

## Abstract

# Sensory Science – a branch of science that is constantly on the move

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**Sensory science is an interdisciplinary field which is irreplaceable for food manufacturers in terms of quality assurance and product development. A range of recognised methods have been developed over recent decades to describe and evaluate food quality. On a molecular level, sensory science is concerned with sensory effect mechanisms and on a social level it focuses on the acceptance of new foods for nutrition of the future.**

## Sensory science today

Sensory science as an “objective” discipline is based essentially on food chemistry and nutrition psychology. It is currently an applied science with close links to the food industry and stands out as a discipline in its own right in particular as a marketing or consumer science. Sensory methods help to answer questions which arise in an objective manner and to prepare management decisions. This means, on the one hand, that assessors need to be selected and trained. On the other hand, it is important to create laboratory environments which are protected against external influences such as distracting smells or sounds. In order to be able to provide valid data, large food companies and sensory marketing agencies also invest in evaluation software. The aim of the sensory scientific practice is to “Record, measure, analyse and interpret reactions to products which are identified by the senses of sight, smell, touch, taste and hearing”.

## A branch of science that is on the move

With the rapid development of digital recording and the processing of large quantities of data, optical sensors in terms of “electronic eyes” have already replaced human eyes in the evaluation of food quality in many production areas.

The instrumental analysis of an “electronic nose” is, however, much more complex as smells are interpreted by the brain. The analysis of dynamic effects and the use of temporal sensory measurement methods are exciting in the development of new methods as they lead from the static flash photograph of the measurement of our sensory impressions to a temporal view.

## Significance in industry

If sensory science tended to be used in a more reactive manner in the past, e.g. in quality assurance, nowadays it is increasingly involved in the overall product life cycle. Thanks to their expertise, sensory science experts are able to offer constructive advice in the field of innovation and support product development in a targeted manner. Sensory science can increase effectiveness and efficiency in product development when used as a strategic component and thereby reduce flop rates. However, this professionalisation of sensory science is often accompanied by increasingly frequency product tests in the media. This so-called “street sensory consumer test” is often lacking in validity, however, and tends to defeat rather than enhance appreciation in the food sector. This is one of the very aims of sensory science as a discipline, which is concerned in a context of the permanent availability and variety of food products to train people how to derive enjoyment.

## Top themes for the future

In the context of environmental and climate protection, sensory science also needs to be able to support society in the transformation of food systems. New food products and sustainable product innovations not only have to taste good in order to be accepted; support is also required in terms of quality assurance. In order to enhance the appreciation of food products and limit their waste, didactic sensory training methods are being requested for day-care centres and schools. Exciting themes are also being examined in the field of research such as the investigation of biological and psychological triggers of sensory effects on the acceptance of food or the question of what creates appetite and how sensory perception controls our eating habits.