

P 12. PHYSIOLOGICAL INVESTIGATION OF DEVELOPED HYBRID BREAD WHEAT LINES UNDER HIGH BORON AND SALT APPLICATION

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ABSTRACT: In order to enable agriculture in the areas with restricted use for supporting the rapidly growing world population, there is a need to develop grain crops that can be grown in stress conditions. Wheat production is limited by many abiotic stresses, such as nutrients deficiency or toxicity. Stress conditions such as salinity and boron toxicity that are generally seen together in arid and semi-arid regions adversely affect the growth in plants and limit the production efficiency. Although most studies have been focused on the boron deficiency depending on the general soil situation in the world, it is known that plants are exposed to boron toxicity in many regions of the world including Turkey which has the richest boron deposits in the world. The most appropriate method towards boron toxicity and salinity problems is the identification and the development of boron and salt toxicity tolerant plants. In this study, it was aimed to develop tolerant bread wheat varieties that can be grown in the regions with boron and salt toxicity problems in soil. In the experiment, along with the salt tolerant Australian genotypes, boron toxicity tolerant Turkish genotype, Bolal and developed backcross3 wheat population (BC3) containing the salt tolerant Nax1 and Nax2 genes were involved. Hence, the effects of the functions of the salt tolerant genes present in the BC3 population on growth parameters and plant EC content were investigated in this study.

Keywords: Backcross, Boron Toxicity, Salt Stress, Bread Wheat, Breeding

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