

Augmenting the Antagonistic Potential of Consortia of Bio-Control Agents and Organic Amendments to Combat Dry Root Rot in Black Gram (*Vigna mungo*) Caused by *Rhizoctonia bataticola*

Latha, P.

Department of Plant Pathology, Tamil Nadu Agricultural University, India
Corresponding email: patlatha@rediffmail.com

The production of pulses in India has been hampered by many biotic and abiotic stresses. The diseases afflicting pulses including black gram have increased the cost of cultivation of farmers thereby render them indebted. In order to help pulse farmers with a cost effective method to tide over dry root rot in blackgram (*R. bataticola*) a study was commissioned with the objective of developing and testing the efficiency of a consortia of bio-control agents in controlling root rot. The study results revealed that, among the ten *Trichoderma* isolates tested, TvL1 recorded the least mycelial growth with 55.6 % inhibition over control. Out of twenty *Pseudomonas* isolates tested, PfUL(A) recorded maximum inhibition (41.1 %) of *R. bataticola* mycelial growth whereas the isolate *Bacillus subtilis* BsOP2 recorded maximum inhibition (44.4 %) of growth of mycelia of root rot. The result from the pot culture experiment revealed that the mixture of PfUL(A) + BsOP2 + neem cake + farm yard manure (95 %) reduced the disease incidence to 20 % and this combination recorded significantly higher germination percentage when compared to control (71.7 %). The greatest reduction in per cent disease incidence of dry root rot was observed in plots treated with the mixture of PfUL(A) + BsOP2 + neem cake + FYM (25.65 %) followed by PfUL(A) + TvL1 + neem cake + FYM (29.0 %) compared to the untreated control (55.85 %). The percent disease index recorded with respect to chemical control was 24.85 %, which indicated that it was on par with the biocontrol agents in terms of reducing disease incidence. Despite the chemical treatment fared well in reduction of disease, the biocontrol agents are preferred over chemical treatment due to their environmental friendliness. The study results reaffirmed that the consortia of bio control agents PfUL(A) + BsOP2 along with neem cake and FYM were found to be effective in controlling the dry root rot disease in black gram.

Keywords: Bio control agents, Black gram, Dry root rot, *Rhizoctonia bataticola*