

Title Understanding the effects of different coating materials and storage conditions on the storability of 'Bing' sweet cherries

Author S.I. park and Y. Zhao

Citation Book of Abstracts, 2004 IFT (Institute of Food Technologists) Annual Meeting and Food Expo, 13-16 July 2004, Las Vegas, Nevada, USA. 321 pages.

Keyword cherry; coating agent

Abstract

Sweet cherries have a very short shelf-life in fresh fruit markets because they are highly perishable and very vulnerable to physical damage resulting in pitting and bruising. Edible coating have been used to extend shelf-life of fresh fruits and vegetables by creating a micro-modified atmosphere around products. Although several coating attempts have been made on fresh cherries, limited coating materials were examined and the results were very inconsistent. Our objectives were to study the effects of different coating materials and storage conditions on the storability of fresh 'Bling' sweet cherries (*P. avium* L.) and to understand how the nature of different coating materials may affect the function of coatings on fresh cherries. Four different coating materials (Semperfresh[®], calcium caseinate, chitosan, or TIC Pretested[®] colloid 911) at 1% concentration and two different storage conditions (25.0 °C and 50% RH or 2.0 °C and 88% RH) were examined. Weight loss, surface and stem color, surface pitting and mold incidence, titratable acidity and soluble solid content, and firmness of the cherries were monitored during storage. Cold temperature was essential in improving storability of fresh cherries when applying edible coatings. Semperfresh[®] coating significantly improved overall quality of fresh cherries by decreasing water loss and improving color stability during cold storage. Chitosan-based coating were effective in controlling mold incidence. However, colloid 911 and calcium caseinate coatings were not beneficial in preventing quality deterioration of fresh cherries during storage, probably due to their hydrophilic nature leading exacerbated weight loss and shriveling occurred by interactions between coating materials and cherry's epidermal layers. Appropriate selection of edible coating material is critical for its success to prevent quality deterioration of fresh cherries during storage. Our results suggest that using composite coating materials and increasing coating solution concentration without wetting agent may be the choice for fresh cherry coating.