Tittle: Chitosan coating to improve postharvest quality of guava fruit minimally processed and control of *Colletotrichum gloeosporioides*

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Abstract:

The postharvest life of guava fruits is reduced due to the quality depreciation by rapid loss of color, softening, decay, shriveling and loss gloss of mature fruits. The aim of this study was to evaluate the effects of postharvest chitosan coating to maintain the post-harvest quality of guava minimally processed along the shelf life, and to verify the control of *Colletotrichum gloeosporioides*. The Minimum Inhibitory Concentration (MIC) and Minimum Fungicidal Concentration (MFC) of the coating chitosan gel were determined by serial dilutions, and the incubation system at 28 °C for 120 hours was estimated for *Colletotrichum gloeosporioides*. The chemical analyzes (soluble solids concentration, total acidity, pH, ascorbic acid and total sugars) were performed in triplicate after different shelf life times (0, 3, 7 and 14 days). Physical determinations (color, loss of fresh pasta), rot incidence and microbiological parameters were determined in postharvest samples, throughout the shelf life with or without refrigeration. The treatment with chitosan coating showed the best results on quality characteristics of guava fruits, and additionally influenced the pathogenic fungi growth during the experimental period. Furthermore, the activity of *C. gloeosporioides* decreased in all chitosan treatments. The results indicated the beneficial effect of chitosan coating on fruit quality and fruit decay.

Keywords: *Psidium guajava.* Minimum Fungicidal Concentration. Minimum Inhibitory Concentration. Pathogenic fungi, Postharvest life,

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