

## Biological Control of Onion Basal Rot Disease by Antagonistic *Trichoderma* spp.

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The antagonistic activity of *Trichoderma* spp. against *Fusarium oxysporum* is well known (Sivan and Chet, 1989). In the present study, an attempt was made to use *Trichoderma* spp. against *Fusarium oxysporum*, the soil borne pathogen causing basal rot disease in onion.

*Trichoderma harzianum* and *T.viride* were isolated from onion fields. The inhibition of mycelial growth of *F.oxysporum* by the antagonists was studied on PDA medium using co-culture technique. Three replicates were maintained. After three days of incubation, the radial mycelial growth in mm was measured. For soil amendment studies, about 500 g of field soil was inoculated with 10 ml of 10 day - old *F.oxysporum* culture on PD broth and incubated for 5 days. Healthy onion bulbs were surface sterilized with 0.1% mercuric chloride solution and sown. Disease severity index was calculated by counting the number

of infected plants after 30 days. To the infested soil, 10 ml of spore suspension ( $1 \times 10^6$  conidia/ml) of *Trichoderma* spp. was added at the time of sowing.

In co-culture test, both *T.harzianum* and *T.viride* inhibited the growth of *F.oxysporum*. *T.viride* showed inhibition zone of 9.5 mm and *T.harzianum* showed 9.2 mm. In the paper disc method, *T.viride* showed inhibition zone of 7.0 mm and *T.harzianum* showed 6.2 mm zone. Addition of *Trichoderma* to soil brought down the incidence and severity of the basal rot disease. The basal rot incidence was 40 per cent in *T.viride* and 38 per cent in *T.harzianum* soils. In untreated soil, the incidence was 90 per cent. Antagonism of *Trichoderma* sp. to *F.oxysporum* was also reported by earlier workers (Sivan and Chet, 1989; Mukhopadhyay, 1987). The data show that *Trichoderma* spp. can be used in the management of onion basal rot disease.

Key Words : *Trichoderma harzianum*, *T.viride*, *Fusarium oxysporum*, onion basal rot

### REFERENCES

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