givaudan 37 years ago.

Mane Announces Revamped France Fine Fragrance Creative Center Management Structure

Mane has announced its latest management structure within the company's France Fine Fragrance Creative Center.

Pierre Parra has been appointed director of Fine Fragrances France, with over 20 years of experience working for leaders in the luxury and beauty industry such as L'Oreal, LVMH, SHISEIDO and HERMES. He will lead Mane's commercial and category teams, focused on customer-led growth, innovation and preserving family culture.

Stéphane Trillaud has been appointed director of Creation & Development for Fine Fragrances, bringing over 20 years of experience in the fragrance industry with IFF, Symrise and Firmenich. He will head up innovation, laboratories and technical perfumery.



Pierre Parra, director of Fine Fragrances France, Mane.



Stephane Trillaud, director of Creation & Development for Fine Fragrances, Mane.

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Flavour Specialty Ingredients Rebrands to Natara



The company is under new ownership and with a refreshed strategy as a standalone business, the new brand identity is said to better reflect the aspirations for the business. Natara's Hartlepool site pictured above.

Flavour Specialty Ingredients Ltd. (FSI) has rebranded to Natara. The company is under new ownership and with a refreshed strategy as a standalone business, the new brand identity is said to better reflect the aspirations for the business. The new name signals that Natara is "ready to deliver on its ambition for the future, providing a platform for a fresh, distinctive approach that best conveys its customer proposition."

Natara is a $100m global manufacturer of natural and aroma-chemical ingredients with a specialist team of over 350 people around the world. It provides key inputs to the global flavor and fragrance industry, serving around 1000 clients across Europe, Americas and Asia.

Since being acquired by Exponent in August 2023, all branded collateral is in the process of being transferred, and the group's new website is under development and will be found at *www.natara-global.com*.

Yoram Knoop, chief executive officer at Natara, commented: "Our business is opening a new chapter in its history, a milestone we wanted to mark with a new name: Natara. Creating a strong brand identity and developing a new growth strategy demonstrates the momentum we are building as a standalone business. With a brand proposition that is fit for purpose, we are better positioned to meet the evolving needs of our growing customer base, in turn delivering on our vision for the future: to be the leading global independent manufacturer of naturals and aroma chemicals and partner of choice to the flavor & fragrance industry."

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Dior Debuts Bonne Étoile Fragrance Designed for Babies

Baby Dior released its latest addition to the baby skincare and fragrance collection called Bonne Étoile (French for "Lucky Star").

Bonne Étoile is described as a scented water for babies and children from Baby Dior, which is a collaboration between Francis Kurkdjian, Dior Perfume creative director, who composed the fragrance, and Cordélia de Castellane, artistic director of Baby Dior, who designed the decor of the bottles.

Bonne Étoile is said to be suitable for all ages and is to be sprayed on the child's neck or in their room. The water-based perfume was crafted with notes of pear, wild rose and white musks.

Kurkdjian shared, "For Baby Dior, I wanted to create a scented water for little ones that is as simple as they are. A child says 'yes,' says 'no,' 'I like' or 'I don't like.' A formula imposed itself, like an impulse, a smile. I wanted to bypass the inevitable orange blossom that has long been the signature scent of childhood, and find a soothing fragrance in a different formula: a dewy and green pear note, brightened by wild rose, wrapped in soft, cottony, protective musks."

The pastel-colored bottle of Bonne Étoile baby perfume is adorned with a Toile de Jouy pattern that features a fantastical garden of Granville.

p&f+



Baby Dior's collaboration is Francis Kurkdjian, Dior perfume creative director, who composed the fragrance, and Cordélia de Castellane, artistic director of Baby Dior, who designed the bottles.

Argeville Debuts Center in Mumbai, India

Following recent openings in Vietnam and South Africa, Argeville has announced the debut of its center in Mumbai, India within the Bandra Kurla Complex.

This location is designed to assist Argeville's mission to target the fine fragrance as well as the cosmetics industry within the Indian market. The Indian team, supervised by Arnaud Gaudy, a market expert with over ten years of experience in the region, is designed to establish and strengthen with a strong commitment to maintaining a local approach for building long-term relationships with customers in the region.

Argeville plans to continue expansion by introducing new centers in 2024.

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This location is designed to assist Argeville's mission to target the fine fragrance as well as the cosmetics industry within the Indian market.

Azelis Acquires French F&F Distributor BLH



BLH employs 42 staff members and operates a laboratory in the Grasse region, in the southeast of France, serving 400 customers.

Azelis has acquired 100% of the shares of BLH SAS ("BLH"), a distributor of flavors and fragrances focused on the fine perfumery market in France. The acquisition is said to strengthen Azelis' global footprint in flavors & fragrances. The transaction is expected to close in November.

A family-owned business founded in 1983, the company is currently led by Nicolas Bécot, who will stay on during integration, as well as continued development of the business. The company employs 42 staff members and operates a laboratory in the Grasse region, in the southeast of France, serving 400 customers.

Nicolas Bécot, CEO BLH, commented, "Becoming part of the Azelis family is a great opportunity for BLH, as our portfolio is complementary with the expertise in natural essential oils of Azelis. We are both established players in the Grasse region and understand what is required to succeed in this market. Together we will deliver a broad portfolio, deeply rooted expertise, and a dedicated service to customers. In addition, we will benefit from Azelis' strong digital backbone and continuous commitment to sustainability and innovation. I am very much looking forward to becoming a part of Azelis and bringing the teams together."

Benoit Fritz, managing director Azelis France, shared, "We are thrilled with the strategic acquisition of BLH SAS, two years after Quimdis, representing another significant milestone for Azelis in the flavors & fragrances industry. This move strengthens our lateral value chain in the segment, and our presence in France and the EMEA region. Leveraging BLH's historical relationships with key principals, combined with our expertise in natural essential oils, we believe we will deliver innovative solutions to customers, while driving sustained growth in this dynamic market."

IFF Debuts Food & Beverages Co-creation Center in South Korea



The center is said to support beverage, culinary, snack, and dairy manufacturers with greater speed-to-market through insights-led innovation. Courtesy of IFF

On November 9. 2023, IFF announced the opening of its first dedicated food and beverage lab in Gangnam, Seoul, South Korea. The co-creation center is designed to reinforce the company's commitment to Be the Premier Partner.

The center is said to support beverage, culinary, snack, and dairy manufacturers with greater speed-to-market through insights-led innovation. Manufacturers will have access to advanced lab technology, and the expertise and knowledge of IFF's team of food designers. The center features dedicated customer co-creation design spaces and a dairy and beverage ultra-high temperature (UHT) pilot plant for small-scale product pilot testing. It also houses a professional culinary kitchen, where IFF's team will develop savory seasoning solutions for instant noodles, snacks and local sauces.

"This innovation center marks an exciting milestone, showcasing our dedication to pioneering innovation and enhancing accessibility for our valued customers," said Li Yongjing, Ph.D., president, Nourish, Greater Asia, IFF. "As a leader in integrated ingredient and flavor solutions, our strategic approach enables us to co-create food and beverages that resonate with consumers. This investment underscores our commitment to ensuring that our customers can swiftly adapt to the demands of a rapidly growing market and evolving consumer preferences."

dsm-firmenich Announces Habanolide Facility at Production Site in Southwest France

dsm-firmenich announced the upcoming commissioning of a Habanolide facility at its production site in southwest France, said to be operational in January 2024. The state-of-the-art facility is said to significantly increase the production capacity of the perfume ingredient and help meet the rapidly growing demand for sustainable products.

Natara is a $100m global manufacturer of natural and aroma-chemical ingredients with a specialist team of over 350 people around the world. It provides key inputs to the global flavor and fragrance industry, serving around 1000 clients across Europe, Americas and Asia.

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The state-of-the-art facility is said to significantly increase the production capacity of the perfume ingredient and help meet the rapidly growing demand for sustainable products. Courtesy of dsm-firmenich.

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PROFILE:
Senior Perfumer **Lionel Nesbitt**

Lionel Nesbitt connects to share his fragrance journey, project wins, advice for newcomers and what he's looking forward to most about *WPC* 2024 in Geneva.

