Hydroponic treatment with ascorbic acid decreases the effects of salinity injury in two soybean cultivars

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Abstract:

The addition of 0.5 mM ascorbic acid (AsA) to the hydroponic growth solution of young soybean cultivars, cvs (Glycine max Exford, high sensitive and G. max Giza 21, low sensitive) under normal growth, conditions provided protection against subsequent salinity stress. This observation was confirmed by fresh and dry matter contents, dose of response, total water content photosynthetic pigments, transpiration rate, AsA contents, membrane stability index, K+ leakage and minerals (Na+, K+ content, translocation, uptake and K+/Na+ ratio). In addition, analysis of antioxidant enzymes showed that AsA pretreatment causes an increase in catalase (EC 1.11.1.6), ascorbate peroxidase (APX) (EC 1.11.1.11) and guaiacol peroxidase (EC 1.11.1.7) activities under salinity stress. The seedlings of two soybean cultivars differing in salt sensitivity were treated with 0.1, 0.2 and 0.4 M NaCl for 3 days.

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