

**EFFECT OF SALT STRESS ON *IN VITRO* ORGANOGENESIS
OF TOMATO**

(*Lycopersicon esculentum* Mill.)

BY

M.M.A. NETHMINI SHANIKA



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EASTERN UNIVERSITY

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ABSTRACT

This study was aimed to determine the effect of salt stress on *in vitro* organogenesis of tomato KC-1 cultivar. First experiment was done to observe *in vitro* response of cotyledon and cotyledon node with auxiliary bud portion derived from 12 days old *in vitro* grown seedlings. Various concentrations of plant growth regulators were used for the experiment. MS media fortified with 1.0 mg/l BAP and 0.2 mg/l NAA exhibited better *in vitro* response and shoot formation for both explants after 4 weeks of culture.

Responses to salt stress of tomato were studied during the germination and early growth of the tomato KC-1 under controlled environment. The results revealed that by increasing salinity, germination percentage was decreased. On 80 mM of salinity level, germination reached to minimum value (17.8%). Other measured characteristics such as mortality percentage, shoot and root lengths, dry and fresh weights of shoots and roots, Relative water content and salinity level of first leaves were affected significantly after 12 days of seeding.

Response of cotyledon callus of tomato KC-1 under salt stress was also studied for *in vitro* organogenesis. This experiment was carried out in the completely randomized design with 4 treatments and 3 replications. Seedlings using *in vitro* amplification method, they were cultured for callus induction on MS medium containing 1.0 mg/l BAP, 1.0 mg/l NAA or 0.2 mg/l NAA. Then the produced calli were placed under salt stress from different concentrations of NaCl (0, 20, 40 and 60 mM) after 2 weeks of culture on MS medium containing 1.0 mg/l BAP and 1.0 mg/l NAA. In this experiment, colour of callus, wet weight, dry weight, water content and chlorophyll content of callus were studied after 4 weeks of culture under salt stress. The results

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