

Abstract

Experiments were carried out to determine whether storage of apples under different atmospheres may influence the relationship between fruit firmness and sensory texture acceptability. Apples ('Elstar', 'Jonagold' and 'Gloster' cultivars) were stored at 3 °C in either normal atmosphere, standard controlled atmosphere (CA) (5% CO₂:3% O₂) or low oxygen CA (1.5% CO₂:1.5% O₂). After storage, firmness of the apples was varied by further storage at 0 °C and/or 18 °C for various periods. Fruit were then subjected to the Magness–Taylor test and sensory analyses. There was a distinct effect of storage conditions on the relationship between firmness and acceptability of fruit texture. The effect depended on apple cultivar. For 'Jonagold' and 'Gloster' fruit stored in CA conditions, higher values of optimum firmness and wider ranges of highly acceptable firmness were found than for normal atmosphere-stored apples. For 'Elstar' fruit such differences were not observed.