

SALIVATING TO BETTER SMELL?



The smell we perceive by putting food under our nose is seldom the same as the aroma we detect by putting food in our mouth. Actually, mechanisms that contribute to the formation of the food bolus in our mouth influence the release of aroma molecules.

The researchers at CSGA have been interested for some years now in the role of saliva in aroma release. Saliva is a biological fluid composed of water, ions and salivary proteins, whose composition varies greatly from one individual to another. When it is put into the mouth, the food is

quickly soaked or diluted in saliva.

In a recent study, Carolina Muñoz-Gonzalez, Gilles Feron, Marine Brulé and Francis Canon collected saliva samples from different subjects. Micro-volumes of these samples were distributed in small vials and placed in the presence of an aroma molecule. Once a vial was hermetically sealed, the researchers let the content incubated and then recovered the air contained in the vial to analyze the aroma molecules present in this headspace. About 20 different molecules were tested.

The results showed that under the influence of salivary proteins, some aroma molecules (but not all of them) turned into new compounds, the latter also being potentially aromatic. However, the results also revealed variations between saliva from different individuals: the metabolism of molecules into new compounds depends on the protein concentration and antioxidant power of each saliva sample.

This study suggests that inter-individual variations in the metabolism of aroma molecules by salivary enzymes could play a role in inter-individual differences in odor perception: if we do not all feel the same when we eat a piece of food, it is partly because we do not all salivate in the same way!

Contact

Dr Francis Canon (francis.canon@inra.fr)

To know more

Muñoz-González, C., Feron, G., Brulé, M., & Canon, F. (2018). Understanding the release and metabolism of aroma compounds using micro-volume saliva samples by ex vivo approaches. *Food Chemistry*, 240(Supplement C), 275-285.

Key words

Aroma; saliva; mouth; perception; retronasal; inter-individual variability