P.26 - Antagonistic effect of Trichoderma harzianum on pineapple black rot pathogen Thielaviopsis paradoxa

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A local isolate of *Trichoderma harzianum* was tested against *Thielaviopsis paradoxa* (teleomorph = *Ceratocystis paradoxa*) isolated from a diseased pineapple and established as an antagonist of the pathogen. Assays for antibiosis were conducted using culture filtrates of the antagonist grown in beer must (BM) as the highest number of colony forming units (cfu) of $2.8x10^6$/mL, and the highest biomass of 7.425g were observed in this medium 144 hours after inoculation. While the culture filtrates had no inhibitory effect, the unfiltered broth of *T. harzianum*P3 showed total inhibition. The fungicidal effect of the antagonist was confirmed by the presence of coiling structures around the pathogen. Growth of *T. harzianum*P3 at 28°C on solid media was slow -10^7 cfu 2 weeks after inoculation and 1.4 x 10^9 cfu at 6 weeks in white rice medium. Finger millet, red rice and rice husk media were also tested. The effect of *T. harzianum*P3 treatment to pathogen-inoculated soil was tested. Boiling tubes sterilized with 20g soil were inoculated with the pathogen and incubated at 28°C for 7 days. Inoculated soils were checked for the presence of 10^4, 10^5 and 10^6 cfu/mL of the pathogen prior to addition of the test formulation of *T. harzianum*P3. Inoculated soils were checked weekly for surviving cfu/mL of the pathogen for a period of 10 weeks. The pathogen reached concentrations below disease causing levels (10^3 cfu/mL) at 6 – 10 weeks. This study indicates the possible use of *T. harzianum*P3 as a bio-control agent to control black rot disease of pineapple and BM as a potential medium for mass propagation of *T. harzianum*P3 in Sri Lanka. Further studies on the efficacy, shelf-life of the formulation and field trials are required.