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**Host Specificity of *Colletotrichum gloeosporioides* and  
*Botryodiplodia theobroma* Isolates from Mango, Papaya and  
Rambutan and their Response to *Trichoderma harzianum***

SHANTHI WILSON WIJERATNAM, YASODHA DHARMATILAKA, DEEPTHI WEERASINGHE

*Industrial Technology Institute, Post-Harvest Laboratory, Food Technology Section, Sri Lanka*

**Abstract**

Anthrachnose (*Colletotrichum gloeosporioides*) and stem end rot (*Botryodiplodia theobromae*) are the two most prevalent post harvest diseases that contribute significantly to post harvest loss of Papaya, Mango and Rambutan in Sri Lanka. The problem is compounded by the home garden system of horticulture practised in Sri Lanka. The objective of this study was to test the ability of these pathogens to cause disease by cross infection between crops and to provide information that would facilitate an integrated non chemical means of controlling post harvest loss due to disease. Thus *C. gloeosporioides* and *B. theobromae* were isolated from respective disease carrying mango, papaya and rambutan fruits. Pure cultures of each isolate were maintained on Potato Dextrose Agar at 28°C. The antagonistic effect of a local isolate of *Trichoderma harzianum* was tested via *in vitro* bio assays against the above isolates. Host specificity trials were conducted on mango (var. Karthakolomban) and papaya (var. Red Lady) at the 10% – 25% stage of maturity and rambutan (cv. Malwana special selection), at full ripe stage. Cross inoculation potential of isolates was confirmed by testing the ability of the respective organisms to produce characteristic disease symptoms when inoculated onto each of the above host tissue. Lesion diameter was recorded over 5 days with fruits incubated at 28°C ± 2°C. *T. harzianum* was observed *in vitro* to be antagonistic to all isolates of the respective anthracnose and stem end rot causing pathogens. While the three *C. gloeosporioides* isolates produced disease lesions on all hosts, respective isolates were observed to produce larger lesions (diameter 2.9cm – 5.8 cm) on their original host compared with the alternate hosts (diameters 1.1 cm – 2.6 cm). However, the three *B. theobromae* isolates were equally effective in causing stem-end rot on the three hosts examined.

**Keywords:** *Colletotrichum gloeosporioides*, *Botryodiplodia theobromae*, host specificity, mango, papaya, rambutan, *Trichoderma harzianum*