

EFFECT OF DIFFERENT SALT CONCENTRATIONS ON THE RESISTANCE OF MAIZE CULTIVARS

2. Some Physiological Characteristics and Ion Accumulation in Early Growth

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ABSTRACT

Nine different maize cultivars Lr Armigo, Pollen, C-955, Frassino, Güneş-626, Goldeliza, Apache, LG-55 and Flash were grown in water culture (Hydroponic) salinized with 25, 50, 75 and 100 mMol NaCl and tested for salt tolerance during germination, emergence and early growth stages. Chlorophile a and b content in leaves, membran integrity and Prolin accumulation, Na⁺ and K⁺ accumulation in leaves, stems and roots were the tested properties.

There were a great variation among the cultivars in terms of Chlorophile a and b contents of leaves and membrane integrity as well as the prolin and Na⁺ and K⁺ accumulation in different plant parts. This variation mainly occurred in 75 and 100 mMol salt concentrations, whereas the differences were not significant for the same properties in 25 mMol salt concentration. Significant variation in salt concentration x cultivar interactions indicated that tested cultivars had diversity of performances with regard to the salt resistance (or tolerans) and Lr Armigo, Pollen, Flash and Güneş-626 cultivars were at the top of the rank.

Key words: Maize cultivars, hydroponics, salinity.