TITLE: SODIUM ALGINATE COATINGS LOADED WITH FRUIT-DERIVED LACTIC ACID BACTERIA TO CONTROL ANTHRACNOSE IN GUAVA AND MANGO DURING STORAGE

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ABSTRACT:
This study evaluated the efficacy of several fruit-derived lactic acid bacteria (LAB) strains loaded into sodium alginate (SA) coatings to control anthracnose development in guava cv. Paluma and mango cv. Palmer caused by distinct *Colletotrichum* species (*C. asianum*, *C. fructicola*, *C. tropicale*, *C. siamense*, *C. karstii*, *C. gloeosporioides*) during 15 days of room temperature storage (25 ± 0.5 ºC). The eight examined LAB strains caused strong inhibition on the mycelial growth of all target *Colletotrichum* species in vitro. LAB strains with highest inhibitory effects (*Levilactobacillus brevis* 59, *Lactiplatibacillus pentosus* 129, *Limosilactobacillus fermentum* 263) on target *Colletotrichum* species were incorporated in SA coatings. These strains had viable counts of >6 log CFU/mL in SA coatings during 15 days of room temperature storage. Application of coatings with SA + *L. brevis* 59, SA + *L. pentosus* 129 and SA + *L. fermentum* 263 delayed the development and decreased the severity of anthracnose lesions in guava and mango artificially contaminated with any of the tested *Colleotrichum* species. The results showed that the application of the formulated SA coatings loaded with tested fruit-derived LAB strains could be effective strategy to delay postharvest anthracnose development in guava and mango during storage.

Keywords: Edible coating, lactic acid bacteria, *Colletotrichum*, tropical fruit, biocontrol

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