As we begin to prepare for the return of *World Perfumery Congress* (*WPC*), we connected with Berjé senior perfumer and American Society of Perfumers (ASP) board member Lionel Nesbitt to share his fragrance journey, project wins, advice for newcomers and what he's looking forward to most about *WPC* 2024 in Geneva.

What led you to the fragrance industry?

Lionel Nesbitt [LN]: I started out in the industry at Haarmann and Reimer and kind of stumbled into the job. I have a degree in Biology and had aspirations of attending medical school, but after four years I was kind of fed up with school. I wanted to stay in the sciences so I applied to all the lab jobs that I could until I landed a job to work in the perfumery lab compounding for several perfumers. I went on to work in analytical, production, as well as a few other areas. I learned how I could create unique odor profiles that I came across in the world and duplicate them so others could experience what I had.

What applications do you primarily formulate for?

LN: I formulate for just about any and everything. I have a technical background that has allowed me to understand applications and bases so that I can formulate using the materials that would showcase the most. A large portion of my work is in air care as well as personal care.

Do you have a favorite?

LN: I really like working on anything creative that involves spice notes. Notes of clove, coriander, and cinnamon are great to work with, but I like notes such as black pepper, elemi and pink pepper. If anyone knows me well, they also know that I like to work with juniper as well.

Are there any recent projects/wins you're particularly proud of?

LN: I have worked on a few niche fine fragrances that I have enjoyed. In the past, I have worked with Jean-Claude Delville on a fragrance that was recreated from the Mary Celestia. This was a Civil War blockade runner that carried cargo and supplies in the South. There were several bottles of intact perfume that were found so we were able to recreate what was once formulated centuries ago.



Courtesy of Lionel Nesbitt

Nesbitt shares, "The World Perfumery Congress is a time to meet with old friends and discuss new techniques and ideas that I did not know about."

Advice for people coming into the perfume field or the best piece of advice you've received?

LN: The best form of advice I can give anyone in this field or other fields is to learn as much as you can from everyone. You have no idea what knowledge that you have learned now will do for you in the future. You learn this knowledge by communicating and bonding with people over time making lifelong friendships. There is a passion for perfumery, it's not about what you can benefit from working in the industry but what you can teach and provide to the next generation. Along this journey, you will learn more than can ever be taught to you in a few classes.

What are you looking forward to most about the return of the *World Perfumery Congress*?

LN: As always, I look forward to new products at the *WPC* (essential oils as well as synthetic ingredients). It's a time to meet with old friends and discuss new techniques and ideas that I did not know about. It's also the best time to attend workshops provided by seasoned perfumers.

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In grilled savory flavors, gamma-octalactone really comes into its own. Now 300 ppm is just a starting point.



BY JOHN WRIGHT
johnwrightflavorist@gmail.com

Flavor Bites:

γ-Octalactone in Savory, Berry, Tropical, Orchard, Alcoholic and Other Flavors

Should we really limit ourselves to copying nature? The choice boils down to an entertaining, win-win contest between authenticity and creativity.

γ-Octalactone (FEMA# 2796, CAS# 104-50-7) has a very attractive, soft, creamy coconut character and was featured in the November *Flavorcon* meeting.

Using it in coconut flavors might seem counterintuitive because δ-octalactone, not γ-octalactone, is the driving force behind coconut aroma in nature. That raises the question—should we really limit ourselves to copying nature? The choice boils down to an entertaining, win-win contest between authenticity and creativity. In any case, even if γ-octalactone does not feature in coconuts, a quick glance at the VCF online database shows that it is very widely found in nature.

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Note that the dose rates given throughout this article are the levels suggested for use in flavors intended to be dosed at 0.05% in ready-to-drink beverages or in a simple bouillon.

Savory Flavors

Bacon: γ-Octalactone adds a soft coconut note that can enhance all meat flavors. Fifty ppm is an initial level in bacon flavors.

Beef, Roast: Rather more, around 100 ppm, is better in beef flavors, enhancing the effect of grilled fat.

Chicken: The best level in chicken flavors varies. Fifty ppm is reasonable, but double that level is better in fried chicken flavors.

Grill: Here is where this ingredient really comes into its own. Now 300 ppm is just a starting point.

Ham: γ-Octalactone is only a nice finishing touch in ham flavors, but 20 ppm definitely enhances the profile.

Lamb: Lamb has a pronounced fat character and the ideal level of this ingredient, 100 ppm, reflects this.

Mushrooms, Onions and Potatoes: All cooked vegetables benefit from a trace of γ-octalactone. Levels range from 5 ppm to 15 ppm.

Seafood, Shrimp: γ-Octalactone enhances all seafood flavors at levels of addition in the region of 50 ppm.

Tropical Flavors

Coconut: γ-Octalactone can be very attractive as the main lactone in coconut flavors. Five thousand ppm is an effective level.

Guava: γ-Octalactone softens the impact of γ-decalactone in guava flavors. Levels can vary widely, but 50 ppm is a good starting point.



Pexels image by Tijana Drndarski

γ-Octalactone can be very attractive as the main lactone in coconut flavors. Five thousand ppm is an effective level

Jackfruit: Jackfruit flavors can be quite aggressive. One hundred ppm of γ-Octalactone balances the profile.

Mango: γ-Octalactone provides a very nice counterpoint to the rather harsh skin character of diphenyl oxide, 1,000 ppm is a good starting point.

Papaya: The ideal level of γ-octalactone ranges from 10 ppm to 50 ppm.

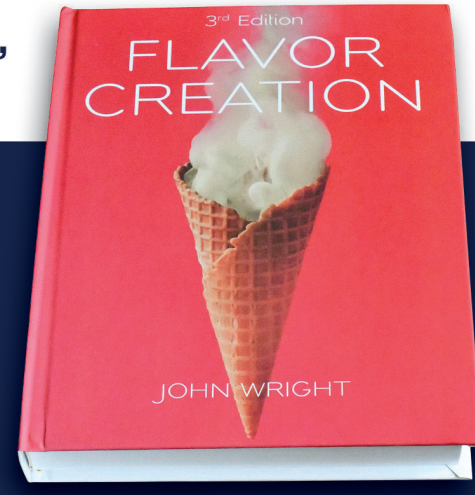
Passionfruit: Passionfruit flavors can benefit from the creamy softness of this raw material at 100 ppm.

Pineapple: Exactly the same comments and levels also apply to all styles of pineapple flavors.

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Berry Fruit Flavors

Blackberry: γ-Octalactone is not the dominant lactone in blackberries, but it rounds out the profile nicely at 80 ppm.

Blackcurrant: Blackcurrant flavors also use this ingredient, but at a lower level around 50 ppm.

Blueberry: Blueberry flavors have an even more subtle lactone note, 20 ppm of γ-octalactone softens the profile.

Cranberry: The same 20 ppm of γ-octalactone is equally effective in cranberry flavors.

Raspberry: γ-Octalactone is very effective when used in combination with δ-octalactone. The balance between the two lactones can be varied but 100 ppm of γ-octalactone is a good starting point.

Strawberry: In strawberry flavors, this lactone is the junior partner to γ decalactone, but 100 ppm also works.

Orchard Fruit Flavors

Apricot: The attractive partnership between γ-decalactone and γ-octalactone reaches its peak in peach and apricot flavors. The level of γ-octalactone can be varied between 50 ppm and 200 ppm in apricot flavors, depending on the effect desired.

Nectarine: Levels can also vary in nectarine flavors, but 200 ppm is also generally effective in this category.

Peach: It is possible to push things a little further in peach flavors. γ-octalactone can be used up to 500 ppm.

Plum: Plum flavors encompass a number of different styles. This ingredient will work in all of them but the levels will vary. Twenty ppm is a good starting point.

Alcoholic Drink Flavors

Brandy: The attraction of γ-octalactone in the spirit flavors is more a question of cost than character. One hundred ppm adds a good impression of cask aging.

Rum, Dark: Two hundred ppm of γ-octalactone rounds out the character of dark rum flavors.

