

Title Shelf-life versus flavour-life for fruits and vegetables: how to evaluate this complex trait

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Abstract

Purpose of review: This review highlights progress made in the recent past in understanding the flavour quality of fruits and vegetables, how it is perceived, how to evaluate this trait, and how it is affected by harvest maturity and postharvest handling.

Recent findings: The field of flavour chemistry and sensory science is rapidly evolving in terms of new detection technology, refinement of sensory techniques and understanding human perception of flavour, as well as relating sensory to instrumental data. This is especially true for fruit and vegetable flavour and needs to be taken into consideration when determining shelf-life and evaluating quality of fresh produce.

Limitations: Flavour is a complex trait comprised of many variables including sugars, acids, volatiles and other compounds and, thus, is difficult to evaluate both chemically and in terms of sensory perception. The relationship between chemical and sensory data is also sometimes difficult to interpret.

Directions of future research: The individual contributions of flavour compounds and their interactions in terms of the overall flavour quality of fresh produce needs to be determined for many important horticultural crops. The effect of harvest maturity, handling, storage temperature and shelf-life duration needs to be evaluated for flavour quality shelf-life, which may be shorter than appearance shelf-life for many commodities.