

B -050

The ability of two antagonists *Flavobacterium sp.* and *Pantoea agglomerans* to control crown rot of banana compared to a chemical control

A standard bioassay screening procedure was carried out to evaluate efficacy of three application methods of each antagonist *Flavobacterium sp.* and *Pantoea agglomerans*, on growth of banana pathogen *Colletotrichum musae*. The methods used were, live cells (10^7 cells/mL) in sterile distilled water-T₁, live cells in spent culture medium (Nutrient broth)-T₂ or cell free spent culture medium (CFCM, Nutrient broth)-T₃. Their effects were compared with that of the agrochemical, Thiabendazole (300 ppm) -T₄ and distilled water-T₅. Banana peel discs (n=240) were dipped (20 seconds) in one of the above preparations 1 h prior to inoculating the pathogen (10^5 conidia/ml) in three trials, each

with 16 replications. All treatments showed significant ($P < 0.05$) reduction in disease development except CFCM. Thiabendazole showed the highest efficiency with 100% control 5 days after inoculation. Both antagonists were also significantly ($P < 0.05$) effective in T_1 and T_2 .

Crown rot severity on banana hands ($n=6$) was significantly ($P, 0.05$) reduced when treated with live cells (10^7 cells/mL) of each antagonist in sterile distilled water. However, live cells in spent culture medium, significantly ($p < 0.05$) decreased biocontrol efficacy of both antagonists. The additional nutrients appeared to help the growth of the pathogens as seen by increased disease development.