

Sensory Evaluation as a Scientific Tool in Food Quality Assessment

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Abstract

Sensory evaluation is a scientific discipline that uses human senses to assess the quality, acceptability, and characteristics of food products. It plays a central role in product development, quality control, and consumer research. By integrating sensory science with analytical methods, food scientists can better understand consumer preferences and product performance. This article discusses the importance of sensory evaluation in food science and its role in ensuring high-quality food products. Improper post-harvest practices can lead to significant food losses, reduced nutritional value, and economic challenges. The application of appropriate post-harvest technologies enhances food safety, extends shelf life, and ensures year-round availability of food products. This article discusses the role of post-harvest technology in improving food quality and reducing post-harvest losses.

Keywords: Sensory evaluation, Food quality, Consumer acceptance, Product development, Sensory science

Introduction

Sensory evaluation involves the systematic use of human senses such as taste, smell, sight, touch, and hearing to assess food characteristics. These sensory attributes strongly influence consumer perception, acceptance, and purchasing behavior. Sensory methods provide valuable insights that cannot be fully captured through instrumental analysis alone. Scientific sensory evaluation uses trained panels and standardized testing methods to generate reliable and reproducible data [1]. Toxicological evaluation provides the scientific foundation for identifying harmful compounds and understanding their biological effects. Environmental contamination from industrial activities, agriculture, and waste disposal contributes significantly to chemical hazards in the food chain. Post-harvest technology encompasses a range of practices designed to preserve the quality and safety of agricultural produce after harvesting. Fruits, vegetables, grains, and other commodities are highly perishable and susceptible to mechanical damage, microbial spoilage, and physiological deterioration [1]. Additives can be derived from natural or synthetic sources, depending on their intended application and regulatory approval. Preservatives are

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among the most widely used food additives, as they inhibit microbial growth and delay spoilage in perishable foods [2]. Chemical indicators such as lipid oxidation and enzymatic activity also play a significant role in determining shelf stability, particularly in fat-rich and processed foods [3]. Sensory evaluation complements analytical methods by assessing consumer acceptability in terms of taste, odor, color, and texture [4]. Shelf-life studies are also important for regulatory compliance, as food manufacturers must provide accurate expiration dates and storage instructions based on scientific evidence [5]. Together, these approaches ensure that shelf-life evaluation supports food safety, quality control, and consumer trust.

Conclusion

Sensory evaluation plays a crucial role in food quality assessment and product development. By providing direct insight into consumer perception, it supports the creation of high-quality and acceptable food products. Continued advancements in sensory science will further strengthen its contribution to food innovation and quality assurance. Their successful application requires careful formulation, scientific validation, and regulatory compliance. Ongoing research will further expand the use of natural preservatives in sustainable and health-oriented food production. Food additives play a significant role in improving food quality, safety, and shelf life in modern food systems. When used responsibly and regulated effectively, they contribute to product stability and consumer satisfaction. Ongoing research and regulatory oversight are essential to ensure the safe and beneficial use of food additives in the global food industry.

REFERENCES

1. Mihafu FD, Issa JY, Kamiyango MW. Implication of sensory evaluation and quality assessment in food product development: A review. *Current Research in Nutrition and Food Science Journal*. 2020 Dec 28;8(3):690-702.
2. Munoz AM. Sensory evaluation in quality control: an overview, new developments and future opportunities. *Food Quality and Preference*. 2002 Sep 1;13(6):329-39.
3. Sokra I, Somaly S, Meta H. Sensory Evaluation Methods in Food Science: Principles, Applications, and Recent Advances. *Journal of Agriculture and Technology*. 2026;2(1):277-86.
4. Elortondo FP, Ojeda M. Food quality certification: An approach for the development of accredited sensory evaluation methods. *Food quality and Preference*. 2007 Mar 1;18(2):425-39.
5. Carbonell-Barrachina AA. Application of sensory evaluation of food to quality control in the Spanish food industry. *Polish Journal of Food and Nutrition Sciences*. 2007;57(4 [A]):71-6.