

Title Effect of heat shrinkable films on shelf life, and quality of tray-wrapped kiwifruits (*Actinidia deliciosa* Chev.)

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Abstract

Studies were conducted to observe the effect of heat shrinkable films on shelf life and quality of kiwifruit maintained under ambient conditions. Fully mature kiwifruit 'Allison' were either shrink-wrapped in three heat shrinkable films -Cryovac (9 μ) and LDPE (25 μ), polyolefin (13 μ) or were not wrapped at all (control) and then stored at ambient conditions (22-28°C and 62-68% RH). Observations on physiological loss in weight (PLW), decay loss, firmness, and quality attributes including total soluble solids (TSS), acidity, and ascorbic acid content were recorded immediately before packing, and after shrink-wrapping at 3 days intervals. All heat shrinkable films influenced PLW, decay incidence, fruit firmness, and quality attributes of 'Allison' kiwifruit over unwrapped ones. However, best results were obtained with Cryovac (9 μ) films, which exhibited least PLW (2.3%) and decay loss (2.8%), and fruit retained moderately good TSS and retained higher ascorbic acid content over unwrapped fruits after 18 days at ambient storage. Respiration and ethylene evolution rates were influenced by heat shrinkable films with less respiration and ethylene evolution rate in Cryovac wrapped fruits compared to other treatments. All the heat shrinkable films delayed ripening of kiwifruit, but Cryovac films had the most significant effects. Shrink-wrapped fruit showed a steady increase in TSS with increase in storage period, whereas unwrapped fruits showed a sharp increase in TSS up to day 15 and then a steady decline afterwards. The patterns for acidity and ascorbic acid content were similar. These studies indicated that kiwifruit could be packed in Cryovac heat shrinkable films for about 18 days with least PLW or decay loss, and without any adverse effect on fruit quality. After 18 days of storage, fruit were fermented not fit for consumption.