

## E8

### Changes in the activity of antioxidant enzymes associated with salt tolerance in spinach beet

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Antioxidant enzymes (superoxide dismutase, ascorbate peroxidase, glutathione) play major role in scavenging mechanism of reactive oxygen species which were involved in various stress conditions including salt. Salt-tolerant spinach beet having 15 cm of shoot length were treated with various salt (0, 50, 200, 1000 mM NaCl) for 24 hrs in order to investigate whether salt tolerance of this plant is due to the increase of antioxidant enzyme activity. Spinach beet exhibited an increase in the activity of antioxidant enzymes in all salt treatments within 4 hrs and maximal activity at 200 mM. After this, all treated-plants showed similar pattern which decrease in the activity by continuous treatment. As a result of PAGE, it has been confirmed that spinach beet contains 3 isoforms (Fe-SOD, CuZn-SOD and Mn-SOD) of SOD and main SOD isoform is CuZn form among them. Meanwhile, spinach beet showed the lowest enzyme activity at 50 mM NaCl treatments, it may be due to the inactivation of Mn-SOD isoform. These antioxidant enzymes showed the increase of activity in a short time and at the 200 mM treatments. It is considered that spinach beet operates effective defense mechanism under high salt, and so this plant copes effectively with a stressful condition such as high salt.

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