

QUANTIFYING COTTON CULTIVAR RESPONSE TO EARLY SEASON WATER DEFICIT**C. Meeks****J.L. Snider****University of Georgia****Tifton, GA****T.L. Barnes****University of Georgia Cooperative Extension****Pearson, GA****M.E. Babb-Hartman****University of Georgia****Griffin, GA****Abstract**

Cotton seedling vigor characteristics have been evaluated many times in the past, but due to the constant release of new varieties coupled with new seed technologies, evaluation of seedling characteristics for drought tolerance is critical for assistance in determining which cultivars are best suited for dryland environments. Treatments were implemented at the University of Georgia Horticulture Dept Greenhouses in Spring 2015. Plant height, total nodes, square position, ATP content, chlorophyll content, leaf area index, and crop biomass were measured for 3 cotton cultivars. This study was repeated in Fall 2015 at the University of Georgia Envirotron facility with similar measurements and the same cultivars with the addition of an additional cultivar as well as two additional irrigation treatments. The study was also repeated a third time at the UGA Tifton greenhouse facilities in Spring 2016. Preliminary data indicated that cultivars differed substantially in early growth responses with varying levels of water deficit. Preliminary data also indicated that the cultivars were able to rebound from water deficit stress once irrigation was applied.