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having sizable salt affected lands on demand, to improve their socioeconomic conditions.

Mitigation of Salt Stress in Maize through Rhizobacteria Containing ACC-Deaminase in Salt Affected Fields

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Plant growth promoting rhizobacteria (PGPR) capable of producing ACC-deaminase and exopolysaccharides enhance plant growth by cleaving plant-produced ACC (the immediate precursor of ethylene) through their ACC-deaminase activity and by restricting (Na^+) uptake through their exopolysaccharides production. Efficacy of such PGPR strains for alleviating salt stress and consequently improving the growth and yield of wheat was evaluated under salinity stress. Ten rhizobacterial strains were screened for their growth promoting activity by conducting jar experiment under gnotobiotic conditions at (original) 1, 5, 10 and 15 dS m^{-1} salinity levels. Two most promising strains (*Pseudomonas putida* and *Serratia ficaria*) from the axenic study were evaluated by conducting a pot and field trials under salt-stressed conditions. Results showed that although salinity depressed the growth of wheat seedlings, but inoculation reduced this depressing effect and improved the growth and yield of wheat compared to uninoculated control. *Pseudomonas putida* significantly increased the yield and yield- contributing parameters compared to uninoculated control. Inoculated plant showed a significant decrease in plant Na^+ content as well as increase in K^+, relative water and chlorophyll contents compared to uninoculated control. Classical "Triple" response Bioassay was also conducted to evaluate the efficacy of selected strains for eliminating harmful effect of stress (salt)-induced ethylene on plant growth. These studies revealed that negative effects of salinity stress could be partially eliminated through inoculation with PGPR containing ACC-deaminase and exopolysaccharides activity.

Salt and Drought Stress Effects on Kochia (*Kochia Scoparia* L. *Schrad*) Production in Summer Cropping

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In order to studying the effects of salt and drought stress on biomass and seed production of kochia, six experiments with 1.5, 7, 14, 21, 28 and 35 dS/m of saline water (drainage water) was conducted individually. In each experiment three levels of water quantity (25, 75 and 125% of water requirement) was done based on randomized completely block design with three replications in Mazrae Nemoneh research station in north of Iran in 2008. The result of combined analysis six experiments showed that saline water had significantly effect on seed yield, lateral stem number, plant height and stem dry weight. Leaf dry weight and biomass production was affected by water quality and quantity significantly. There was not any significant difference between water quality and quantity. Effect of saline water was not significant up to 7 dS/m and saline water threshold tolerance of this mesohalophyte (*Kochia scoparia*) in this research was 7 dS/m and 50% reduction of seed yield was at 38.16 ± 3.53 dS/m. Water use efficiency (WUE) based on seed yield reduced with increasing salinity and water use. The highest WUE was observed at 7dS/m and 25% water use and the lowest was at 125% and 35 dS/m of saline water.

Selection Criteria of Wheat Genotypes under Salt Stress in Golestan Province

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Almost half of agricultural lands in Iran are saline and it is one of the most important constraints in cultivated lands. Wheat is the most important crop in saline lands in rotation of Golestan province. Since saline soils amelioration is so expensive, achievement of genotypes with tolerant and high yield potential is essential. 22 genotypes of selective wheat of recent experiments with three local check (Zagros, Kavir and promising line of no. 4) were cultivated in two location contain saline research station of Ag-Galah (saline condition) and Gorgan research station (non saline condition) in 2007 with three replications in latis experiment. The results of simple and combined analysis in two locations showed significant difference between genotypes. Significant correlation between