



Role of plant growth promoting rhizobacteria for sustainable production of horticultural crops in replant sites

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Abstract:

Replant problem is a serious problem and a common cause of poor growth and production of horticultural crops planted in old orchard sites. It is distributed worldwide and is often encountered in establishing new orchard sites. The consequent decrease in crop production and growth is also referred to as specific replant disease (SRD). It is a complex disease syndrome whose etiology is still unclear, but may relate to complex number of reasons one of which is the excess and imbalanced use of chemical fertilizers. Intemperate use of agrochemicals has deteriorated the soil health and quality leading to reduction in the horticultural crop production. Thus the negative impacts of green revolution have increased the need of plant growth promoting rhizobacteria for sustainable agriculture. Improvement in agricultural sustainability requires an understanding of microbial diversity as it is considered important and useful to arrive at measures that can act as indicators of soil quality and plant productivity. Plant Growth Promoting Rhizobacteria are a group of bacteria that actively colonize plant roots and increase the plant growth and yield by various direct and indirect mechanisms such as phosphate solubilization, production of plant growth regulators viz. auxins, cytokinins and gibberellins, biocontrol activities like antifungal activity, protease production, siderophore production and HCN production. The use of PGPR in agriculture Plant growth benefits due to the addition of PGPRs includes increase in germination rate, root and shoot growth, yield, leaf area, chlorophyll content, tolerance to drought and shoot and root weight, apart from providing an attractive way to replace chemical fertilizers, pesticides, and supplements.



Biography:

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