

عنوان مقاله:

Promotion of Wheat Growth under Salt Stress by Halotolerant Bacteria Containing ACC deaminase

محل انتشار:

مجله علوم و فناوری کشاورزی، دوره 18، شماره 3 (سال: 1395)

تعداد صفحات اصل مقاله: 10

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خلاصه مقاله:

Salinity is a major abiotic stress that reduces crop productivity in arid and semiarid soils. About ۲۵% of the country's arable land is affected by different levels of salt. A considerable part of this land is under wheat cultivation each year as the country's most important crop. ACC deaminase producing bacteria increase plant resistance to stress condition by reducing stress ethylene in a variety of environmental stresses such as salinity. In this study, ۱۶۷ halotolerant bacterial strains were isolated from the saline habitats and screened for growth at different NaCl concentrations. These halotolerant bacterial strains were then tested for ۱ AminoCyclopropane-۱-Carboxylic acid (ACC) deaminase activity. Among six isolates of halotolerant bacteria containing ACC deaminase, the KY۸ strain produced the highest level of this enzyme. Phylogenetic analysis of the ۱۶S rRNA gene sequence of this bacterium indicated that this strain belonged to *Bacillus mojavensis*. Inoculation of *Bacillus mojavensis* to salt stressed wheat plants produced an increase in root and shoot weight, chlorophyll content, and nutrient uptake in comparison with the un-inoculated soils. In summary, this study indicates that the use of ACC deaminase-producing halotolerant bacteria mitigates salinity stress effects on growth of wheat plants by reducing salt-stress-induced ethylene production.

کلمات کلیدی:

Abiotic stress, *Bacillus*, Ethylene production, Root growth, Salinity

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