

Creating more sustainable fragrances with biotech

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In the face of a changing climate and crop diseases, manufacturers of products containing natural flavors and fragrances are pivoting to a new way to source ingredients. Companies have been partnering with

biotechnology firms to manufacture scents and flavors using fermented microbes, which experts say are more sustainable. A new story in *Chemical & Engineering News*, the weekly newsmagazine of the American Chemical Society, details how the industry is brewing up new fragrances.

Although the availability of natural fragrances and flavors like citrus and vanilla is dwindling, the demand for them has increased, writes Senior Business Editor Melody Bomgardner. In recent years, flavor and fragrance companies have been working with the [biotech industry](#) to shore up supply chains and avoid issues like seasonality and poor harvests, without having to use synthetic compounds. Fermentation-derived ingredients can be listed as natural in the U.S. and Europe, which appeals greatly to consumers. Biotech firms and major chemical companies are stepping up their production of fermented products while also making the process more efficient and less expensive.

To be commercially viable, engineered microbes need to make a flavor or scent molecule at a much higher concentration than what's found in plants. Once microbial engineers figure out which plant genes they need to get microbes to produce a new flavor or scent molecule, it's relatively easy to make variants of that structure, they say. For example, γ -decalactone, which smells like peaches, is just one of 20 fruity and buttery molecules that can be made from a lactone process.

These new [fragrance](#) molecules can be used in products such as hard seltzers, laundry detergents and fine perfumes. Another advantage of fermented [molecules](#) is consistency of [flavor](#) and smell, which is hard to achieve with naturally derived ingredients. With sustainability being a must-have for consumers and manufacturers alike, experts are hopeful that this is a versatile, cost-effective solution.

More information: [cen.acs.org/business/specialty ...](https://cen.acs.org/business/specialty...)

[-biotechnology/99/i5](#)

Provided by American Chemical Society

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