Tequila: γ-Octalactone, added at 10 ppm, gives a modest impression of age to tequila flavors.

Whiskey: This is particularly true for whiskey flavors and a relatively high level, up to 500 ppm is an economical alternative to whiskey lactone.

Wine: Modest levels of γ-octalactone, around 10 ppm, give an impression of cask age to both red and white wine flavors.

Other Flavors

Butter, Fresh: The lactone enhances and softens the character of the dominant δ lactones in all dairy flavors. Two hundred ppm works well in butter flavors



Pexels image by Polina Tankilevitch

γ-Octalactone adds a soft coconut note that can enhance all meat flavors. Fifty ppm is an initial level in bacon flavors.

Cereal: Five hundred ppm is very effective in cereal flavors. Lower levels can also be useful in pizza dough and bread flavors.

Chocolate, Milk: γ-Octalactone enhances the creamy character of milk chocolate flavors at 200 ppm.

Cream, Fresh: Cream flavors are another example of this lactone working very well in conjunction with δ decalactone. Four hundred ppm is a good level of addition.

Hazelnut and Praline: This ingredient rounds out all nut flavors but is particularly effective in hazelnut flavors. Eighty ppm is a good starting point. This translates to 30 ppm and up in praline flavors.

Milk: γ-Octalactone is very effective in both fresh and condensed milk flavors. The levels vary a little but should typically be in the order of 50 ppm to 100 ppm.

Peppermint: Cheap mint oils can be improved by the addition of as little as 10 ppm of γ-octalactone, pushing

the profile away from corn mint and towards peppermint.

Popcorn: Popcorn flavors are enhanced by the extra depth and sweetness of γ-octalactone at levels of addition in the region of 200 ppm.

Raisin: γ-Octalactone adds sweet depth and creaminess to the dried notes of raisin flavors at around 50 ppm.

Vanilla: The creamy character of this lactone is especially well suited to French-style vanilla flavors. Two hundred ppm is a good level of addition. It also works in Bourbon bean-style flavors, but the level of addition is much lower, around 10 ppm.

Walnut: After hazelnut, walnut is the nut flavor category where this ingredient works best. Twenty ppm is a reasonable starting level, counteracting the drier aspects of the profile.

p&f+



Pexels image by Binyamin Mllish

Five hundred ppm of gamma-octalactone is very effective in cereal flavors. Lower levels can also be useful in pizza dough and bread flavors.



FRAGRANCE INDUSTRY SHIFTS TO REPURPOSED INGREDIENTS TO AMPLIFY SUSTAINABILITY

Investigating the latest sustainability initiative burgeoning within the fragrance industry.

BY CASSANDRA BROWNING, Independent Fragrance Consultant, Fragrances for Good Ltd.

Upcycling, Leftovers, Repurposed, Rescued, Second Life, Recycled, Waste–regardless of its name, the latest sustainability initiative burgeoning within the fragrance industry is rejuvenating discarded petals, pods, kernels, peels, and wood.

Repurposed ingredients offer the advantage of reducing environmental impact, minimizing waste, fostering greater value in the supply chain and creating exciting new olfactive experiences for perfumers and consumers alike.

Considering the fragrance industry's annual waste production is estimated at 92 million tons, even redirecting a portion of raw materials away from landfills can yield a substantial impact on environmental commitments.[1]

What is Upcycling?

The term 'upcycling' is credited to the German engineer Reiner Pliz, who in 1994 recognized the need to create a word reflecting the newfound value given to used or recycled items.[2] The 2000s witnessed the term entering broader public consciousness, often in relation to repurposing used clothing or furniture. In essence, upcycling involves adding new value to something that was once deemed valueless or of little worth.

Currently, there is no legal definition for upcycling, with each fragrance house describing its programs and efforts in similar yet compelling ways. Givaudan has been more specific by stating: "We classify an ingredient as upcycled if 50% or more of the carbon it contains originates from upcycled raw materials."[3] In practical terms upcycling, "[…]refers to either post-usage conversion or the use of production residues."[4]

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Upcycling Evolution: Packaging > Formulation > Fragrance

Packaging: Over the past decade, there has been a notable increase in the incorporation of waste materials in consumer goods packaging. The term 'upcycled' wasn't widely used by brands, but customers became familiar with claims concerning the use of xx% post-consumer recycled material. The movement away from using virgin plastic has motivated companies to invest in materials such as upcycled milk caps and other non-plastic components, including durable bottles, which are becoming increasingly popular.

Formulation: Since 2016, we have witnessed a growing trend of formulations embracing upcycling and its associated ingredients. The launch of Upcircle's facial scrub, crafted from repurposed coffee grounds, while not exclusively focused on fragrance, utilized a formulation ingredient with a powerful olfactive profile. The coffee ingredient subsequently became the distinctive signature scent of the product.

Companies dedicated to sourcing upcycled formulation ingredients are highlighting what's available while simultaneously supporting a circular and transparent supply chain. The Upcycled Beauty Company has created a platform and its "[…]portfolio of actives & ingredients are made *entirely* from upcycled plant-based leftovers that are far too good to waste."[5]

Fragrance: Upcycled fragrance ingredients have existed for many years, as Thibaut Madre, Global Fragrance Innovation director at Takasago, explains, "Despite the common belief that we cultivate citrus fruits like oranges, lemons, or limes solely for their essential oils, it's not economically feasible. In reality, these tangy fruits are primarily farmed to extract their refreshing juice. The industrial-scale juicing process inevitably leads to a significant surplus of pressed fruit residues - often referred to as 'skins', it's this so-called waste that harbors the essential oil. Without juice production on a big scale which results in ample availability of these residual skins, we wouldn't have a source sufficient enough for oil extraction. In essence, rather than being considered waste or an unwanted residue from juice manufacturing processes; these leftover citrus fruit skins are viewed more accurately as upcycled raw materials."

However, the active pursuit of new innovative methods to rescue old byproducts truly gained momentum with the introduction of the luxury fragrance 'I Am Trash' by Etat Libre d'Orange (2018). This marked a pivotal moment in the evolution of repurposed ingredients. It became the first product to showcase Apple Oil Orpur[a], a natural apple note, captivating consumers through its compelling branding and campaign, while simultaneously drawing global attention to fragrance upcycling. Developed by Givaudan, it utilized apple puree sourced from the juice industry, combined with rose petals and sandalwood chips distilled for a second time.[6]

We continue to see the trickle-down of upcycled concepts and ingredients to a broader range of mass brands, as consumers grow increasingly comfortable and familiar with the subject.



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Originally, only the peel from the juice/fragrance industry was used in upcycling. However, now the residue from distillation, and even the utilization of the fruit itself, serves as a source of new olfactive molecules.[7]

What Product Categories?

Here are some of the more common categories in which we're seeing upcycling. Please note that the list is not exhaustive:

- Fine Fragrance
- Body Wash
- Body Care
- Dish Soap
- All-Purpose Cleaner
- Toilet Cleaner
- Fabric Conditioner

[a]Apple Oil Orpur is a registered trademark of Givaudan

Common Upcycling Sources

Fragrance and ingredient suppliers are constantly exploring new upcycling sources, but the following are the most common:

- Power Industry
- Juice Industry
- Fragrance Industry
- Paper Industry
- Wood Industry
- Wine Industry
- Sugar Industry
- Chemical Industry

Popular Ingredients to Upcycle

The upcycled ingredients commonly utilized and highlighted on the packaging are those that are simplest to obtain, involve the fewest processing steps, and are the easiest for the consumer to understand.

- Citrus Notes (Orange, Bergamot, Lime, etc.): Originally, only the peel from the juice/fragrance industry was used. However, now the residue from distillation, and even the utilization of the fruit itself, serves as a source of new olfactive molecules.[7]
- Floral Notes (Rose and Jasmine): Suppliers are taking the exhausted petals from the first distillation and doing second extractions.
- Woody Notes (Cedarwood and Oakwood): Both the paper milling and barrel-making processes yield significant amounts of sawdust and offcuts. These byproducts now present a new opportunity for essential oil extraction.[8]



Suppliers are taking the exhausted petals (rose and jasmine being the most popular) from the first distillation and doing second extractions.

