

Title Effect of modified atmosphere packaging on the shelf-life of coated, whole and sliced mushrooms
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Abstract

Whole and sliced fresh mushrooms (*Agaricus bisporus*) were packaged with PVC wrap or two polyolefins (PD-941 and PD-961) films after coating with CaCl_2 and chitosan. Package gas composition, color, weight loss and maturity were measured during storage at 12 °C and 80%RH. For PD-961, the highest in-package concentration occurred during the first day of storage regardless of treatments, while wrap and PD-941 showed varying degrees in-package concentration with different processes and coatings. The whiteness of whole mushrooms varied significantly with the type of coating, but not with the type of films. The extent of darkening was greater in coated whole mushrooms than in sliced ones. Weight loss occurred in all packages and varied from 3 (g/100 g) to about 7 (g/100 g) after 6 days of storage. Due to a lower permeability, PD-961 packages had the lowest weight loss. The type of packaging films significantly affected the maturity index, where PD-961 most effectively lowered maturity index for both whole and sliced mushrooms, thus extending the shelf-life. The type of coating did not appear to affect maturity index except for the wrap package where chitosan coating markedly lowered the maturity index of sliced mushrooms.