Cross modal effects of aroma on sweetness perception in beverages

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Introduction and aim
Cross modal interactions could potentially be used in order to maintain a high level of perceived sweetness in sugar-reduced beverages. It has earlier been shown that aromas can enhance sweetness perception through cross modal interactions.

The aim of the current studies was to screen different aromas’ ability to increase perceived sweetness in an apple/elderflower fruit drink matrix.

Discussion and conclusion
In the studies presented, vanilla aroma was the most robust enhancer of perceived sweetness, whereas banana and pomegranate aroma showed varying effects on perceived sweetness.

Aromas
- Banana
- Pomegranate
- Vanilla

Trained sensory panel
n = 11

Consumer study
n = 126

Sweetness (15 cm line scale)

Results
Banana-, and vanilla aroma increased perceived sweetness of the fruit drink in the descriptive study, whereas pomegranate aroma had no significant effect.

How sweet do you find the fruit drink? (9 pt categorical scale)

Results
Both pomegranate-, and vanilla aroma increased perceived sweetness in the consumer study.

Further results
Besides these studies in fruit drinks, descriptive studies in aqueous solution showed similar perceived sweetness enhancing effect of vanilla.