Game-Changing Upcycled Ingredients

While all new creations are exciting, the upcycled ingredients that intrigue me the most are those that were previously only available synthetically, especially those derived from fruits and vegetables. These natural notes are now widely accessible, thanks to the use of puree waste from the juice and vegetable industries.

Maxence Moutte, Senior Perfumer at Givaudan reflects, "I was told for years that we were not able to have any natural fruit extracts on the palette because of technical issues, and here they are! This is truly innovative, and as a perfumer, I find it very exciting to be able to play with true-to-life natural fruit facets coming from waste to support my creations!"

Givaudan[9,10]

- Apple Oil Orpur
- Peach Alcoholate Orpur[b]
- Strawberry Alcoholate Orpur[c]

Symrise[11]

- Asparagus
- Cauliflower
- Leek
- Onion

Trends

Continual Creation - New Upcycled Ingredients: Developing innovative upcycled ingredients is a time-consuming and resource-intensive process for fragrance houses. It requires years to devise extraction methods and chemistries for natural ingredient development and creation. Success in this endeavor hinges on transparency and strong vendor relationships.

Given the significant investment involved, fragrance houses are likely to keep many new upcycled ingredients confidential, along with their exclusive methods. Of course, some ingredients will be shared with the wider public for claiming and conceptual purposes.

[b]Peach Alcoholate Orpur is a trademark of Givaudan
[c]Strawberry Alcoholate Orpur is a trademark of Givaudan



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Any sourcing story used should be intuitively understandable, striking a balance between being informative without being overly technical to effectively engaged with the consumer.

This period presents an exhilarating time to work in ingredient development and sourcing, as I anticipate that resources will continue to be dedicated to crafting new and exciting ingredients.

100% Upcycled Fragrances: Not only are we seeing products on shelves claiming one or two upcycled ingredients, but Firmenich has also launched its Circular Collection–"the only collection of 100 percent upcycled fragrances in the market." [12] While not every brand will demand fragrance entirely sourced from upcycled materials, it presents an interesting challenge for perfumers to expand their creative horizons and create fragrance that is compelling to consumers.

Upcycling Challenges

Cost: Embracing upcycled ingredients presents an exciting opportunity, albeit not without its challenges, and among them is the issue of cost. Due to the uniqueness of these ingredients and the associated cost to develop them, they currently command a premium price. Nevertheless, as supply chains mature and the fragrance industry increases its investment, there is a glimmer of hope for a positive shift. With a potential increase in ingredient output, we can perhaps anticipate a gradual decrease in price, making sustainable choices more accessible.

Optics: The aspect of optics also poses a significant challenge, as the idea of waste or upcycled ingredients may not immediately resonate with consumers. There is a genuine concern that such products might evoke negative associations, leading to worries about potentially unpleasant or unappealing smells. To successfully navigate this, it becomes crucial to carefully craft the language surrounding the fragrance, consciously avoiding the use of the term 'waste.'

Greenwashing: Numerous brands are making significant strides in their sustainability initiatives. Still, there are those that engage in greenwashing and fail to bring about substantial changes. For consumers, upcycled ingredients offer a compelling way to discuss a positive environmental impact.

However, when brands incorporate only a single token upcycled ingredient or rebrand existing ingredients as rescued, it's disingenuous to suggest that consumers are making a meaningful impact with their product purchases. As previously discussed, most citrus essential oils are already obtained through upcycling. Thus, these 'conventional' ingredients don't necessarily yield the positive impact one might expect from genuinely new rescued components. Incorporating 'new' ingredients that support emerging supply chains and innovative sourcing methods holds much greater significance in the fight to reduce our environmental impact.

Storytelling: The utilization of ingredients sourced from waste often involves intricate processes, which can be challenging for consumers to fully comprehend. Explaining the journey from a pine tree to a vanilla fragrance lacks a clear and direct correlation, adding complexity to understanding the sustainable processes involved.[13] As a result, brands such as Palmolive Up Body Wash or Ecover's Too Good to Waste Multi-Surface Cleaner have found it easier to develop storytelling around ingredients with a clear correlation, like obtaining an apple fragrance from apple puree waste.

Any sourcing story used should be intuitively understandable, striking a balance between being informative without being overly technical. By doing so, we can effectively engage consumers and ensure they embrace the innovation and sustainability of these products without any hesitation or doubt. Ultimately, it's about presenting these concepts in a way that captivates and inspires, fostering a positive connection between consumers and the notion of upcycled ingredients.

Environmental Impact: Like any ingredient, it's important to keep in mind that the use of any essential oil has environmental consequences. The burden is significant due to the substantial quantities of plants required for oil production, the demand surpassing supply, the utilization of land and water, and the environmental footprint of transportation miles.

This isn't to suggest that we shouldn't use essential oils or their upcycled by-products, but we should be mindful that every choice we make has ramifications. Maintaining a balanced approach between synthetics and natural ingredients while investing in biotechnology will be crucial as climate change continues to advance and our ecosystems evolve. Engaging the public in understanding biotechnology, lab-grown ingredients, and technological processes will hopefully lead to positive outcomes as we strive to find a balance in the ingredients we incorporate within fragrance design.

The Future of Upcycling

In terms of fragrance creation, the practice of upcycling natural ingredients is here to stay. Finding new fragrance components that have distinctive olfactive characteristics offers fragrance suppliers a competitive edge while helping them achieve their sustainability goals.

Plastic Pollution: The future of upcycling lies in transforming abundant resources that pose problems for the planet into sources of new value. Notably, intriguing research is underway at the University of Edinburgh concerning plastic pollution. Scientists have engineered the E.coli bacteria to convert polyethylene terephthalate (PET plastic) into vanillin.[14] This breakthrough has the potential to revolutionize the circular economy by



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Companies dedicated to sourcing upcycled formulation ingredients are highlighting what's available while simultaneously supporting a circular and transparent supply chain.

converting pure waste into valuable new ingredients. This approach presents an alternative to using naturals as the foundation for upcycled components, showcasing the potential for plastic to become a novel carbon resource that yields valuable upcycled ingredients.

Carbon Capture: At the forefront of upcycling, carbon capture is the next frontier in formulation sustainability. "A bioreactor collects those emissions rather than dumping them into the atmosphere; bacteria eat the pollution and turn it into alcohol[…]."[15] In 2023, Coty introduced a groundbreaking achievement by launching the fragrance "Where My Heart Beats," a new addition to Gucci's The Alchemist's Garden collection.[16] This fragrance is a significant milestone as the first globally distributed scent crafted with 100% carbon-captured alcohol.

Like the process of transforming plastic into valuable commodities, the pursuit of generating fresh value from plentiful resources like carbon will remain a crucial pathway in the battle against climate change.

Conclusion

As the marketing trend of upcycling fades, its advantages will persist, offering a greater chance to prioritize sustainability in the industry and amplify value throughout the supply chain. From a creative perspective, this is an exciting time as the upcycled ingredient sector is at the forefront of the next wave of innovation.

Perfumers will have the opportunity to work with olfactive notes previously unexplored, amplifying creativity and expanding scent possibilities for consumers. With "65% of consumers saying they want more environmentally responsible scents," according to fragrance company Firmenich, the industry is taking note and significantly changing how it operates.

As with everything, it's a matter of striking a balance–avoiding excessive strain on the natural world through essential oils and upcycled ingredients, while also preventing an over-reliance solely on petrochemical-based synthetics. Thoughtful decision-making and mindful perfumery are principles that should continue long into the future, regardless of the ingredients.

