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EFFECT OF BRACKISH IRRIGATION ON THE GROWTH OF SOME MUTANT BARLEY

Increasing agricultural production in an arid land like Kuwait is a major challenge owing to its harsh environmental conditions. A study was implemented by the Desert Agriculture and Ecosystems (DAEP) programme at the Kuwait Institute for Scientific Research (KISR) as part of an IAEA Coordinated Research Project to test the growth and performance of mutant barley lines in Kuwati agronomic practices/conditions. The main objective was to evaluate the performance of four mutant lines along with 11 other genotypes of barley grown under irrigation with brackish water. A split plot design with three replicates was used to ascertain the effect of fresh and brackish irrigation on fifteen barley genotypes including four mutant genotypes with the parental lines and six local genotypes were used to select the best varieties with maximum yield adapted to Kuwait environmental condition. Salt stress adversely affected the overall growth and reproductive capacity of the cultivars under study soil, as it decreased almost all the growth and yield attributes under study such as heading and maturity dates, plant height by 37%, number of kernels/spike, 1,000-kernel weight by 27.4%, grain yield and straw yield15%. Number of spikes/m2 was significantly affected by the type of irrigation water and was decreased by 41.2% the results showed insignificant interaction between irrigation and cultivars. The type of water irrigation had significant effects on the number of kernels per spike in all barley cultivars under study. Brackish water decreased the number of kernels per spike by 15%, and grain yield was decreased by 19.9%. Mutant lines showed good performance under brackish irrigation in Kuwait.

Country or International Organization

Kuwait Institute for Scientific Research

Author: Ms AL-RAGAM, Ouhoud (Kuwait Institute for Scientific Research)

Co-authors: Mr AL-SHATTI, Abdullah (Kuwait Institute for Scietific Research); Prof. AL-MENAI, Habibah (Kuwait Institute for Scientific Research)

Presenter: Ms AL-RAGAM, Ouhoud (Kuwait Institute for Scientific Research)

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