

# INVESTIGATION OF TOLERANCE LEVEL OF DIFFERENT *Brassica* SPECIES UNDER LEAD (Pb) STRESS AND IDENTIFICATION OF MOST EFFECTIVE PHYTOREMEDIATOR OF Pb FROM CONTAMINATED SOIL

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## Executive Summery

Lead (Pb) is a serious metallic pollutant in Bangladesh which is absorbed by plants from soil and transferred to human food chain. So, Pb remediation from soil is very important. Members of the Brassicaceae family are promising candidates for phytoextraction of heavy metals but the degrees of tolerance and remediation capacity are varies greatly. Therefore, identification of more metal tolerant and phytoremediator species is incredibly urgent task for plant scientists. To identify the relative tolerance and phytoremediation capacity of different Brassica species (*B. campestris*, *B. napus*, *B. juncea*, *R. sativus* and *B. oleracea*) under various Pb concentrations. Different seeds of Brassicaceae plants were sown in plastic pot containing Pb contaminated soil in Sher-e-Bangla Agricultural University during December 2017 to January 2018. The experiment was replicated thrice following CRD and data were taken at 2, 4 and 6 weeks after sowing. The present study was carried out to inspect the metal accumulation and tolerance abilities of five Brassica species (*B. campestris*, *B. napus*, *B. juncea*, *R. sativus* and *B. oleracea*) seedlings exposed to four levels of lead (Pb) stress [0 mM, 0.25 mM, 0.5 mM and 1 mM Pb (NO<sub>3</sub>)<sub>2</sub>] for six weeks. Of the Brassica species studied, *B. juncea* accumulated the highest amount of Pb in a dose-dependent manner, and in every case, the Pb content was higher in the roots than the shoots. All level of Pb stress reduced seedlings height and biomass in each variety at 2, 4 and 6 weeks of age. In addition, leaf relative water content and SPAD value were also decreased with increase of stress concentration. But among the varieties, *B. juncea* showed lowest reduction of above mentioned parameters. Considering the growth and physiological performance *B. juncea* is relatively tolerant species though it accumulated highest Pb. So, *B. juncea* might be used as a tool of phytoremediation in Pb polluted soil.

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