References

1. Ollennu, A. (2022, November 3). *Smells like green spirit: Why upcycled perfumes are the new fragrance trend*. Metro. https://metro.co.uk/2022/11/03/smells-like-green-spirit-why-upcycled-perfume-is-the-new-scent-trend-17686458/
2. Aguileta de la Garza, F. (n.d.). *What exactly is an upcycling collection and why are brands doing it?* Elle Education. Retrieved August 22, 2023, from https://elle.education/en/business/what-exactly-is-an-upcycling-collection-and-why-are-brands-doing-it/
3. *From leftovers to luxury: Pioneering upcycling in fragrances*. (2023). Givaudan. https://www.givaudan.com/fragrance-beauty/pioneering-upcycling-in-fragrances
4. Goldfarb, S. (2021, July 30). *Upcycling – the art of recycling plant matter*. Blue Skincare. https://blog.blue-skincare.com/en/clean-beauty/upcycling/
5. *Full Circle*. (2023). Upcycled Beauty Company. https://www.upcycledbeauty.com/
6. Igneri, J. (2021, April 28). *Are upcycled fragrances the next big trend in sustainable beauty?* The Zone Report. https://www.thezoereport.com/beauty/upcycled-fragrances-sustainable-beauty
7. Givaudan Perfume. (2019, February 5). *For the love of Bergamot, our perfumery school students visited the beautiful citrus fields in Italy. They also discovered the* (Image attached) (Post). Facebook.
8. International Flavors and Fragrances. (2020, October 6). *LMR Naturals by IFF: Oakwood France* (Video). YouTube. https://www.youtube.com/watch?v=XDq15EJnJPQ
9. Givaudan Perfume. (2021, June 2). *Our perfumers are excited about New Peach Alcoholate Orpur™, our latest, strategy-aligned ingredient created by upcycling juice side streams and* (Image attached) (Post). Facebook. https://www.facebook.com/givaudanperfume/posts/our-perfumers-are-excited-about-new-peach-alcoholate-orpur-our-latest-strategy-a/1592064534325597/?locale=cs_CZ
10. Givaudan. (2023, August 3). *Discover Strawberry Alcoholate Orpur™, Givaudan latest upcycled fragrance ingredient! Watch the video in which Perfumer* *Marypierre Julien* *and Natural Fragrance* (Image attached) (Post). LinkedIn. https://www.linkedin.com/feed/update/urn:li:activity:7091743491336069121/
11. *The new frontiers of naturals: Garden Lab collection enriches fine fragrances palette with five natural veggie ingredients*. (2020, December 14). Symrise. https://www.symrise.com/newsroom/article/the-new-frontiers-of-naturals-garden-lab-collection-enriches-fine-fragrances-palette-with-five-natu/
12. *Introducing Firmenich's new circular fragrance collection*. (2023). Firmenich. https://www.firmenich.com/fragrance/blog-article/scents-and-sustainability
13. *Researchers develop a sustainable method for extracting vanillin from wood processing waste*. (2020, June 3). Universitaet Mainz. https://phys.org/news/2020-06-sustainable-method-vanillin-wood.html
14. *Bacteria serves tasty solution to plastic crisis*. (2021, June 10). The University of Edinburgh. https://www.ed.ac.uk/news/2021/bacteria-serves-tasty-solution-to-plastic-crisis
15. Embleton, F. (2021, July 28). *Slow scent - Upcycled fragrances are the new movement in sustainable perfume*. Elle. https://www.elle.com/uk/beauty/a37113371/upcycled-perfume/
16. *Coty launches world's first globally distributed fragrance manufactured using 100% carbon-captured alcohol: Gucci, The Alchemist's Garden, Where My Heart Beats Eau de Parfum*. (2023, April 3). Coty. https://www.coty.com/news/coty-launches-worlds-first-globally-distributed-fragrance-manufactured-using-100-carbon-captured-alcohol

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How Sugar Reduction Can Meet Consumer Needs, Regulatory Issues and Formulation Challenges

Tailored solutions can enhance the overall product experience in terms of sweetness and mouthfeel while reducing sugar content.

BY JEN LYONS, Marketing Manager, Sensient Flavors & Extracts



Jen Lyons, Marketing Manager, Sensient Flavors & Extracts

It's a decades-old problem that's not going anywhere—at least not while there are diet books and programs to sell. Consumers want to live a healthier lifestyle, so they want low-sugar foods that also taste great. Further complicating matters, government regulations around sugar and sugar substitutes can create challenges for product developers.

What do consumers want?

Consumers want reduced-sugar products due to health concerns and a desire for a healthier lifestyle, with eight in 10 saying they are intentionally avoiding[a] or reducing sugar in their diets. This trend is likely influenced by their health care providers, along with the massive amounts of "anti-sugar" information displayed across media and social networks. The reasoning is simple: Excess sugary foods and beverages can lead to weight gain, blood sugar problems and an increased risk of heart disease, among other dangerous conditions, so health care providers often encourage patients to limit their sugar intake.

Then there are the latest diet trends that focus on sugar reduction, like Keto, Mediterranean and overall "clean eating." Regardless of diet fads, sugar intake is often a pivotal component of any healthy lifestyle. In fact, "low in sugar" ranked second[b], following "fresh" when consumers were asked to define healthy food. Additionally, 55% of consumers stated they "always/often" pay attention to labels[c] when grocery shopping, with sugar content being a primary driver.

So far, so good. Now comes the hard part. Consumers want to ditch sugar, but they love what sugar does for their favorite foods and beverages. When they decide to indulge in something like ice cream, they recognize that a considerable amount of sugar will be consumed—but they are unwilling to give up the deliciousness they want. In some cases, they may eat a smaller amount to reduce their sugar intake but still have the enjoyment of the full-sugar treat. More likely, they want a lower- or no-sugar alternative. Reduced sugar also may be more of a priority with something like a beverage or salad dressing that is consumed regularly.

[a]Sensient Proprietary Research
[b]IFIC 2023 Food & Health Report, Perspectives on Health and Nutrition
[c]IFIC 2023 Food & Health Report, Purchase Drivers and Shopping Patterns

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When consumers decide to indulge in something like ice cream, they recognize that a considerable amount of sugar will be consumed—but they are unwilling to give up the deliciousness they want.



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Fifty-five percent of consumers stated they "always/often" pay attention to labels when grocery shopping, with sugar content being a primary driver.

What is the government's role?

Government agencies and health organizations have been pushing for sugar reduction to address rising health concerns related to excessive sugar consumption. Governments and regulatory bodies have taken various approaches, such as:

- Implementing sugar taxes on sugary beverages and snacks.
- Introducing food labeling regulations to inform consumers about sugar content.
- Promoting public awareness campaigns to educate people about the health risks associated with high sugar intake.

This push for sugar reduction is driven by concerns over increasing rates of obesity, diabetes and other diet-related issues worldwide, and the resulting strain on public health resources. The aims are improving the general state of public health and reducing the burden of chronic diseases associated with excessive sugar consumption by encouraging people to consume less sugar and opt for healthier choices. However, the extent and specific strategies, as well as the success, in reducing sugar intake vary from country to country depending on individual policies and public health priorities.

Because sugar plays essential roles beyond sweetness, including flavor enhancement, texture and mouthfeel, working closely with an experienced flavor partner helps speed up the development cycle.

Many sugar-reduction initiatives are voluntary, but health organizations continue to push for formal initiatives to reduce sugar. Consumers will also continue to demand solutions that meet their criteria. At Sensient, we see the current landscape as a critical window to adopt alternatives to sugar to stay ahead of changing desires and regulations—the driving forces for change in this area. We also are eager to see how sugar alternatives will improve to further address sugar's functional aspects, including its role in baked goods.

Where do manufacturers fit into the puzzle?

Food and beverage producers have been responding to the sugar-reduction movement for some time.

The global reduced-sugar food and beverages market[d] is expected to post a compound annual growth rate (CAGR) of 8.9% from 2022 to 2030.

Some manufacturers have introduced full new lines of low-sugar or no-sugar products, while others have focused on reformulating their existing products. Both approaches come with challenges, but often starting fresh can eliminate some of the difficulties with matching taste and mouthfeel that come with reformulating existing products.

Tailored solutions can enhance the overall product experience in terms of sweetness and mouthfeel while reducing sugar content.

It's a safe bet that innovation around sugar reduction will continue, because consumers will continue to educate themselves and strive for a healthier lifestyle—and because governments and health organizations will continue pushing reduced sugar initiatives. That's because, when all is said and done, taste is the driving factor in food and beverage choices!

