

Effect of alginate coating incorporated with *Spirulina*, *Aloe vera* and guar gum on physicochemical, respiration rate and color changes of mango fruits during cold storage

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Abstract

The objective of the present study was to assess the effect of *Spirulina platensis* (SP), *Aloe vera* (AV) and guar gum (GG) incorporated into an alginate (AL) coating on the quality properties of the mango fruit stored at 12 ± 1 °C for 4 weeks. This study showed that all coatings remarkably decreased the rate of respiration and the weight loss belonging to the mango fruits. Incorporating *Aloe vera* in the alginate coating (AV + AL) considerably kept the mango firmness. It was also revealed that the total phenol, flavonoid and antioxidant activity was considerably enhanced in the SP + AL and AV + AL coated fruits, in comparison to the AL coated and control fruits. The changes of peel color were found to be greatly reduced in the GG + AL coated fruits, as compared to other coatings as well as the control. The findings of this study, therefore, revealed that *Spirulina* and *Aloe vera* had the most positive effect on preserving the bioactive compounds of mango fruit during storage. Although the, L* value of the fruit peel was slightly decreased.