

Abstract

Edible coatings and films can provide an alternative for extending the postharvest life of fresh fruits and vegetables. The effect of different wheat gluten-based coatings and films on refrigerated strawberry quality and shelf life was studied. Coatings were formed directly on the surface of the fruit and films were previously formed (on Teflon surfaces) and then used to pack fruit. Fruit quality was evaluated by weight loss, firmness retention, visible decay, surface color development, titratable acidity, total soluble solids, reducing sugar content and a sensory evaluation. The bilayer coating of wheat gluten and lipids (beeswax, stearic and palmitic acids) had a significant effect on the retention of firmness, reduced the weight loss and showed better results from the physico-chemical analysis compared to the control fruit. All the treatments with gluten film (except with the film pouch) also showed a beneficial effect on firmness retention compared to the control fruit. The gluten film (except the film wrap) seemed to be more promising for controlling decay than the coatings. Sensory evaluation of the strawberries showed that the gluten and the composite coatings maintained the visual quality of the fruit during the storage time, and the taste of the strawberries with the gluten coating was acceptable to consumers. However, the appearance and taste of the bilayer-coated fruit were unacceptable.