[d]*https://www.grandviewresearch.com/industry-analysis/reduced-sugar-food-beverages-market-report*



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Consumers want reduced-sugar products due to health concerns and a desire for a healthier lifestyle, with eight in 10 saying they are intentionally avoiding or reducing sugar in their diets.



FRAGRANCE INDUSTRY FURTHER INVESTS IN WELLNESS

Discover the latest research ventures, launches and technologies.



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Iberchem introduced its latest neuroscientific investigation program, Wavemotion, designed to scientifically evaluate the impact of fragrance on human psychology and physiology.

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The fragrance industry is continuing to seriously invest in programs to create innovative ingredients and product launches that are designed to have the power to enhance a consumer's well-being. Many of these solutions are based on in-depth neuroscience research. For instance, Givaudan has created a trio of portfolios including DreamScentz (to enhance sleep quality), MoodScentz (mood-lifting) and VivaScentz (to enhance well-being). IFF debuted its Science of Wellness program to address consumer desires for a more holistic approach, designed to guide the creation of scents that support science-based consumer well-being, with emotional, cognitive and physical benefits. Below are the most recent developments marrying the fragrance and wellness spaces.

Research

Iberchem introduced its latest neuroscientific investigation program, Wavemotion, in May 2023. Designed to scientifically evaluate the impact of fragrance on human psychology and physiology, Wavemotion will unveil insights into how scent can influence positive neural responses to transform the emotional landscape of consumers and elevate consumer well-being. Utilizing multi-dimensional neuroscientific techniques and physiological practices, Wavemotion will explore the processing of odor signals within interconnected structures of the brain.

Neuroscientific specialist Michael White, New Technologies director at Iberchem shared, "Wavemotion will bring a new dimension to the world of fragrance innovation. Understanding the functional connectivity and physiological correlates of emotion upon fragrance exposure will reveal [an] unprecedented opportunity for the expansion of Iberchem's fragrance portfolio."

Investment

The Estée Lauder Companies' New Incubation Ventures group has made a minority investment in Vyrao. The investment will enable new product innovations in neurologically backed ingredients, additional wellness formulations beyond scent, and escalating creative campaigns and further geographic expansion.

Yasmin Sewell, Vyrao's founder, said, "To have Estée Lauder's belief and guidance is a huge honor. Estée Lauder invests in and owns some of the world's greatest brands. They are excited to join us on our journey to define what emotional well-being and healing look like today and in the future."

Shana Randhava, senior vice president, New Incubation Ventures, said that Sewell's "ability to reimagine the convergence of luxury, wellness and fragrance is expanding our understanding of the functional benefits of the category. We're excited to join her on the journey of defining what health and well-being look like as it relates to today's consumer's connection with beauty."

Launches

In November 2023, following years of research, IFF in collaboration with SleepScore Labs and Mattress Firm announced the launch of Sleepy's Scented Pillow Inserts.

The insert is designed to be a non-invasive solution that promotes sleep quality, made of 70% repurposed cotton, to be inserted between the pillow and the pillowcase, to be changed weekly, with each box containing a three-month supply.



In November 2023, following years of research, IFF in collaboration with SleepScore Labs and Mattress Firm announced the launch of Sleepy's Scented Pillow Inserts.



Unlocking the Mind: The Science and Creativity of Olfaction and Memory created a short film from a West Sussex care home where residents living with dementia have been trialing a scent-related memory game, with extremely positive results.

"This three-way collaboration with SleepScore Labs and Mattress Firm allows us to reach millions of consumers nationwide," said Simon Herriott, IFF's Health & Biosciences and Scent president. "Sleepy's Scented Pillow Inserts are a breakthrough product, which takes scent beyond hedonics, with demonstrated benefit on overall sleep quality, combining science and creativity. It has the potential to revolutionize the way consumers experience sleep, and we are excited about the positive impact a scented product can have on so many people's lives."

Beginning in 2020, it is said that IFF and SleepScore Labs conducted more than 130 separate scientific studies covering more than one million sleep hours. The studies used advanced sleep monitoring technology, which took measurements—such as respiratory and actimetry among others—every 30 seconds of more than 4,000 people sleeping in their own homes. This research is said to have led to the identification of scent combinations to promote better sleep quality, labeled as MetaSleep.

Another launch that was developed from partnered research was revealed at the International Fragrance Association United Kingdon (IFRA UK) Annual Fragrance Forum in 2023 titled Unlocking the Mind: The Science and Creativity of Olfaction and Memory. The program premiered a short film from a West Sussex care home where residents living with dementia have been trialing a scent-related memory game, with extremely positive results. The five-minute film showed residents from Meadowcroft Care Home in Shoreham-by-Sea playing Smell & Tell, a mood-boosting board and memory game created by the Givaudan Foundation. The game is said to use familiar fragrances such as coffee, pine and chocolate to evoke memories and spark conversations of those taking part.

Lisa Hipgrave, Director of IFRA UK shared, "Almost one million people in the UK have dementia and this is set to increase to over 1.6 million by 2050. We know that our sense of smell can be affected by dementia, and that losing our sense of smell can be isolating and negatively impact our well-being. It's amazing to see the power of our sense of smell and how certain scents trigger memories that haven't been thought of for decades. The ongoing research by leading academics [..] and hands-on games like Givaudan's Smell and Tell, are hugely important in ensuring that our sense of smell remains at the forefront of science and fragrance."

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dsm-firmenich Creates Fragrance Inspired by PANTONE'S 2024 COLOR OF THE YEAR



courtesy of n dsm-firmenich

Pantone has announced its 2024 Color of the Year to be Peach Fuzz — a light, fruity tone that conjures peace and serenity.

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courtesy of n dsm-firmenich

The scent is said to convey pure and positive feelings through innovative ingredients such as dsm-firmenich's Peach Fuzz Smell-The-Taste, captive Osmantol and Ambrette Firabs, each note within the fragrance is designed to deliver emotion and texture to the composition.

Pantone has announced its 2024 Color of the Year to be Peach Fuzz — a light, fruity tone that conjures peace and serenity. dsm-firmenich collaborated with Pantone to create a fragrance to accompany the Color of the Year utilizing trademark fragrance technology EmotiOn.

P&F+ connected with vice president of Marketing Global Scent Reporting at dsm-firmenich Lauren Rooney to discuss the details behind the selected color and fragrance companion, Peach Fuzz eau de parfum for 2024.

Can you share some details behind how the Pantone Color of the Year for 2024 was selected?

Lauren Rooney [LR]: Pantone, which is a provider of professional color language standards and digital solutions, has selected the Color of the Year for 20+ years by analyzing socio-cultural shifts, trends and influences across a wide range of lifestyle areas including the entertainment industry, art, fashion, design, and travel destinations. Leatrice Eiseman (executive director of the Pantone Color Institute) leads the Color of the Year Campaign. To select Color of the Year, she travels the world meeting with many experts, designers and forecasters to understand what consumers will want to buy in the coming years.

What anticipated or growing trends informed this color choice?

LR: This color reflects the yearning that people have for connection, a sense of community and care amidst a world that can often times feel isolating, dark and hard. Peach fuzz conveys a sense of sensoriality, tenderness and wellbeing, while still presenting elements of play and comfort—all attributes which are increasingly important to consumers.

How can the fragrance industry best benefit from the Pantone 2024 Color of the Year?

LR: The fragrance industry can best benefit from this Year's Color of the Year by tapping into the emotional connection between the fragrance and the color. At dsm-firmenich, our perfumers created Peach Fuzz EDP using EmotiOn, a breakthrough program to create powerful, emotionally driven fragrance solutions. The industry can also benefit from looking at peach through new and more innovative olfactive avenues to widen the spectrum of possibilities that peach has to offer. By exploring and amplifying the many facets of the peach, we can bring new life to this well loved note.

Can you share what types of launches might be influenced by the color?

LR: Peach is a powerful color and a scent that resonates across categories, price points and geographies. Thus, there is a spectrum of peach that gives many opportunities to brands to play with—ranging from mass to luxury and from candles to fragrance to body care.

