

# Product testing

Defining the sensory profiles of fresh berries.

The Consumer, Sensory & Market Insights team at the Vineland Research and Innovation Center in Ontario, Canada, has developed a descriptive lexicon for fresh strawberries, including a list of sensory descriptors (aroma, flavor, taste and texture), aroma references and definitions to describe the profile of fresh strawberries.

Their research involved strawberries, but a similar approach can be applied to other berry types, says program leader Amy Bowen.

## The products

During the evaluation, the research center's trained sensory panelists evaluated strawberries using their descriptive lexicon.

A profiling exercise included two field-grown Ontario strawberries, a greenhouse-grown Ontario strawberry and an imported strawberry from the U.S.

Participants tasted the strawberries blind under red lighting, and the fruit was identified with a three-digit code to avoid bias.

All varieties were purchased commercially.

**Sensory evaluation uses humans as instruments to analyze the sensory properties of foods, drinks and many consumer products. For foods and beverages, that typically means evaluating taste, aroma, flavor and texture. Visual and auditory are also important attributes.**

**Sensory as a science uses humans to measure sensory attributes of food and beverages, and it uses "foods" to gain fundamental insight into human perception.**

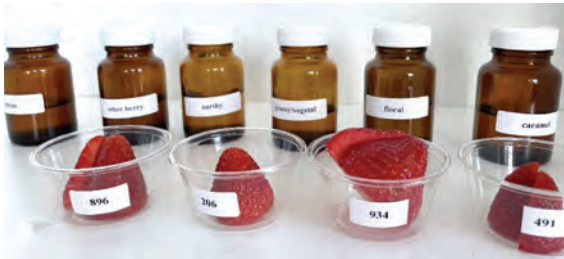
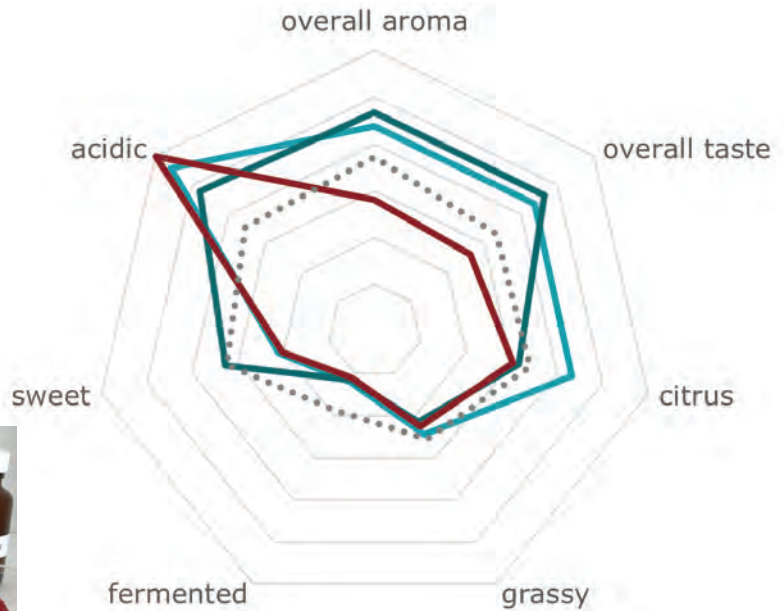
**Industries use sensory evaluation for product development, product mapping, product improvement, competitor evaluation, cost reduction and shelf-life studies, for example.**

**Source: Ohio State University's Sensory Evaluation Center in the College of Food, Agriculture and Environmental Sciences**

## STRAWBERRY RESEARCH

- field-grown (Ontario) - 1
- field-grown (Ontario) - 2
- greenhouse-grown (Ontario)
- ..... imported (US)

Radar plot shows a subset of aroma and taste attribute intensity trends from preliminary profiling of fresh strawberries. →



← Aroma references along with strawberry samples used in training.



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### The descriptive lexicon

- Aroma/flavor attributes: overall aroma and taste, citrus, floral, grassy, fermented, honey
- Taste attributes: sweet, acidic, bitter, astringent
- Texture attributes: firm, granular flesh, seedy, juicy

### The results

There was a trend of higher overall aroma and taste for the Ontario field-grown strawberries. The greenhouse-grown strawberries were distinct with a tart acidity and lower overall aromatic and taste profile.

The U.S. imported strawberries were higher in fermented aroma and had lower acidity.

### How to use this research

“Full descriptive sensory profiles, similar to the ones generated in this pilot study, are key to understanding the sensory diversity in your product set,” Bowen explains. “This knowledge is useful for marketing, product positioning and variety selection in production and variety development. Results can also be correlated with consumer acceptance to understand the sensory drivers that impact liking.” **pg**

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