

Antioxidant enzymes (CuZnSOD, GSH-Px) activity and lipid peroxides concentration in NaCl-stressed tomato leaves

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Effects of salinity on activities of superoxide dismutase (CuZnSOD), glutathione peroxidase (GSH-Px) and concentration of lipid peroxides (TBARS) were studied in tomato (*Lycopersicon esculentum* Mill. cv, "Perkoz") leaves. Compared to control, salt-stressed plants showed the greatest increase in CuZnSOD activity 3 hours after treatment by 166% and 185%, respectively, for 50 mM and 150 mM NaCl. GSH-Px activity in the case of 50 mM solution was highest (134% of control) at the same time as CuZnSOD. After this time a progressive decrease in the activity of GSH-Px was observed up to 66% of the control value 5 days after treatment. The 150 mM NaCl solution treatment caused 187% increase in GSH-Px activity in comparison to the control plants 1 day after stress. On the 3rd day of experiment it was only 65% of the control value. TBARS concentration in tissues of plants stressed with 50 mM NaCl solution was increased above control (25-37%) on 3 h to 5th day. The higher concentration of NaCl solution caused an increase in TBARS level from the first day after treatment. The highest value of this parameter (230% of control) was observed on the 3rd day after stress, in the same time when GSH-Px activity was the lowest. These results suggest that under mild saline stress (50 mM), the elevated levels of the antioxidant enzymes protect the leaf cells against activated oxygen species. However, severe saline stress treatment produced in tomato leaf tissue potentiated lipid peroxidation derived due to elevated levels of oxygen species and/or inhibited GSH-Px activity.