Root Response to Abiotic Stress during Germination and Trifoliate Stages of Purple Corn

Liu, Yuxiao (School: Beijing No. 8 High School)

Drought and salinization of the land are serious environmental problems facing our world, which will inhibit the normal growth of crops. Therefore, using purple corn as the research material, this experiment is the first to explore the response of purple corn root and ZmENO2 gene to drought and salt stress, and attempts to provide a basis for the study of purple corn under adverse conditions by combining the anti-stress function of ZmENO2. This experiment observed and counted the germination of purple corn and the phenotypic changes of roots, as well as the relative expression of ZmENO2 gene in roots under drought and salt stress through stress experiments in the germination and trifoliate stages of purple corn. Through this experiment, the tolerance of purple corn to stress and the response of ZmENO2 gene to stress were analyzed. It was observed that the germination of purple corn seeds decreased with the increase of salt concentration, relative expression of ZmENO2 gene increased under drought and salt stress. The conclusion of this experiment is that the purple corn and ZmENO2 gene respond to abiotic stress. This experiment provided the basis for the improvement of purple corn varieties and the study of ZmENO2 gene.

Awards Won: