Control of *Colletotrichum gloeosporioides* L. Caused Anthracnose Using isolated Yeast Species

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Anthracnose is one of the most widely spread post harvest diseases which is mainly caused by the fungus *Colletotrichum gloeosporioides* L. for a vast variety of fruits around the world. To control this damage various commercialized fungicides are being used. But due to harmful effects of these on consumers, scientists have now turned towards novel bio controlling methods. In this study the antagonistic activity of four types of wild yeasts species were tested against C. *gloeosporioides* as yeast has become one of the promising alternative to chemical fungicides. Four types of yeasts (Y162, Y234, Y342 and Y467) were isolated from surfaces of leaves of *Carica papaya* L (papaya), *Psidium guajava* L (Guava) and *Cocos nucifera* L (Coconut) water and *C. gloeosporioides* was isolated from infected papaya and banana tissues obtained from Badulla area. Yeast isolates were identified using colony, morphological characteristics and *C. gloeosporioides* isolate was also identified using colony, morphological characteristics through slide cultures. Four types of yeast isolates were tested for antagonistic activity against *C. gloeosporioides* using dual culture method. A commercialized fungicide (Fucanazole) was used as the positive control. Antagonistic activity was tested by calculating percentage of inhibition of colony radial growth (PIRG %). **All** the yeast isolates showed antagonistic activity against *C. gloeosporioides* according to the analysis (One way ANOVA, P = 0.03), but the yeast isolate Y162 showed the highest mean PIRG % of 57.33%. Interestingly, yeast isolate Y162 showed a higher mean PIRG % when compared to the positive control (29.67%). So the results of the current study revealed that the yeast isolate Y162 has the best antagonistic activity against *C. gloeosporioides*. Therefore, further studies are required to identify the yeast Y162 and its mechanism of inhibition, which would lead to the production of a commercial biological control agent for Anthracnose caused by *C. gloeosporioides*.

Keywords: Anthracnose, *Colletotrichum gloeosporioides*, Fucanazole