CALCIUM ENHANCEMENT OF SHOOT ORGANOGENESIS IN SALINITY-STRESSED TOMATO EXPLANTS

A. E. EL-ENANY, A. A. ISSA and R. ABDEL-BASSET

Abstract:

Efficient de novo shoot organogenesis from hypocotyl and cotyledons was studied under NaCl-salinity conditions and in a salinity-calcium combination. Sodium chloride inhibited shoot regeneration markedly at 100 and 150 mM NaCl. Both the fresh and dry weight were also reduced. The mineral contents (Na, K and Ca) of hypocotyl and cotyledonary cultures were disturbed at high levels of NaCl salinity. The osmotic potential ($\bar{\psi}$) was raised in hypocotyl and cotyledonary cultures in MS medium as the NaCl salinity level increased. Calcium enhanced shoot regeneration in hypocotyls and cotyledonary cultures, especially at the highest salinity level (150 mM NaCl). This calcium-induced counteraction of the harmful effect of NaCl may be due to the reduced uptake of Na and to the elevated water content of hypocotyls and cotyledonary cultures under Na-Ca combination. wall rigidity.

Keywords:

Calcium-Shoot organogenesis- Salinity

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