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SCREENING AND CHARACTERISATION OF ACC DEAMINASE PRODUCING BACTERIA FROM RHIZOSPHERE OF SUNFLOWER *HELIANTHUS ANNUUS* L.

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ABSTRACT

Due to the adverse effects of polluting chemicals and other stresses the growth of various crop plants is affected. The activity of soil microbes sometimes helps to combat such stress effects.One such activity is the production of ACC (1-Aminocyclopropane-1-Carboxylic acid) deaminase by microorganisms particularly under unfavourable environmental conditions such as flooding, heavy metals, phytopathogens, drought and high salt. Ethylene is an important phytohormone, but over-produced ethylene under stressful conditions can result in the inhibition of plant growth or death, especially for seedlings.This study was undertaken to isolate ACC deaminase producing bacteria from the rhizosphere and associated regions of an important oleaginous plantSunflower (Helianthusannuus L). Pseudomonas and Enterobacter species showed good growth when grown in DF salts minimal mediumandNFb medium amended with ACC as a sole source of Nitrogen. Root elongation was also observed in Pseudomonas and Enterobacter species. These bacteria were also promoting growth during early stages. Such bacteria could be used for plant growth promotion under stressful conditions and even in several bioremediation studies.

KEYWORDS: Phytopathogens; Ethylene; Phytohormone; ACC Deaminase

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