

Abstract:

The concept of quality of European pear fruit at the time of consumption is different from that of the quality of fruit during or after storage. In the latter case the absence of defects, disorders and diseases is sufficient to describe a good quality fruit, while for eating quality an appropriate texture is needed, with balanced sweet and sour taste, and full development of typical pear flavour. Texture is especially difficult to obtain, because it depends on many factors: time of harvesting, conditions and duration of storage, conditions of post-storage ripening. If storage is too short or too long, pears can soften with a dry, coarse texture. Also if all conditions are met to obtain a buttery and juicy texture, it may be difficult to obtain it at the right time for consumption. The texture of fruit conditions the possibility that other compounds contained in the cell (sugars, acids, volatile substances) can be extracted from the cell with mastication and so can be perceived by the consumer. Texture is related to how cell wall components change during ripening: water soluble polyuronides increase, while other alcohol insoluble fractions decrease during ripening. De-esterification and depolymerization can be involved in the solubilization of polyuronides. Sugar, acids and volatile substances are involved in taste and flavour of pears. Volatile substances are very important for pear quality because they impart the typical character to the flavour. The main impact compounds have been identified as esters of decadienoic acid, but also low boiling point volatiles are important in pear flavour. The recent findings as regards the effects of harvesting time, storage and ripening conditions on eating quality of pears are reviewed and the relations between chemical and sensory properties are discussed.