PLANT GROWTH-PROMOTING RHIZOBACTERIA (PGPR) FOR SUSTAINABLE AGRICULTURE

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PGPR in Groundnut: opportunities and challenges

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Abstract

Groundnut (*Arachis hypogaea* L.) is an important food legume in Asian countries earning a lot of revenue. In the semi-arid tropics, the production levels of groundnut are hampered majorly by foliar and soilborne diseases incited by fungal pathogens. Present management of these groundnut diseases using chemical fungicides has environment related concerns. More over the labeled fungicides are very expensive and can not affordable by resource poor small and marginal farmers. Use of bacterial antagonists such as plant growth-promoting rhizobacteria (PGPR) as a viable alternative to chemical management of these groundnut diseases is an emerging concept. In this paper, the scope, potential and future prospects of using PGPR as antagonists to manage these foliar and soilborne diseases is discussed in detail. Elaborate review on the challenges encountered by native and introduced PGPR strains in the micro climate of groundnut ecosystem was presented. Current trends on PGPR based disease management, success stories on suppression of foliar and soilborne diseases in groundnut are elaborated. The current research activities at International Crops Research Institute for the Semi-Arid Tropics (ICRISAT), India in the management of these foliar and soilborne diseases with emphasis on early and late leaf spots induced by *Cercospora* spp., stem rot (*Sclerotium rolfsii*), collar rot (*Aspergillus niger*) and aflatoxin contamination problem are presented.