POTENTIAL USE OF BACTERIAL ANTAGONISM FOR SUCCESSFUL MANAGEMENT OF PANAMA DISEASE IN BANANA CAUSED BY *FUSARIUM OXYSPORIUM* F SP. *CUBENSE*

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Panama disease caused by *Fusariumoxysporium* f sp. *cubense* is one of the destructive diseases in banana. This fungus enters through the roots and blocks the xylem vessels. It causes disruption of the flow of water and nutrients through the plant. Control of this disease by chemicals is very difficult. Therefore, it is important to apply biological control methods. Antagonism is the action of microorganisms that suppress or interfere the normal growth and function of a particular plant pathogen. There is a potential of applying antagonistic bacteria to manage this fungus as biological control method. Antagonistic species like *Pseudomonas* and *Bacillus* are mainly used for the antagonism. The objective of this study was to isolate and identify the potential antagonistic bacterial species to manage Panama disease in banana in Sri Lankan setting. Roots with rhizospheric soil and leaves were collected from healthy banana plants and cultured in KB and NA media to isolate rhizospheric bacteria, root endospheric bacteria and leaf endospheric bacteria. Antagonistic bacteria were identified using bio chemical tests and Polymerase Chain Reaction. *In vitro* test procedures were carried out in PDA and Mueller Hinton media to observe antagonistic activity of bacteria towards the fungus. Middle fungal disk and four bacterial spots were placed from same distance from the fungal disk. Inhibition zones were observed and radii of the fungal colonies were measured. The bacterial colonies exhibiting inhibition zones and significant differences of radii when calculate the p values using Excel, were considered as antagonists. Pot trials were carried out to find the effectiveness of isolated bacteria as an observational trial. Two months after application, brown discoloration of the stem was observed. Six *Bacillus* sp. isolates and one *Pseudomonas fluorescence* isolate showed suppression of growth of *Fusariumoxysporium* f sp. *Cubense* under *in vitro* test. In pot trials, brown discoloration was not observed in antagonistic bacteria applied banana plants.

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