Turkish Journal of Botany

Turkish Journal

of

Botany

Keywords
Authors

bot@tubitak.gov.tr

Scientific Journals Home Page

Alleviation of Salinity-Induced Dormancy by Growth Regulators in Wheat Seeds

Zamin Shaheed SIDDIQUI, Syed Shahid SHAUKAT, Arif-Uz-ZAMAN
Stress Physiology & Environmental Pollution Lab., Department of Botany, University of Karachi, Karachi, 75270 - PAKISTAN

Abstract: The effect of 2 growth regulators, betaine and thiourea, was examined to learn the extent to which they can alleviate salinity-induced dormancy of wheat seeds. Germination velocity (as measured by Timson index) progressively decreased with increasing salinity, while thiourea and betaine, alone or in combination, elevated the germination velocity of wheat seeds. Timson index showed significant improvement in germination velocity when thiourea was used at 225 mM NaCl. Likewise, the adverse effect of salinity on growth parameters, like root and shoot lengths and fresh and dry weights, was also alleviated considerably when growth regulators were added. The application of growth regulators in combination with NaCl resulted in increased level of reducing sugars in the embryo and a decrease in the endosperm coupled with enhanced amylase activity, suggesting significant recovery in the mobilization rate of soluble sugars from endosperm to embryo. Thiourea was more effective in the mobilization process compared to betaine. Significance of growth regulators in alleviating the salt stress in crop plants is discussed.

Key Words: Salinity, thiourea, betaine, germination velocity, reducing sugars

---

Turk. J. Bot., **30**, (2006), 321-330.
Full text: pdf
Other articles published in the same issue: Turk. J. Bot.,vol.30,iss.5.