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EVALUATION OF PHYSIOLOGICAL ASPECTS OF STRESS TOLERANCE IN WHEAT

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ABSTRACT

An experiment to assess the effect of salinity and hypoxia and their interaction was carried out using four wheat varieties i.e. SARC-1, SARC-3, Pb-85 and 7-Cerros. There salinity levels viz. control (non-saline), moderately saline (75 mol m^{-3} NaCl) and highly saline (150 mol m-1 NaCl) were developed in plastic pots filled with Hoagland solution for nutrition. Aerobic and hypoxic conditions were developed in replicated C. R. Design. Plants were harvested after four weeks of transplantation. Observations for root length, shoot dry weight, sodium, potassium and chloride concentrations were made. Root length and shoot dry weight decreased with combined effect of salinity and hypoxia. SARC-1 had the maximum root length at higher salinity while Pb-85 at moderate salinity. SARC-3 showed minimum relative reduction in dry weight under highly saline aerobic conditions. It was observed that better tolerance to salinity and hypoxia in Pb-85 was due to less sodium and chloride and more Potassium uptake.