Title Sensory shelf life of shiitake mushrooms stored under passive modified atmosphere

Author Gastón Ares, Carina Parentelli, Adriana Gámbaro, Claudia Lareo and Patricia Lema

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Abstract

The aim of the present work was to evaluate the influence of passive modified atmosphere packaging on the sensory characteristics and shelf life of shiitake mushrooms (*Lentinula edodes*). Mushrooms were packaged under atmospheric air in bags of three different films: low density polyethylene (PE), polypropylene (PP) and a polypropylene macroperforated film. Bags were stored at 5 °C for 16 days. Mushroom respiration rate, package atmosphere composition and mushroom weight loss were determined. Sensory characteristics of mushrooms were determined by descriptive analysis, and a consumer study was performed during storage.

Descriptive analysis showed that mushrooms stored under modified atmosphere had a higher deterioration rate than those stored in PP macroperforated films. Mushrooms stored under atmospheric air during the entire storage time showed a lower rejection rate and a longer shelf life than those stored in passive modified atmosphere. These results suggest that high CO_2 concentrations (higher than 9%) accelerated mushroom deterioration, indicating that shiitake mushrooms are more sensitive than other mushroom species.