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RESPONSE OF SOME SUGAR BEET VARIETIES TO DEFICIT IRRIGATION AND HUMIC ACID IN A NEWLY RECLAIMED SOIL

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ABSTRACT

The current study was conducted to investigated the response of some sugar beet varieties grown in newly reclaimed soil to different levels of irrigation and humic acid. Two field experiments were carried out at Al Hussein collective farm for Land Reclamation, Giza Governorate, at 60-km of Cairo-Alexandria road (latitude of 30^0 36\ N and longitude of 31^0 1\ E) in 2016 and 2017 winter seasons. The investigation included the combination of four water irrigation levels of 100, 90, 80 and 70 % crop evaporation (Etc) using drip system, two humic acid rates (zero and 2.5 kg/ fed) and three multi-germ sugar beet varieties namely (Oscarpoly, Gazilla and Farida).

The results showed that the treatments of moisture stress exhibited different effects on sugar beet parameters under estimation. The application of water at 80% Etc had the favorite effect on sucrose%, while the intact water amount (100% Etc) achieved the highest root and sugar yield values. There was appositive effect of humic acid application on all studied qualitative and quantitative parameters of sugar beet, except extractable sugar and sugar lost to molasses in the 1^{st} season only. Also, the application of humic acid increased water use efficiency for sugar and root yield compared to the control. The three used varieties differed in sucrose, extractable sugar and sugar yield.