

**P 19. INVESTIGATION OF THE CHANGES THAT OCCUR IN CARROT PLANT IN  
BORON DEFICIENCY AND TOXICITY CONDITIONS**

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**ABSTRACT:** Stress factors that affect the growth and development negatively and cause physiological and metabolic changes can lead to a decrease in product quality and quantity. As a result of the deficiency or toxicity of plant nutrients, the plant cannot fulfill its metabolic function. In our country's Central Anatolia Region, micro-elemental problems are experienced in a large proportion. Boron is one of these elements. Boron deficiency is observed in 26.6% of our region's soils and boron toxicity in 18%. For this reason, determination of mechanisms of resistance to boron deficiency and toxicity of plant species grown in the soils of our region play an important role. In this study, it is aimed to investigate the physiological changes of inadequate and toxic levels of boron applications, in the development of the carrot plant, which is important in our country and agricultural region. The Nantes-Orange Carrot variety, which is commercially important, was used in the study. After the seeds fully germinated into seedlings, Hoagland nutrient solution control, (0mM B), 0.5 mM B, 1 mM B, 2 mM B containing nutrient solutions were given. Changes occurring in the carrot genotype in boron deficiency and boron toxic conditions were compared with the control group. Basic growth parameters and B element contents of the stem were determined. In the carrot variety, with respect to the control, reductions occurred in the plant height, and the plant fresh and dry weight values under boron deficiency conditions and boron toxic conditions. It was determined that the greatest decreases occurred in boron 0 ppm B and 2 mM B doses.

*Key Words: Boron Toxicity, Boron Deficiency, Carrot.*