

## Documents

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### **Molecular and physiological aspects for *Lepidium sativum* tolerance in response to lead toxicity**

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#### **Abstract**

The present study was undertaken to evaluate the toxicity of Pb 2+ on photosynthetic pigments, total soluble protein and MDA contents as well as the activities of SOD, CAT and POD in *Lepidium sativum* leaves after 10-days of supplying lead (0-600 ppm) in the nutrient solution. The results indicated that lead treatment adversely affected plant growth and disturbed the cell metabolism critically. The development of toxic symptoms, corresponding to a high accumulation of Pb 2+, was a sum of the increase in H<sub>2</sub>O<sub>2</sub> and MDA contents, decrease in protein content, and the much elevated SOD and POD activities in leaves. In addition, the results demonstrated that exposure to high lead concentration (Pb 2+ >400 ppm) could result in the disintegration of antioxidant system in *Lepidium* seedlings. Also the significant decrease in the contents of photosynthetic pigments was related to high-level metal stress. Higher concentrations of Pb 2+, especially 400 and 600 ppm, resulted in a great variation in protein pattern distribution, migration position and bands intensities. The outcome of this study corroborates that *Lepidium sativum* is a suitable hyper-accumulator candidate and tolerant against low-level lead contaminated soil. © by PSP.

#### **Author Keywords**

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