Title Effect of organic acid and modified atmosphere conditions on quality of shredded green papaya (*Carica papaya* L.)

Authors I. Lichanporn and S. Kanlavanarat

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Abstract

Shredded green papaya is an ingredient of a famous Thai salad 'Som-tam'. It has a problem with short shelf life due to rapidly loss of color. Organic acids retarded the color changes. Modified atmosphere (MA) has been a solution to improve quality of either whole or fresh-cut products by reducing microbial decay. The shredded papaya was treated in combinations of dipping in 1.0% citric acid or 1% ascorbic acid and then stored in 5 % O_2 and 5% CO_2. The combination method could extend the shelf life of shredded papaya at ambient condition (20 ºC, 87% RH). Applications of dipping in 1%ascorbic acid or citric acid for 3 minutes and then stored in a condition of 5% O_2 or 5% CO_2 was the best method to reduce growth of *Escherichai* coli. Moreover, shredded green papaya in MA conditions had longer shelf life, by reducing respiration rate, ethylene production and color change (L*). Dipping in citric acid combined with storage under CO_2 condition exhibited synergistic effects on quality of shredded green papaya by reducing respiration and ethylene production rates as well as reducing of microbial growth. Shredded green papaya dipped in 1% ascorbic acid or citric acid and stored in 5% O_2 + 5% CO_2 conditions effectively maintained the acceptable quality.