



*Tea samples for quality tasting.*

In the food industry, the role of sensory and consumer scientists is to understand how human sensory perception works, what factors influence responses to stimuli and what factors influence consumer product-decision making (eg. the choice of one product over another as well as its continued purchase).

Within a university or specialist research establishment, sensory and consumer scientists can also provide an understanding of the physiological mechanisms of food consumption which can lead to better food design. Particular current examples of this application include development of more appealing foods for cancer patients who may lose taste sensitivity during treatment, and better dietary advice for weight management through understanding satiety.

The focus of sensory and consumer scientists has mostly been on foods, but the focus can be more than that - any product type that consumers interact with (eg. ranging from car seat comfort to can opener functionality). Their aim is always to help to maximise and maintain consumer satisfaction with minimum business risk. These scientists provide informed guidance for business decision making at any stage of a product life cycle from idea inception to in-market maintenance processes.

During product development and maintenance programs, the sensory and consumer scientist will not work

alone. They will always collaborate with relevant internal teams such as marketing, manufacturing, sales, product development and quality control and external stakeholders such as market research, universities and sensory research companies. Selected examples of a sensory and consumer scientist's work during product development include:

- *Early Exploration Stage: a business may want to determine if there is an opportunity to enter an existing market and what the best product to do that may be.*

A sensory and consumer scientist can help marketing, using a range of techniques to review existing product appeal and reasons for appeal. This helps to identify desirable, undesirable and potentially unique or differentiating attributes and functionalities, as well as potential gaps in the market. If a gap is found that has business potential, a range of concepts can be developed with marketing for further testing.

- *Mid Development Stage: to generate the best product to fit a validated concept, prototypes are usually created by product developers.*

A sensory and consumer scientist can assist product developers in prototype creation for consumer testing by assessing products and prototypes with stakeholders. This ensures the consumer-desired sensory attributes of interest are detectably present at different strengths in the prototypes

so consumers can differentiate and indicate appeal for each.

If elements of product design do not meet consumer expectation, advice can then be given on possible changes to help maximise appeal. The sensory and consumer scientist is the voice of the consumer in this process.

- *Late Development Stage: when product design is near finalisation, systems to help manage product quality can be developed.*

There are several testing regimes and product attribute training programs that a sensory and consumer scientist can help develop for product quality management. The programs are usually developed in the late stages of the product development process.

Among other things, sensory and consumer scientists can contribute to:

- *Shelf-life validation* - ensuring no consumer dissatisfaction during declared shelf-life period (ideally applied pre-launch)
- *Quality control processes* - involving key attribute assessment of a product during manufacture, allowing corrective action to be taken quickly (faster than most analytical tests) and identifying any drift over time which can then be adjusted
- *Regular in-market product monitoring* - (which may include competitor products) with consumers to assess any change in product appeal over time, and causes for this, so any appropriate action can be taken.

Sensory and consumer science is particularly valued for its ability to help make business decisions to terminate a doubtful development project early and limit iterations (both minimising cost) and proceed with a project more likely to succeed. Working in sensory and consumer science is dynamic and satisfying, giving opportunities for interactions and influence within and outside a business.

*Annesley Watson is a retired sensory and consumer scientist and Jodie Hill is Research Director at Sensory Solutions, and current chair of the AIFST Sensory and Consumer Science special interest group. 1*