

Effect of gum arabic and *Aloe vera* gel based edible coatings in combination with plant extracts on postharvest quality and storability of 'Gola' guava fruits

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Abstract

Guava is an important climacteric fruit that exhibits short shelf life at ambient conditions. Due to short shelf life, marketing and subsequent storage of guava is difficult. Therefore, some treatments that can extend shelf life and conserve quality of guava fruits are required. In the present work, the effect of ginger extract, garlic extract, gum arabic and *Aloe vera* gel coating (in combinations) was investigated on guava fruits at 25 ± 3 °C for 15 days. The combination of garlic extract + gum arabic markedly suppressed weight loss, skin browning and disease severity. In addition, fruits of garlic extract + gum arabic treatment had higher titratable acidity and this combination also suppressed excessive increase in total soluble solids till the end of storage period compared with control. Similarly, garlic extract + gum arabic combination significantly extended shelf life of guava fruits as compared with control. Garlic extract + gum arabic treatment showed significantly higher ascorbic acid content and lower total sugars. In contrast, reducing sugars were lower in gum arabic + *Aloe vera* gel treatment and non-reducing sugars were lowest in ginger extract + gum arabic coated guavas. Antioxidant activity and antioxidant capacity were not affected with any combined treatment but these were comparatively higher in gum arabic + *Aloe vera* gel treatment. In contrast, total carotenoids were higher in ginger extract + gum arabic combination while total flavonoid contents were higher in garlic extract + gum arabic coated guava fruits. In conclusion, combined application of garlic extract and gum arabic could be considered a suitable treatment for shelf life extension and quality conservation of guava fruits.