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Investigation of Clubroot Disease Occurrence under Chemical and Organic Soil Environment

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Abstract : Clubroot is a disease of cruciferous plant caused by soil born pathogen Plasmodiophora brassicae and can significantly limit the production through rapid spreading. The present study was designed to investigate the effect of cultivation practices (chemical and organic soils) on clubroot disease development in Brassica rapa. Disease index and root bacterial composition were investigated for both chemical and organic soils. The bacterial biomass and diversity in organic soil were higher than those in chemical soil. Disease severity was distinct for two different cultivation methods. The number of endophytic bacteria decreased in the infected root for both soils. The increased number of endophytic bacterial number led to reduce the proliferation of pathogen spore inside the root and thus reduced the disease severity in organic plants.

Keywords : clubroot disease, bacterial biomass, root infection, disease index, chemical cultivation, organic cultivation
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