

Title Influence of modified atmosphere packaging and storage temperature on the sensory and microbiological quality of fresh peeled white asparagus

Author A. Simón and E. Gonzalez-Fandos

Citation Food Control, Volume 22, Issues 3-4, March-April 2011, Pages 369-374

Keywords *Asparagus officinalis*; Minimal processing; Colour; Spoilage; Texture; Sensorial analysis; Shelf life; Modified atmospheres packaging; Vegetables

Abstract

The sensory and microbiological quality of fresh peeled white asparagus packaged in two different types of P-Plus films and stored at two different temperatures (5 °C and 10 °C) for up to 14 days, was studied. The shelf life limiting alterations at each temperature were evaluated. The best modified atmosphere was determined.

At 10 °C, the shelf life was 6 days, the loss of freshness was the main cause of quality loss, as indicated by colour darkening and presence of blotches. Moreover the sensorial acceptance of cooked asparagus was affected, being on the limit.

Fresh appearance was maintained better at 5 °C than at 10 °C, being microbial spoilage the main limiting factor. The atmosphere generated with film A (around 7% CO₂ and 15% O₂) inhibited spoilage and maintained the acidity of asparagus better than the atmosphere generated by film B (around 2% CO₂ and 20% O₂). The shelf life of asparagus packaged in film A and stored at 5 °C was 14 days.

Mesophiles and enterobacteriaceae counts in asparagus stored at 5 °C were acceptable during 14 days being around 7 log cfu/g. Mesophiles counts were slightly higher in asparagus stored at 10 °C than at 5 °C, while the increase in enterobacteriaceae was clearly higher in asparagus stored at 10 °C.