**Title** Development and optimization of locust bean gum (LBG)-based edible coatings for postharvest storage of 'Fortune' mandarins

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**Abstract**

Two studies were conducted with 'Fortune' mandarins coated with locust bean gum (LBG)-based coatings to extend shelf-life, improve the external appearance and avoid flavor degradation of the fruit. In the first, three experimental LBG–lipid edible coatings (E6, F3 and F4) were tested and compared with a commercial wax and the uncoated control. Among the experimental coatings, F4 coating was the best for controlling weight loss and improving gloss, but it induced high ethanol production compared to commercial waxed fruit. A second experiment was designed to optimize the performance of F4 coating with two modifications: (1) decreasing emulsion solids content (SC) to half (F4-50% coating) and (2) increasing plasticizer content (F4-p coating). Fruit coated with the experimental coatings (F4, F4-50% and F4-p) were compared to uncoated fruit. Both coating modifications decreased ethanol levels in the juice compared to that from the F4-coating. Gloss of coated mandarins was reduced with the F4-50% coating. F4-p coating showed the best performance in controlling weight loss, improving gloss and reducing ethanol content