

# Effects of edible alginate coating enriched with organic acids on quality of mango fruit during storage

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## Abstract

Application of edible coatings containing organic acids is an effective method to preserve the quality and improve the storability of fresh product. For this purpose, 2% sodium alginate (Al) alone as well as in combination with 1% citric acid (CA), malic acid (MA) and ascorbic acid (AsA) was used on 'Langra' mango. The samples were stored at  $10 \pm 1$  °C and  $90 \pm 1\%$  relative humidity for 32 days. The results indicated that all the Al-treated fruit maintained the quality of mango fruit. Al/AsA treatment was showed the lowest chilling injury whit  $\sim 54\%$  difference compared to the control. Moreover, the minimum weight loss (4.18%) was observed in the Al/AsA treated fruit and the lowest firmness (3.61 N) was obtained in the control fruit while there were no significant difference between other treatments. Al/AsA treatment was showed the maximum content of AsA (18.29 mg100g<sup>-1</sup> FW), total phenol (175.36 mgGAE100g<sup>-1</sup> FW), flavonoid (40.94 mg quercetin 100 g<sup>-1</sup> FW) and antioxidant activity (34.43%) at the end of storage while the highest level of the soluble solids content and the lowest level of titratable acidity were obtained in the control. Overall, these findings showed that the Al edible coating treatment by incorporation of organic acids, especially with AsA, can be useful for preserving the quality of stored mango fruit.