



Salinity is alleviated by application of potassium nitrate in sweet corn

The effect of salinity and KNO_3 levels in sweet corn (

Zea mays

cv Jubilee) was investigated in two experiments. The experiments were carried out in an unheated greenhouse in Bet Dagan, Israel, using an aero-hydroponic system. This system consisted of a 130-L covered container for the nutrient solution, a pump for its circulation, and boxes in which plants were grown. The roots were continuously sprayed with the nutrient solution. In each experiment, 15 treatments were tested: three KNO_3 levels (2, 7 and 13 mM in autumn and 2, 8 and 14 mM in spring), and five salinity levels (EC of 2, 5, 7, 10 and 12 dS/m).

Fresh ear yield at any KNO_3 level decreased linearly as the EC (dS/m) was elevated beyond a certain threshold value. In spring the interaction between EC and KNO_3 was significant, resulting in a stronger reduction in yield due to increase in EC as KNO_3 increased from 2 to 8 to 14 mM. In both experiments, increasing KNO_3 concentration from 2 to 14 mM increased dry matter production and ear yield, while increasing salinity reduced them. According to the researchers this result indicated that at appropriate KNO_3 nutrition the detrimental effect of salinity on ear yield is delayed.