In vitro screening of *Trichoderma* species against (*Fusarium oxysporum* f. sp. *cepae*) and (*Colletotrichum gloeosporioides*) on red onion in Jaffna

Vigitha. N., Pakeerathan. K., Mikunthan. G.

Department of Agricultural Biology, Faculty of Agriculture, University of Jaffna, Jaffna, Sri Lanka

Abstract

Fungal diseases, basal rot (*Fusarium oxysporum* f. sp. *cepae*) and leaf twister (*Colletotrichum gloeosporioides*) are the main problem in red onion cultivation in Jaffna, Sri Lanka. Disease symptoms of leaf twister were identified as initial appearance of leaf curling, twisting, chlorosis and abnormal elongation of the pseudo stem and with time withering and decaying of whole leaf blades. Rotting of basal plates and appearance of white mycelium are unique to the basal rot disease. This research was carried out to provide biological alternate for harmful fungicides by using different species of *Trichoderma*. Different combinations of the pathogen and bioagents such as *Fusarium oxysporum* f. sp. *cepae* (Fo): *Trichoderma viride* (Tv) at 1:1, 1:2, 1:4, 4:1, and 1:0 as control were tested as treatments with five replicates. *F. oxysporum* f. sp. *cepae* was also tested with *Trichoderma harzianum* with the same ratios. Similar experiment was also conducted for *C. gloeosporioides*.The results showed that *F. oxysporum* f. sp. *cepae*: *T. viride* (1:4), *F. oxysporum* f. sp. *cepae*: *T. harzianum* (1:4) and *C. gleosporioides*: *T. viride* (1:4) yielded growth inhibition of 89.72%, 88.36% and 92.52% compared with untreated control. Both species of *Trichoderma* controls *F. oxysporum* f. sp. *cepae* efficiently, where as *T. viridae* is the best to control the *C. gloeosporioides* than *T. harzianum*.