Is there a fragrance launch by dsm-Firmenich that encapsulates this color? If so, what are the notes and who were the perfumers behind it?

LR: Yes! dsm-firmenich's Peach Fuzz Eau de Parfum is inspired by this year's color. Our perfumers Alexandra Monet and Steve Guo aimed to create a universally loved, touchable solar peach fragrance with a skin sensation. By conveying pure and positive feelings through innovative ingredients such as our Peach Fuzz Smell-The-Taste, captive Osmantol and Ambrette Firabs, each note within the fragrance is designed to deliver emotion and texture to the composition—an invitation to feel good!

Michael Edwards Joins *World Perfumery Congress* 2024 Speaker Roster

Fragrance expert and author set to take the stage to discuss iconic scents and their influence.



Fragrance expert and author, Michael Edwards, is set to take the stage to discuss iconic American fragrances and their influence.

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The *World Perfumery Congress (WPC)*—presented by the American Society of Perfumers and produced by Allured Business Media — is gearing up for the event's return this summer in Geneva, Switzerland! We're excited to announce that fragrance expert, taxonomist and author Michael Edwards to the stage for his session, "**The Evolution of American Fragrances**."

American Legends is the long-awaited companion to *Perfume Legends*, the cult book in which French perfumers spoke openly for the first time about their work and the sources of their inspiration. "There is no book like it," stated Edmond Roudnitska.

Now, in *American Legends*, Michael Edwards documents the evolution, the richness and the sheer originality of American fragrances from Elizabeth Arden's Blue Grass (1934) to Le Labo's Santal 33 (2011). "It is a love story," writes Leonard Lauder in his foreword.

In his presentation, Edwards will talk about the making of *American Legends* and the perfumers, visionaries and designers whom he interviewed. The result is living history, told through the words of the creators behind 40 legendary American perfumes.

>>>Register today for early bird rates!<<<

In 1983, Edwards founded Fragrances of the World, the largest guide to perfume classification that has ever existed. The Fragrance Wheel explains the relationship between innate fragrance preferences and the fragrance families which is updated daily by Edwards and his team of evaluators, the database contains product information on over 36,000 fragrances from around the world, complete with a reference book titled, Fragrances of the World.

The *WPC* 2024 speaker is also well-known for his books, including *Perfume Legends* which was first published in 1996 and is said to be one of the most significant books written on modern perfumery as creators, perfumers, couturiers, bottle designers and fragrance house executives spoke openly about their fragrances. The book was revised and updated in 2019, *Perfume Legends II* presenting new research, images and eight new legends.

In the December 2023 issue, we shared that Pura co-founder and CEO Bruno Lima is set to join the chief fragrance experience officer Mara Dumski to discuss the company's journey, key partnerships as well as nuances of formulating for the smart diffuser. Other topics to explore the theme **Fragrance Forward: Where Global Innovation & Creativity Meet** include:



Michael Edwards

- The Perfumer's Take on Artificial Intelligence Panel
- Understanding The Supply Chain of Natural Ingredients Roundtable
- The Role & Value of Influencers in Fragrance
- Consumer Wellness Fragrance & Beauty Trends
- The Current State of Fragrance
- Trend Forecasts & Innovations in Home Care Scents
- Regulatory Stewardship
- ... and more to be announced!

Click above to listen to this exclusive podcast.

In addition, the event will feature a bustling expo hall featuring unique fragrance ingredients from every corner of the globe, as well as the latest scent technology innovations. Interested in exhibiting? Contact Paige Crist (pcrist@allured.com).

Early Bird Registration

Scheduled for June 24-27 at Palexpo in Geneva, Switzerland, the event hosts an expo hall, networking opportunities and conference sessions. *WPC* is the global stage for fragrance creativity, ingredients, technology and business—providing the ideal forum for discussing the industry's latest issues and breakthroughs.

Early bird rates are now available for the three-day conference for $1,250, rates varying depending on the professional category. Attendees can also snag tickets for chosen days of the conference. More details can be found on the registration page[a].

Students are encouraged to attend the event and may qualify for a discounted rate. Please email a copy of your valid student ID or unofficial transcript from an accredited fragrance institution to wpc@allured.com to receive your discount code. Please allow 24 hours to respond.

[a]*https://abm-dl.s3.amazonaws.com/WPC/2024/Registration/WPC%202024%20Registration%20Pricing.pdf*





WPC

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PRODUCED BY Allured business media

FLAVORCON 2023
FINAL THOUGHTS EVENT RECAP



Photo credit: Peter Wynn Thompson

The Flavorist Master Class hosted over 70 attendees, hosted by Cyndie Lipka and John Wright on November 7.

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That's a wrap on Flavorcon 2023! This year's event hosted just under 300 attendees who were hungry to gain insights from trending markets to applications to the intricacies of labeling. I wanted to thank our exhibitors who showcased the latest ingredients, technology and equipment in the flavor industry as well as our sponsors, the event would not have been a success without your support of education.

Want to review speaker slides? Login to the *Flavorcon* 2023 app and visit the Conference Sessions tab, select your desired session and scroll to the bottom of the page and select the title. You can also contact each speaker through the *Flavorcon* app.

Flavorcon 2024

As we begin to plan for 2024 travels, be sure to mark your calendar for *Flavorcon* which is set to return to Atlantic City, New Jersey! The two-day event is scheduled for October 8-9, 2024. Be sure to come a day early (October 7) for a pre-*Flavorcon* seminar to kick off the flavor event of the year.

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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. British Society of Flavourists, Society of Flavor Chemists and Women in Flavor and Fragrance Commerce receive a special rate to attend!

Flavorcon also boasts an expo hall packed with the latest ingredients, technologies, equipment and services the flavor industry has to offer. Want to showcase your company's offerings or sponsor an aspect of the event? Contact Paige Crist (pcrist@allured.com).



Photo credit: Peter Wynn Thompson

On the hunt for speaker Alex Woo's slides on NeuroFoodScience? Login to the Flavorcon 2023 app and visit the Conference Sessions tab, select your desired session and scroll to the bottom of the page and select the title.



Photo credit: Peter Wynn Thompson

Want to see an expert take the stage? Email jtroyli@allured.com.



Photo credit: Peter Wynn Thompson

Flavorcon 2023 Master Class moderator and Flavor Reports columnist Cyndie Lipka.



BY CYNDIE LIPKA
Principal flavorist,
Bell Flavors and Fragrances

Flavor Reports *Flavorcon* 2023 Master Class Edition

The impressions that we have gathered are from the attendees at the Master Class.

So, I am making a bit of a left turn here and reporting to you all from *Flavorcon* 2023. The impressions that we have gathered are from the attendees at the Master Class.

Petitgrain oil, organic

Source: OQEMA
FEMA# N/A, CAS# 72968-50-4
Odor @ 1%: Dry, woody, floral, green, 'astringent', fresh, herbal, orange tree, similar to bergamot, terpenic, very bright, crisp, spicy, seedy, reminds us of baklava made with orange blossom honey. Bell pepper note under the floral.
Taste @ 1ppm: Floral, dry, woody, slightly astringent, black or Earl Grey tea, bell pepper, "carbonation".

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Usages: This would be very interesting as a point of differentiation in a bell pepper for special brightness. This panel found that this would work nicely in bitters like Campari. They also found uses in yuzu, grapefruit, prickly pear, apricot, peach, plum and pear for the crisp skin note. We also thought of lemongrass, cola, sarsaparilla, ginger ale, and for one of my favorites: gin. If we think of more unusual profiles, we find this might be great in aloe, cactus and prickly pear. And lastly, reigning it back in to the more ordinary, I think we could make a beautifully differentiated orange profile but just add a touch!

Phellandrene, ex. Dives

Source: Berjé

FEMA# 2856, CAS# 4221-98-1, 99-83-2

Naturally occurring: Apricot, black currant, nutmeg, schinus mole, capsicum, caraway, cardamom, carrot, celery, Gruyere, cinnamon, citrus, coriander, cumin, curry, date, dill, eucalyptus, fennel, gin, ginger, honey, hops, laurel, lychee, lovage, mace, peppermint, pennyroyal, spearmint, mushroom, nectarine, nutmeg, oregano, papaya, parsley, passionfruit, pecan, black pepper, pistachio, pomegranate, pork, rosemary, sage, strawberry, tea, thyme, tomato, marjoram, white wine.

