

## **Abstract**

Drought is one of the major factors limiting agricultural production. Reactive oxygen species (eg. superoxide radical, hydroxyl radical, hydrogen peroxide) generated during stress in plant cells activate antioxidant mechanisms, which scavenge those toxic substances. The positive correlation between activity of enzymatic (eg. catalase, superoxide dismutase, glutathione reductase, peroxidases) and nonenzymatic (eg. glutathione, ascorbic acid) antioxidants and stress tolerance was confirmed in various studies. Both interspecific and intraspecific variability was found in activities of antioxidant systems of plants. Higher activity was also observed in F1 generation in relation to positive heterosis, or in plants treated with supportive substances such as abscisic acid, brassinosteroids and nitrogen. The increase in the activity of antioxidants was also proved in relation to the ploidy level or to intensity of drought. It was observed the positive effect of previous drought exposition on tolerance to other abiotic stressors. The complex response of plants to stress factors depends on many other internal and external factors.