INTEGRATION OF *Trichoderma harzianum* WITH SOME SELECTED FUNGICIDES IN THE MANAGEMENT OF SEED AND SEEDLING ROT DISEASE OF VEGETABLES IN THE EASTERN REGION OF SRILANKA.

By

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Abstract

Seed and seedling rot of vegetables are caused predominantly by *Rhizoctonia solani*, *Pythium*, *Sclerotium* and *Fusarium*, are the major obstacle of increasing vegetable production in many countries, are difficult to managed through one method of approach such as cultural practices, fungicide toxicants, host-plant resistance and fungi-toxicants. Therefore, its successful control needs integrated approach.

Trichoderma harzianum is the antagonistic fungi which can control these pathogens successfully. But, there is no information about which fungicide could be integrated with *T. harzianum*. This study was carried out to find the suitable fungicide, with *T. harzianum*.

Poison food technique was used to select the least toxic fungicides, to *T. harzianum* in *in-vitro*. Captan, Thiram, Benlate, Homai, Topsin and Diconil were tested at recommended rates by the DOA (1997) against *T.harzianum*. Radial mycelial growth was measured from each treatment, and the inhibition percentage of mycelial growth by different fungicides was calculated. To evaluate the integration of *T. harzianum* with selected fungicides, different combination of *T. harzianum* and fungicides (*T. harzianum* + Captan, *T. harzianum* + Thiram, *T. harzianum* + Benlate and *T. harzianum* +Diconil) were tested against the seed and seedling rot of brinjal in pot experiment, at Agronomy farm, Eastern University. To evaluate the seed and seedling rot disease incidence, germination percentage and percentage of disease incidence were recorded.

Optimum sporulation period of *T. harzianum* with different fungicides were analysed.

In invitro test, *T. harzianum* was low sensitive to Captan and Thiram (24.38%, 33.12%). However, it was extremely sensitive to Topsin and Homai (100% and 100%). In pot experiment, integration of *T. harzianum* and Captan showed best performance than the other treatments (disease incidence% 5.33).

According to the evaluation of optimum sporulation time period, *Trichoderma* alone gave optimum sporulation during 3-4 weeks after application and the combination of *Trichoderma* + Captan, *Trichoderma* + Thiram, *Trichoderma* + Diconil and *Trichoderma* + Benlate gave optimum aporulation at 1-3 weeks after application.

This study concludes that, Captan and Thiram could be selected for integration with *T. harzianum* in the IDM system.

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