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RESEARCH ARTICLE

Population of root knot nematode, *Meloidogyne incognita* and yield in tomato using various \bio agents under pot culture conditions

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SUMMARY

Tomato (*Solanum lycopersicum*) is one of the most important vegetable which has a great economic importance and also has a high processing value. Tomatoes are susceptible to root-knot nematode (*Meloidogyne incognita*) leading to a great economic loss. The life cycle of root-knot nematode takes about 25 days to complete. Second stage juveniles J2 initiate infection in the host. Root-knot nematodes constitute a major group of plant-parasitic nematodes causing extensive economic damage ton early all crop plants of economic importance in both tropical and sub-tropical crop production regions all over the world (Sikora and Fernandez, 2005). The efficacy of different bioagents like *Trichoderma viride, Bacillus subtilis, Pochoniachlamy disporia, Purpureocillium lilacinum* against *Meloidogyn eincognita* was estimated under four replications and assessment of plant morphometric characters and root knot index under pot culture conditions has been recorded. All the four bioagents were tested *in vitro* to study their efficacy against *Meloidogyne incognita.* Among all the bioagents tested, *Purpureocillium lilacinum* treatment showed significant increase in root length and shoot length (40.20cm and 76.20cm, respectively) and the untreated control plants recorded the least roo tlength and shoot length (19.11cm and 21.30cm). All the treatments were found to reduce nematode population in roots and highest reduction was noticed in *Purpureocillium lilacinum* treated plants (178.50 and 141.20) soil (250g) and root (5g), respectively. The untreated plants recorded the highest nematode population of 1314.14 and 1411.20 in soil (250g) and root (5g), respectively. Significant reduction in root knot index (1.2) were observed in the treatment *Purpureocillium lilacinum* and Carbofuran which recorded (2.0) per cent. The untreated control plant roots showed root knot index of 5.00 per cent.

Key Words : Root knot nematode, Tomato, Bio agents

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