

Abstract:

The aim of this study is to evaluate the storage potential of Sweetheart cherry, which is a very late season cultivar with large fruit size, excellent fruit quality and low susceptibility to cracking.

Cherries were harvested at commercial maturity and stored in several controlled atmospheres (CA) at 1°C and 95% HR. For reference, cherries were stored in air as well.

Soluble solids, titratable acidity, texture, colour, polyphenoloxidase (PPO) enzymatic activity, anthocyanin content, as well as changes in sensory attributes were monitored during storage. Shelf-life conditions (3 days at 20°C) were included in order to ascertain the quality of cherries when they arrive to the consumers.

The best results were obtained by using an atmosphere with 2% CO₂ and 5% O₂. In these CA conditions, cherries maintained the highest acceptability and appearance score, anthocyanin content remained unchanged and PPO activity was at its lowest levels. Cherries kept in CA maintained better acidity and texture than those kept in air.

This research has shown that Sweetheart cherries can be kept for as long as six weeks by using the optimal CA conditions while maintaining an excellent quality throughout their storage and shelf-life.