

Abstract:

Sweet cherry (*Prunus avium* 'Merton Bigarreau') fruit were placed in polystyrene trays (350 g/tray) and wrapped with polyvinyl chloride (PVC) stretch film and P-Plus polypropylene (PP) films at different permeability or unwrapped (control). In addition to retail packs, the effect of P-Plus polyethylene (PE) bags at different permeability in carton boxes (in 3 kg packs) was investigated in 'Lambert' cultivar. The fruits under different modified atmosphere (MA) conditions were stored at 0 °C. Fruit parameters (quality, weight loss, resistance to stem separation, titratable acidity and soluble solids) were examined during storage. In 'Merton Bigarreau' fruits, MA packaging (MAP) reduced the weight loss to 2% with PVC film, and to 0.2% with PP compared with 9.8% in control after 6 days at 20 °C. The weight loss reached 22.5% for control fruits, 4.5% with PVC and 0.3-0.5% with PP after 8 weeks of storage at 0 °C. In 'Lambert' fruit, MAP reduced the weight loss to 0.1% with PE films compared with 5% in control after 6 days at 20 °C. The weight loss reached 21.7% in control fruit, decreased to 0.8-0.1% for PE films after 8 weeks of storage at 0 °C. Less permeable films (PP-90 for retail packs and PE-120 for bulk packs) in MAP not only significantly decreased the weight loss, but also maintained the fruit quality and taste better than high permeable one. Therefore, MAP doubled the storage life of sweet cherry to 8 weeks compared with control.