

Effect of times and levels of inoculum of *Trichoderma* for controlling root rot and collar rot of lentil

ABSTRACT

The experiments were carried out during 2010 to 2011 to find out the time of application and level of inoculum of *T. harzianum* for controlling root rot (*F. solani*) and collar rot (*S. rolfsii*) of lentil (*Lens culinaris* Medik). *F. solani* and *S.rolfsii* and their antagonist, *Trichoderma* were collected from different pulses growing areas of Bangladesh. The experiments were carried out following CRD with five replications. Fourteen isolates of *Trichoderma* were tested against *F. solani* and *S. rolfsii* under Dual Culture Technique. The inhibition was ranged from 60.42 to 99.27% at 10 DAI against *F. solani* and from 64.07 to 99.41% at 6 DAI against *S. rolfsii*. The highest inhibition 99.27% against *F. solani* was found in isolate, Th-2 and 99.41% was found in isolate TG-2 against *S. rolfsii*. In the pot, the treatment of soil with the Th-2 isolate of *T. harzianum* at 2g/kg shown the highest germination (96.67%) and plant stand (81.67%) and the lowest root rot (15.52%), where the isolate of TG-2 of *T. harzianum* at 20g/kg of soil was observed better for controlling *S. rolfsii*. *T. harzianum* (Th-2) increased germination (17.86%), plant stand (171.43%), vigour index (33.27%) and yield (260.74%) over control against root rot. *T. harzianum* (TG-2) also increased germination (248%), plant stand (600%), vigour index (865.91%) and yield (1209.81%) of lentil over control against collar rot. The soil treatment with *Trichoderma* at 9, 6 and 3 days before sowing and also at the time of sowing showed significantly better effect in increasing germination, plant stand and reducing root rot and collar rot compared to control. The highest germination, seed yield and lower root rot was obtained by treating soil with *Trichoderma* before 9 days of sowing against both the pathogens.

Keyword: Biological control; Collar rot; *Lens culinaris*; Root rot; Soil treatment; *Trichoderma*