Turkish Journal

of

Botany

Keywords
Authors

bot@tubitak.gov.tr

Scientific Journals Home Page

Turkish Journal of Botany

Effect of Salt Stress and Synthetic Hormone Polystimuline K on The Photosynthetic Activity of Cotton (Gossypium hirsutum)

Rena A. GANIEVA
Institute of Botany, Academy of Sciences, Baku-AZERBAIJAN
Surhay R. ALLAHVERDIYEV
Zonguldak Karaelmas University, Faculty of Forestry, Bartın-TURKEY
Nilufar B. GUSEINOVA
Institute of Botany, Academy of Sciences, Baku-AZERBAIJAN
Halil I. KAVAKLI
Middle East Technical University, Department of Biology, Ankara-TURKEY
Saeedeh NAFISI
Zonguldak Karaelmas University, Faculty of Forestry, Bartın-TURKEY

Abstract: The effects of Polystimuline K (PS-K), as a cytokinin analogue, on delayed light component state (DF), intermittent fluorescence (IF) and chlorophyll (Chl) a/b ratio was investigated in the leaves of different genotypes of cotton (Gossypium hirsutum L.) under salt stress (155 mM Na Cl) for different periods of time. It was shown that in the early perioid of salt stress, DF and IF amplitudes are decreased, which is indicative of a Photosystem II (PS II) activity decrease. It is possibly related to the damage of chlorophyll in the PS II donor site and the decrease of Chl b molecules leading to an increased Chl a/b ratio. However, the improvement of the affected variables as a consequence of PS-K pretreatment suggests the stablizing effects of the synthetic growth regulator on the thylakoid membranes leading to a normalization of H + /NaCl exchange that consequently hastens the recovery of damaged PS II centers.

Key Words: Polystimuline K, chlorophyll fluorescence, salt stress, photosystem II, cotton

Turk. J. Bot., **22**, (1998), 217-222.
Full text: pdf
Other articles published in the same issue: Turk. J. Bot.,vol.22,iss.4.