

Title Extending the quality of fresh strawberries by equilibrium modified atmosphere packaging

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Abstract

The impact of equilibrium-modified atmosphere packaging (EMAP) technology on extension quality [pH, acidity, brix, color (L , a , Chroma, hue)] and texture profile analyses of fresh strawberries was studied and compared during storage. Cast polypropylene (CPP), linear low density polyethylene (LLDPE) and polyethylene-terephthalate (PET)/Ethylene vinyl alcohol (EVOH)/Polyethylene-low-acetyl fractions (LAF) were used as heat-sealed lid and polyvinyl chloride (PVC/PE) tray with the purpose of obtaining equilibrium atmospheres. Among the various films used, pH of fresh strawberry was 3.275 at initial days, and increased to 3.39- for LLDPE; 3.42 for CPP and 3.44 PET/EVOH-LAF at the end of 10 days' storage. Acidity values were 0.609 mg ml^{-1} and decreased to 0.56 mg ml^{-1} for LLDPE; 0.47 mg ml^{-1} for CPP and 0.49 mg ml^{-1} for PET/EVOH-LAF at end of storage. The strawberry brix had evolved from the initial 7.125 and reduced to about from 5.6 to 6.07 at the end of the storage. At the end of the storage, the strawberry L values had not significantly changed from the initial from 29.10 (L) to 28.9–26.46. Initial values of the firmness were 1,089 gf and reduced with ranged from 769 gf to 527 gf at end of the 10-day storage period. All the parameters in texture profile analyses showed a decline, except adhesiveness and springiness and used potential indicators of fresh strawberries. The overall results expressed that strawberry quality can be maintained effectively at least for 10 days using various polymeric lid films. PET/EVOH-LAF and CPP were much more effective than LLDPE due to barrier properties during storage periods. Quality of strawberry packaged with suitable high-barrier lid films have been prolonged significantly.

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