Evaluation of rhizobacteria as resistance inducers or bio-control agents for the control of Meloidogyne incognita in tomato

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Abstract

Bacterial strains Bacillus brevis, B. cereus, B. firmus, Klebsiella planticola, Lactobacillus agilis, L. fermentum, Methyloomonas methanica, Neisseria elongata, Obesumbacterium proteus and Pseudomonas aeruginosa recovered from tomato rhizosphere and tested for their ability to induce systemic resistance or bio-control agent against Meloidogyne incognita in tomato under greenhouse condition. Results showed that all tested bacterial strains showed significant reduction in nematode development and reproduction. The most effective strains were M. methanica, B. cereus, B. brevis and O. proteus. They were achieving the highest reduction in nematode total population and fecundity. Plant growth was improved as a result of application of rhizobacteria. Antioxidant enzymes activity for both peroxidase and polyphenol oxidase were elevated in bacteriaized plants as compared nematode infected plant as well as total phenol content. Results revealed that crude culture suspension of bacteria was more effective for reducing nematode population followed by cell-free culture filtrates, bacterial live cells and bacterial dead cells, sequentially. It was concluded that bacteria has induced tomato resistance or bio-control effects against M. incognita in tomato.