

Effect of Salinity on Sugarcane (*Saccharum officinarum*) yield and sugar quality under Messan environmental factor

H. R. Majed* , Mohanad A. Alsulaiman* , N.E. Hmmod**

*Field crop department / agriculture colleges / Basra university

** Agriculture research /Sugar Mill Company

Abstract

This experiment was conducted in order to determine the effect of raising Salinity at Sugarcane fields of Messan company during the Season of 2006-2007. Three levels of salinity of (7.8-6.1), (5.9-5.2) and (4.9- 3.5) ds/m were chosen in the field and were characterized as high, medium and low salinity, respectively. Randomized completely block Design were used with three replicated. The results showed that, planting in high salinity caused 52.3% reduction in Cane yield also medium salinity lead to 40.8% reduction in Cane yield comparing to low salinity soil. Also the results showed that there were a negative correlation between salinity and yield and some growth attributes which were -0.89 , -0.93 , -0.90 , -0.92 and 0.86 with soil salinity levels and Cane yield ,Salk/m[^] ,Salk length, Internode length and Stalk diameter, respectively. The results also showed that there was a reduction in sucrose percentage and increase non sucrian material as sugarose percentage decrease from 17.32% to 10.4% and thus the purity percentage decreased from 83.9% to 55.7% when planting of field with high salinity compared to low salinity level. Also the study showed that increased soil salinity caused high increase in Cane juice Salinity. It was concluded that in order to improve productivity and Quality of Sugarcane growing of Messan Salinity should be Managed.

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Key words; *Saccharum officinarum*; salinity; yield and sugar quality