Sensory and Consumer Science



SHEET NUMBER 1

This Sensory and Consumer Science Factsheet is one among the series compiled by Guires Food Research Lab, providing clear-cut, consistent and easily understandable information on food technology for our readers.

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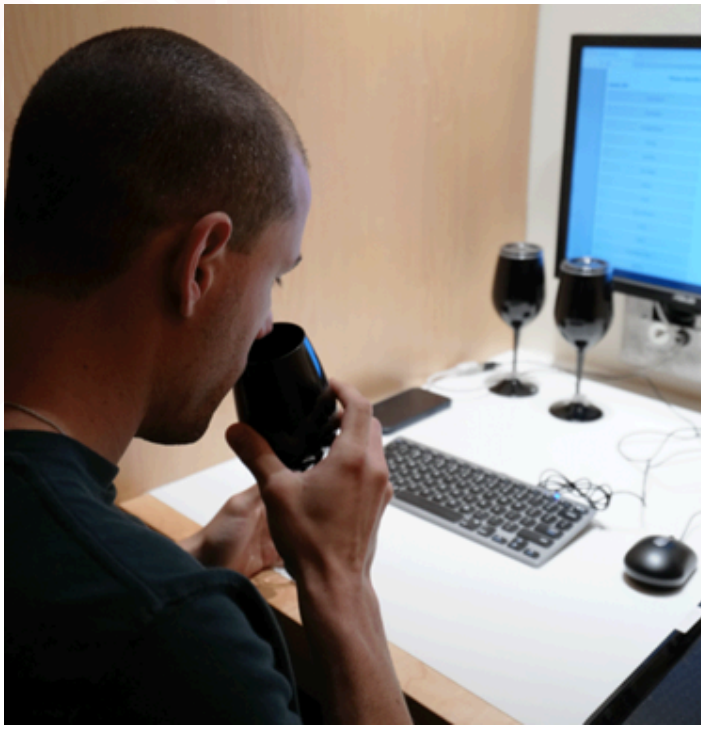
The Importance of Consumer Sensory Analysis for Food Businesses

A crucial step in the creation of food and beverage products is consumer sensory analysis. In the absence of this crucial phase in the development process, businesses would essentially be throwing blindfolded darts and hoping to strike the target. A new product might be anything from a line extension to a repackaged or repositioned existing product to a new size or shape. A new product may be developed for a variety of reasons, but before it is released onto the market, it must undergo a thorough sensory study. Knowing what advantages early-stage sensory evaluations can offer will help you organize your bigger development strategy from the beginning. 1



Who Gets to be Part of the Panel?

A group of eight to twelve persons who have received training in using their senses to assess a particular product is perfect for a trained sensory panel. They pick up the ability to identify and measure distinct qualities like flavour, smell, texture, and appearance. Comparatively speaking, consumer panels—consisting of people who express their likes, dislikes, and opinions about a product—are simpler and demand a less time investment. These sessions are usually brief and don't call any special training.

Where does the Testing Occur?

The panellists will spend approximately six weeks assessing the food samples in sensory booths. Each panellist will be kept alone in a silent booth while trays filled with food samples will be passed through a small window. The booths will have a dim lighting (the brightness and colour of the lights can be altered if testing products that could benefit from several surroundings). The idea is that the booth restricts external elements so that it does not hamper with the sensory analysis process.

History

The origins of sensory analysis trace back to wartime endeavors aimed at supplying American forces with palatable food. By the early 1900s, professional tasters and consultants emerged, specializing in the assessment of sensory attributes across various industries, including food, beverages, and cosmetics. The term "organoleptic examination" surfaced to describe purportedly objective sensory evaluations. Nonetheless, these assessments frequently remained subjective rather than objective in nature. 3

It is way beyond to "just" tasting

When assessing the characteristics of a food product, we first assess its appearance, then its odour, texture/consistency and flavour/taste. The reaction to a sensory stimulus, on the other hand, can be divided into three different dimensions: qualitative perception, quantitative perception, and hedonic reaction. In order to obtain that information, we must use analytical or affective methods during the sensory evaluation such as the following:

- Triangle test, Duo-trio test, Two out of five test – Determining sensory variations and likenesses between products
- Paired comparison test - positioning dissimilar products as per their sensory properties
- Ranking test - assess obvious differences between numerous products based on the difference intensity
- Scoring test - assess the particular intensity of the product's sensory properties

In addition to an important and sufficient statistical analysis, newer, faster, and more comprehensive sensory techniques have emerged, such as check-all-that-apply (CATA), napping (N), flash profile (FP), temporal dominance of sensations (TDS), and preference and hedonic tests, which are still widely used today. With their benefits and drawbacks, each of these methods is highly helpful in the creation of novel foods. But other factors also play a role in determining whether a new product is successful or accepted. A lot of other factors also play a significant role, including social issues, the environment, nutritional awareness, particular diets, emotions, health, the nature of the items, packaging, etc.

THE ART OF TASTING: APPRAISAL OF FOOD WITH THE MOUTH

A strong sense of detail, in-depth understanding of flavor profiles, and an everlasting love of food are all necessary for tasting, which is genuinely an artistic endeavor. Food experts that have experience analyze a dish using all of their senses with each taste, identifying subtle subtleties and intricacies that an unskilled palate could miss. The procedure entails evaluating the entire presentation, texture, aroma, and flavor balance of a dish. It's a real talent that takes years to hone and requires many hours of practice to become proficient at.

SMELLING: IDENTIFYING INGREDIENT AND CULINARY TECHNIQUE AROMAS

Cooking is a sensory experience, and mastering the subtleties of many scents can take any meal to new culinary heights. A cook's sense of smell can help them distinguish between foods that are fresh and those that are past their best, from peppery cumin to fragrant basil. Achieving complicated flavors and textures also requires being able to identify the aromas of different cooking methods.

EVALUATING FLAVOR: ACKNOWLEDGING SUBTLETIES IN EACH MOUTHFUL

Evaluating flavor involves more than just tasting food. It's about discovering how to value the complexities and intricacies of every bite. Knowing what constitutes a great dish can improve the dining experience as a whole. You start to perceive the various flavor profiles and their interplay when you take the time to taste and savor each component.

Applications of sensory evaluation

Apart from new product development, sensory evaluation can be employed in various product development doings like product prototype assessment; concept fit; pilot plant scale-up; cost reduction analysis by replacing or altering ingredients; process amendment; ingredients deviations for example caused by decreasing salt, sugar, or fat or purchase specifications modification as well as product improvement, product formula optimization and supporting market research activities. 2

The use of sensory analysis in food testing is becoming more and more commonplace. It is becoming more and more recognized as essential to ensuring food items' quality and commercial success. It can be used in several phases of product development and production.

References:

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2)Świąder, K., & Marczewska, M. (2021). Trends of using sensory evaluation in new product development in the food industry in countries that belong to the EIT regional innovation scheme. Foods, 10(2), 446.

3)https://meatscience.org/docs/default-source/publications-resources/rmc/1994/the-human-as-a-testing-instrument.pdf?sfvrsn=2