

Title The effect of surface treatments and modified atmosphere packaging (MAP) on the quality of fresh cut sliced Anjou pears

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Abstract

Shelf life and quality of fresh-cut Anjou pears was assessed using two surface treatments at 2% concentration levels (Nature Seal-NS and Sodium Acid Sulfate-SAS) with two package types (Modified Atmosphere Packaging-MAP and non MAP). The NS no MAP, NS + MAP, SAS no MAP, and SAS + MAP pears were studied for headspace gas, color, pH, TSS, TA, bacteria, yeast and mold counts over a storage period of 21 days at 4°C. Preliminary storage studies found that treatment type and MAP, showed significant differences between the pears in O₂ levels, color a* value, pH, bacteria, yeast, and mold growth. Visual observation showed significant browning and tissue softening in the SAS pears. Thus, SAS was not included in further studies due to its effect on pear quality. NS + MAP pears had significantly better physical quality and shelf life.

Final storage studies with NS no MAP and NS + MAP found significant differences in CO₂ and O₂ levels, color, bacteria, yeast, and mold growth. No significant difference occurred in pH, TSS and TA. No significant difference in the aroma, flavor, texture and overall acceptability was found for NS + MAP pears versus freshly prepared control. Appearance was the only attribute to be significantly different. NS + MAP pears had a shelf life of up to 21 days at 4°C.