

RESEARCH ARTICLE

Development of screening method for drought tolerance in cotton genotypes based on ABA, chlorophyll stability index and drought tolerant index

■ K. ANANTHI

SUMMARY

Drought stress adversely affects the growth, development and ultimately yield of cotton. The growth and productivity of cotton plants depend largely on their vulnerability to environmental stress. Water stress is commonly attributed to situations where the water loss exceeds sufficient absorption intensity causing a decrease in plant water content, turgor reduction and, consequently, a decrease in cellular expansion and alterations of various essential physiological and biochemical processes that can affect growth or productivity. The experiment was conducted by adopting Factorial Randomized Block Design with three replications. The treatments comprised of water stress imposed at vegetative, squaring and boll development stages of crop growth. Withholding water at any growth stage significantly increased the leaf ABA content. Among the different treatments, stress at squaring had a major impact over the ABA quantity enhancement. Chlorophyll stability index is a measure of integrity of membrane or heat stability of the pigments under stress conditions. The genotype KC 2 X MCU 13 showed tolerance to water stress as it accumulated relatively higher ABA.

Key Words : ABA, Chlorophyll stability index, Yield, Drought, Drought tolerant index.

How to cite this article : Ananthi, K. (2016). Development of screening method for drought tolerance in cotton genotypes based on ABA, chlorophyll stability index and drought tolerant index. *Internat. J. Plant Sci.*, **11** (2): 171-179, DOI: 10.15740/HAS/IJPS/11.2/171-179.

Article chronicle : Received : 02.02.2016; Revised : 05.04.2016; Accepted : 19.05.2016

AUTHOR FOR CORRESPONDENCE

K. ANANTHI, Department of Crop Physiology, Tamil Nadu Agricultural University, COIMBATORE (T.N.) INDIA
Email: ananthiphd@yahoo.com