Title The shelf life and in package cooking of ready-to-eat fresh asparagus in microwaveable MAP and VSP tray systems

Author Benyathiar, Patnarin; Harte, Bruce.

Citation Thesis, Master of Science (Packaging), Michigan State University.156 pages. 2010.

Keywords asparagus; MAP

Abstract

Asparagus (*Asparagus officinalis* L.) is one of the most popular cuisine vegetables. To assess the quality as a packed ready-to-eat product, fresh green asparagus (Michigan and Peru) was cut to the length of 6 inches, sanitized with sodium hypochlorite and then packed in commercially available microwaveable modified atmosphere packaging (MAP) and vacuum skin packaging (VSP) trays. Weight loss, moisture content, pH, O_2/CO_2 content in the package headspace, microbial growth and sensory shelf life (odor, color, texture and overall quality) were analyzed throughout the storage time. Michigan asparagus was packed and stored at 1°C and 8°C, 80% RH for 18 storage days. The sensory results showed that the shelf life of asparagus stored under MAP was longer than that stored under VSP. MAP of asparagus, stored at 1°C and 8°C was able to maintain product quality through 18 days and 15 days, respectively, whereas the VSP package maintained product quality for only 9 days at 1°C and 3 days at 8°C. Asparagus was also stored at a commercial storage temperature (4°C, 80% RH) for 21 days. The MAP system maintained asparagus quality throughout the 21 days while the VSP system maintained product quality until day 18. Microwave cooking time and power level affected the quality of the cooked asparagus. Either 2 or 3 min cooking time at full power was satisfactory for the MAP while 2 min at full or medium power was satisfactory for VSP.