

P 20. INVESTIGATION OF DROUGHT TOLERANCE MECHANISM IN THE ROOTS OF PUMPKIN GENOTYPES

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ABSTRACT: Drought is one of the most important factors affecting agricultural production within environmental components. Drought stress, when the usable areas in the world are classified according to natural stress factors, has the highest share (i.e. 26%). The product quality of the cultivated plants exposed to drought stress is adversely affected and leads to loss of productivity. For this reason, it is important to determine the plant species resistant to drought stress, to explain the tolerance mechanisms and to determine the factors that increase or affect the drought resistance of the plants. In this study, 6% PEG 6000 was applied in a Hoagland nutrient solution to create osmotic stress in pumpkin genotypes. In the study, the previously genetically determined sensitive genotype C-27 (*Cucurbita pepo* L.) and the drought-tolerant C-26 (*Cucurbita pepo* L.) genotype were used. Measurements of root size, and root fresh weight and root dry weight values of pumpkin genotypes increased compared to the control in the C-26 genotype while, decreases in the C-27 genotype were observed. It has been determined that PEG 6000 application increases H₂O₂ accumulation in pumpkin genotypes. In addition, it was determined that the scavenging activity of the pumpkin genotypes exposed to drought stress increased and that these increases were greatest in the C-27 genotype.

Keywords: Pumpkin, Drought stress, H₂O₂