

Title Effect of oxygen and carbon dioxide absorbers on strawberry quality
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Abstract

This study investigated the effect of active modified atmosphere packaging on quality of fresh strawberries. Strawberries were treated with one oxygen and two different carbon dioxide scavengers throughout storage at 4 °C for 4 weeks. The effect of active packaging was assessed by comparing gas concentrations, pH, electrical conductivity, total soluble solids, surface color, decay incidence, texture profile analysis, sensory analysis, and FT-NIR analysis values. pH values were significantly higher in the controls (package without absorbers) during storage compared with other treatments. The package headspace with CO₂ absorbers, had the lowest CO₂ accumulation and O₂ absorbers resulted in constant O₂ levels (5 kPa) during storage. Total soluble solid contents of all treatments were between 10.34% and 7.7% except for the control which had a value of 6.94% at the end of the storage. CO₂ absorbers are clearly effective for maintaining soluble solid contents. Electrical conductivity was lowest with CO₂ absorbers throughout storage and color was better maintained in all treated fruit. Firmness values of the controls were significantly lower than those of the treatments. Results of sensory evaluation showed that the controls had the lowest scores for all attributes. This study shows that the FT-NIR is a powerful-nondestructive tool for monitoring quality of strawberries and produces rapid readings during storage. In general, our study showed that the use of active packaging preserves strawberry.