Title Postharvest biological control of anthracnose (*Colletotrichum gloeosporioides*) on mango (*Mangifera indica*)

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Abstract

Preliminary screening of fungi and bacteria isolated from unmanaged mango trees in different ecologies of Ethiopia, yielded isolates antagonistic towards *Colletotrichum gloeosporioides*, the cause of mango anthracnose. Four isolates of bacteria, five yeasts and two filamentous fungi were evaluated in this study. Cell suspensions and culture filtrates of the isolates inhibited spore germination and hyphal growth of *C. gloeosporioides* in vitro. The isolates significantly reduced severity of anthracnose on artificially inoculated mango fruit. *Brevundimonas diminuta* isolate B-62-13, *Stenotrophomonas maltophilia* L-16-12, a member of *Enterobacteriaceae* L-19-13, *Candida membranifaciens* F-58-22, and the yeast isolate B-65-23 which, based on ITS analysis, possibly represents an undescribed species, were effective on naturally infected fruit. They kept anthracnose severity (lesion development) below 5% during much of the 12 d experimental period while severity on untreated fruit reached 29%. *B. diminuta* and the yeast B-65-23 were as effective as hot water treatment at 55 °C for 5 min. Further investigations on the mechanisms of biocontrol involved and the safety of the isolates, particularly the bacteria, for use on edible fruit are warranted. Only a single application of the isolates showed a potential for the control of mango anthracnose on harvested fruit.