AROMAS, ALLIES FOR REDUCING THE SUGAR CONTENT OF FRUIT JUICES

Many public health organizations recommend reducing the sugar content in beverages, but the question is how? How is it possible to reduce the amount of sugar in beverages without using sweeteners but still ensuring consumer liking?

For several years, CSGA researchers have been interested in the interactions between the senses, and in particular those between olfaction and taste. They have thus shown that certain aromas can reinforce the perception of food sweetness. In a recent study co-funded by the European Union[1] and INRA, Thierry Thomas-Danguin and his colleagues used a new method called "Olfactoscan" which combines gas chromatography and dynamic olfactometry. This method consists in separating the different odor-active molecules present in a food while asking a panel of human subjects to smell each molecule to select odorants associated with a given taste (in this case, the sweet taste).

The use of this method allow the researchers to select a dozen of target molecules among the 80 identified in a multi-fruit juice. An additional study showed that the addition of one of these molecules, an ester naturally present in fruit juice, allows maintaining the sweetness intensity of a juice whose sugar content has been reduced by 32%, without adding any sweetener.

This innovative approach opens up particularly promising avenues for developing beverages with a reduced sugar content by capitalizing on the odorous compounds naturally present in fruit and contributing to sweet perception. The identification of these compounds could even serve as selection criteria in the choice of fruit to be used to produce juices that are healthier but equally appreciated by consumers.

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To know more

Barba C, Beno N, Guichard E, Thomas-Danguin T (2018). Selecting odorant compounds to enhance sweet flavor perception by gas chromatography/olfactometry-associated taste (GC/O-AT). Food Chemistry, 257, 172–181. 10.1016/j.foodchem.2018.02.152

Key words

Aroma; sugar; beverages; taste; odor-active molecules; sensory evaluation

[1] EU-H2020-MSCA-IF-2014-655545