

Preservation of mango fruit with guar-based edible coatings enriched with *Spirulina platensis* and *Aloe vera* extract during storage at ambient temperature

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Abstract

In this study, the effects of guar gum (GG) edible coatings enriched with *Aloe vera* (AL) gel and ethanolic, and the aqueous extract of *Spirulina platensis* (SPE and PSW) on the physicochemical qualities of the mango (*Mangifera indica* L.) stored at the ambient temperature (25 ± 2 °C) for 3 weeks were investigated. It was found that the coatings reduced the respiration rate and the weight loss of the mango fruits. Fruits coating with GG + SPE significantly showed higher firmness in comparison with the control. Coating fruits with GG + AL remarkably reduced fruit weight loss. Also, GG + AL coated fruits significantly maintained the ascorbic acid content of mango. The results also indicated that the total phenol and antioxidant activity were much higher in the GG + SPE coated fruits, as compared to other ones. As the storage time was increased, the ascorbic acid content, titratable acidity (TA) and pH of the fruits were decreased, while weight loss and TSS were increased. The peel color changes during storage were much lower in the coated fruits in comparison to those in the control. Coated fruits showed a much lower a^* value than the control. It could be, therefore, concluded that guar edible coatings enriched with *Spirulina platensis*, especially the ethanolic extract, could have considerable effects on increasing the shelf life of mango fruit.