

**A HYDROPONIC APPROACH TO EVALUATE RESPONSES TO SALINITY STRESS IN COTTON****M. N. Castillo****Texas Agricultural Experiment Station****Lubbock, TX****Jane Dever****Texas Agrilife Research****Lubbock, TX****Abstract**

A Hydroponic Approach to Evaluate Responses to Salinity Stress in Cotton Agricultural problems with salinity are often the result of deforestation and poor irrigation practices. Salinity affects almost every aspect of the morphology, physiology and biochemistry of plants. Traditional breeding programs and the application of genetic engineering techniques attempt to understand some of the physiological aspects of salt tolerance in cotton plants with the objective of developing a salt tolerant genotype. We propose a hydroponic screening method for evaluating the effects of salinity on root tissue, the stem, and leaf cells. Using wild cotton germplasm, the study has been conducted in two hydroponic systems as well as in a soil media. The data is collected using the scanning electron microscope, the transmission electron microscope, as well as the Fourier transform infrared spectrometer. The ultimate goal is to diversify the genetic variability through a backcross breeding study to develop a salt tolerant cultivar agronomically.