Odor @ 1%: Green, zesty, fresh, bright, bitters, camphoraceous, cherry, black pepper, slightly sweet, lemon, lime, key lime, mint, woody, nutmeg, coriander.

Taste @ 3 ppm: Lime, curry, lemon, terpenic, warm, fresh, spicy, woody, nutmeg, coriander.

Possible applications: I have to admit that Berje' got me here on the source of this material. I was not familiar with eucalyptus dives. So, now I know that this is a tree endemic to southeast Australia commonly referred to as broad-leaved peppermint or blue peppermint. But, note that it's a tree and not like *mentha piperita* here in the United States. So, this panel liked this for lime, orange, lemon (lemon curd), cardamon, mango, guava, passionfruit, cola, mojito, sage, thyme, curry, Thai basil, where it is a bit more spicy and has a little more bite. And don't forget about that extended list of where found!



Photo credit: Peter Wynn Thompson



Photo credit: Peter Wynn Thompson

Phenethyl acetate, natural

Source: Avant
FEMA# 2857, CAS# 103-45-7
Naturally occurring: Apple, banana, beer, black currant, blue cheese, bread dough, cheddar, camembert, Gruyere, mozzarella, cherry, cinnamon, cloves, cocoa, date, fig, grape, guava, honey, lychee, malt, muskmelon, papaya, pear, pineapple, plum, pomegranate, olive, passionfruit, rooibos, sake, sherry, starfruit, strawberry, tea, tequila, tomato, vanilla, whiskey, wheat bread, wine.
Odor @ 1%: Floral, green, sweet, slightly fatty, mushroom, honey, powdery, berry, talcum-like, fermented, yeasty and licorice on dry out.
Taste @ 2 ppm: Pulpy, floral, sweet, green, berry, actual petals.
Possible applications: This is a really lovely clean source of phenethyl acetate. The panel thought that this would work well in beer, sherry sweet wines and champagne profiles. Thinking of fruits, we thought of peach, plum, cherry, all berries, lychee and adult grape profiles. Please also include honeydew, cantaloupe, and watermelon for your consideration. I think that this would be extra in a Kiwi profile to help cut the harsh green notes. There was a call out for mangosteen because it's floral, sweet and nectar-like. We also thought of fun things like petal notes with some mentions of elderflower. We can't forget the typical places where this is used like honey, chocolate and fermented things, bread, yeast, and a call out for saltwater taffy! One panelist thought of coffee bean top-notes and there were a few calls for seared beef and button mushrooms.

Pyrazine Mix #10, natural

Source: Excellentia
FEMA# N/A, CAS# N/A
Odor @ 1%: Nutty, dry, brown, soft, hazelnut, raw bean sprouts, chocolate, creamy (macadamia), peanut butter, baked potato jacket, sweet yam, and cognac, oily and then seafood (crustacean) on the dry out.
Taste @ 3ppm: Toasted, brown, soft, nutty, oily.
Possible applications: The panel found this to be useful in chocolate, cocoa, peanut butter, Nutella, pie

crust, graham crackers, coffee, toffee, bread flavors, and seared beef. One panelist thought this would work very well in high-malt beer. I am a big fan of pyrazines as a family of compounds and find most of them to be just beautiful! I think this particular blend would work very well in bakery, cereal, pretzel, or toast notes. If I think of browned butter, I also come to caramel, butterscotch and toffee. This is great for so many nuts like cashew, pecan, peanut, hazelnut. I'd be tempted to add to give jammy notes at super low levels. I'd play with this in crab profiles as well in a heartbeat.

2-(*trans*-2-pentenyl)cyclopentanone

Source: Bedoukian
FEMA# 4284, CAS# 51608-18-5
Not naturally occurring.
Odor @ 1%: Creamy, green, slight licorice, floral, blue cheese leather.
Taste @ 1 ppm: Creamy, dairy, eggy, fatty, lactonic, melon, condensed milk, celery, green, slightly floral, vegetative, rhubarb, cooked mushroom, cooked milk, coconut, and blue cheese. On the dry out, one panelist found beanie flavor.
Possible applications: So, this fun compound is called Jasminone B by Bedoukian. As you can see, this carries some creamy notes and some green notes that would lend it to a variety of profiles. If I wander through the creamy aspects of this I think of whipped cream, ice cream, butter, milk, cooked milk, coconut, custard, cheesecake and also egg flavors. The panel also liked this for rhubarb, mushroom, celery, veggies and Parmesan and blue cheese. I also see a caraway seed note and would try in rye bread and maybe also a chicken profile. Maybe spearmint as well. One panelist noted that this is as if a ketone and lactone had a synthetic baby!

4,5-dimethyl-2-isobutyl thiazole

Source: Millipore Sigma
FEMA# 4647, CAS# 53498-32-1
Naturally occurring: Red beans, sheep liver, boiled potatoes, French fries, shrimp.
Odor @ 0.1%: Dark, leafy, woody, spicy, botanical, cooked vegetables, floral, rubbery, spicy, jalapeno, black currant, peppery, and more thiazole on the dry-out.
Taste @ 0.1 ppm: Slightly astringent, vegetative, leafy, woody, botanical.
Possible applications: Millipore Sigma calls this compound geranium thiazole. I have not had many (or any) sheep liver requests but if I did I would use this. But it's also a good thing that we thought of several other applications here. This compound is firmly entrenched in the savory category. The panel thought of black currant, black pepper, celery, dill pickle, red and black beans, tamale, roast corn, potatoes, rosemary, savory, cooked vegetables such as broccoli, Thai and jalapeno peppers, and potentially peanut.

I hope you enjoyed this slightly different take on the Flavor Report!

p&f+



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- FLAVIS 9.643 METHYL GERANATE
- FLAVIS 13.132 FURFURYL HEXANOATE
- FLAVIS 13.17 L-ROSE OXIDE
- FEMA 2144 BENZYL ETHYL ETHER
- FEMA 2251 CARVEOL PROPIONATE
- FEMA 2298 CINNAMYL CINNAMATE
- FEMA 2366 TRANS-2-DECENAL
- FEMA 2374 DIETHYL MALATE
- FEMA 2431 ETHYL CYCLOHEXANE PROPIONATE
- FEMA 2495 FURFURYLIDENE ACETONE
- FEMA 2535 GUAIACOL PHENYL ACETATE
- FEMA 2706 2-METHYL HEPTANOIC ACID
- FEMA 2865 PHENYLETHYL FUROATE
- FEMA 2888 HYDRATROPIC ALDEHYDE DMA
- FEMA 2952 PROPYLIDENE PHTHALIDE
- FEMA 3006 SANTALOL
- FEMA 3007 SANTALYL ACETATE
- FEMA 3137 2,6-DIMETHOXYPHENOL
- FEMA 3142 CITRONELLIC ACID
- FEMA 3333 3-BUTYLIDENE PHTHALIDE
- FEMA 3426 ACETALDEHYDE DMA
- FEMA 3492 ETHYL UNDECANOATE
- FEMA 3539 OCIMENE NATURAL
- FEMA 3599 TIGLIC ACID
- FEMA 3690 CIS-3-HEXENYL LACTATE NATURAL
- FEMA 3697 2-HYDROXY-4-METHYLBENZALDEHYDE
- FEMA 3723 2-OXOBUTYRIC ACID
- FEMA 3733 P-CRESYL CAPRYLATE
- FEMA 3896 PRENYL MERCAPTAN
- FEMA 3912 9-DECENAL
- FEMA 3983 TRANS-2-HEXENYL CAPROATE
- FEMA 4008 TRANS,TRANS-3,5-OCTADIEN-2-ONE
- FEMA 4100 3,5,6-DIMETHYL-2-ISOBUTYLPYRAZINE
- FEMA 4121 GERANIC ACID

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