P 14. PHYSIOLOGICAL CONFIRMATION OF ROLE OF SALT TOLERANT GENES IN DEVELOPED TURKISH DURUM WHEAT GENOTYPE

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ABSTRACT: Environmental pollution, soil and water salinity leads to a reduction in global water resources. The decrease in the agricultural land due to the increasing human population is a major threat for agricultural sustainability. Various abiotic stresses such as strong winds, extreme temperatures, soil salinity, drought and floods affect the cultivation and production of agricultural products. Among different abiotic stresses, soil salinity is one of the most destructive environmental stresses for cultivated land area, which leads to a decrease in product yield and quality. A large part of Turkish soil has high pH and salinity characteristics. Therefore, plant nutrients are not available for plants in suitable forms. Being an important cereal for world including Turkey, it is beneficial to develop wheat genotypes that are tolerant to abiotic stresses. Given the absence of the D genome in durum wheat, it is less tolerant towards salt stress. Mirzabey, one of the most common durum wheat varieties produced in Turkey, and Australian durum wheat lines, 5004 and 5020-7 containing Nax genes were crossed and salt tolerance genes were transferred. Thus, in this study, Mirzabey genotype, 5004 and 5020-7 wheat lines, and 3rd generation back-crossed hybrid populations were used as the experimental material. Two salt doses, 0 mM NaCl and 100 mM NaCl, were administered. The growth parameters of the studied material and the leaf EC contents were examined. On the basis of the measured physiological parameters, the plants with the transferred salt tolerant Nax genes were more resistant towards salt stress.

Keywords: Durum wheat, salt stress, backcrossing, MAS