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FEASIBILITY OF USING *Trichoderma koningii* AND FUNGICIDE (CAPTAN) IN THE CONTROL OF ONION DISEASE CAUSED BY *Fusarium solani*

BY

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ABSTRACT

Fusarium rot caused by *Fusarium solani* is the predominant disease in Onion cultivation in the Eastern region of Sri Lanka.

Laboratory and field studies were carried out at the Eastern University, Sri Lanka, during the period of February to July, 1993, on the control of this pathogen, *F. solani*.

Distribution of soil inhabiting beneficial and pathogenic micro fungi, feasibility of using *Trichoderma koningii* to control *F. solani*, effect of *F. solani* on the water absorption of onion plants, mode of infection of *F. solani*, combination of captan and *T. koningii* in the control of *F. solani* and the method of captan application in the field were tested.

Fusarium species, *Alternaria* species, *Helminthosporium* species, *Curvularia* species, *Trichoderma koningii*, *Aspergillus niger*, *Aspergillus flavus*, *Pythium* species, and *Choanephora* species, are the predominant fungi found in sandy soil in this area.

T. koningii effectively ($P < 0.05$) controlled the growth of *F. solani* *in vitro* and the optimum concentration to control *F. solani* *in vitro* was found to be 3.9×10^5 spores/ml.

Infection of *F. solani* reduced the water absorption of Onion plants and it was found to be a soil borne pathogen.

Combination of Captan and *T. koningii* reduced the dry weight of bulbs when applied to control *F. solani*. However, *T. koningii* increased the dry weight of bulbs when they were applied to soil without treating the bulbs with Captan. Seed treatment with Captan gave better performance than soil drenching method of Captan application in this sandy soil.

It is concluded that Captan as seed treatment could control *F. solani* and *T. koningii* could be used alone to control *F. solani* as well as to increase the plant growth.

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