

P30. EFFECTS OF TOXIC METALS ON GLUTATHIONE S-TRANSFERASE ACTIVITIES, GLUTATHIONE AND PROTEIN LEVELS IN SELECTED WHEAT VARIETIES

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Heavy metals (HMs) cause oxidative damage in plants through reactive oxygen species (ROS) formation. However, cells can detoxify the harmful effects of ROS with the help of enzymatic or nonenzymatic antioxidant defense mechanisms. Activation and induction of glutathione S-transferases (GST) enzymes are one of the metal detoxification mechanisms in plants. Glutathione S-transferases (GST) are a diverse group of enzymes catalyzing the conjugation of electrophilic xenobiotic substrates with the tripeptide glutathione (GSH). GSH is considered as one of the most important metabolite for intracellular defense against ROS induced oxidative damage. In this study, the effects of different concentrations of CdCl₂ and PbCl₂ treatments on contents of GSH, protein and GST activities in the roots and shoots of *Triticum aestivum* L. cv. İzgi-2001 and Alpu-2001 were detected in hydroponic solutions. The application of HMs to plants caused differences in protein contents by comparing to their control groups. While the increase in shoots was higher than in the roots of İzgi-2001, protein contents decreased more in roots of Alpu-2001. In GSH concentration measurements, the shoots of Alpu-2001 have shown higher than in the shoots of İzgi-2001. The application of HMs to plants was caused a similar increase in GST activities by comparing to their control groups. The variable results which observed in protein contents, GSH contents and GST activities are reflecting a difference in the rate of metabolism with regard to HMs between varieties.