

RESEARCH PAPER

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Thyme essential oil incorporated into alginate based edible coatings for shelf-life extension of fresh-cut papaya

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SUMMARY :

The present study aimed to produce nanoemulsions containing a polysaccharide and a lipid component and further employed it as an edible coating to extend the shelf-life of fresh-cut papaya cubes. Composition of the polysaccharide used, *i.e.*, sodium alginate was kept constant at 2 per cent (w/v) while the lipid used, *i.e.*, thyme essential oil was varied from 0.5 per cent, 1.0 per cent and 2.0 per cent (v/v). Nanoemulsions were prepared using ultrasonic emulsification, with Cween 80 as an emulsifier. Coated samples were packed in low density polypropylene boxes and stored at refrigerated conditions. The samples were analyzed for respiratory gas exchange, weight loss, microbial and sensory properties for a period of 20 days. The uncoated sample was unacceptable by the end of first week while the coated samples remained acceptable for more than 2 weeks. Increasing the concentration of oil tended to increase the shelf-life while keeping the quality attributes intact but also negatively impacted the sensory scores which improved with storage.

KEY WORDS : Alginate, Essential oil, Edible coating, Nanoemulsion, Fresh-cut papaya

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