

Growth and accumulation of Pb by roots and shoots of *Brassica juncea* L.

Cita: Bassegio, C., Campagnolo, M., Schwantes, D., Gonçalves Junior, A., Manfrin, J., Douglas Bassegio (2020). Growth and accumulation of Pb by roots and shoots of *Brassica juncea* L., *International Journal of Phytoremediation*, 22:2, 134-139, DOI: [10.1080/15226514.2019.1647406](https://doi.org/10.1080/15226514.2019.1647406)

Abstract

In this study, different soil Pb concentrations [24 (control), 80, 136, 362, and 1150 mg kg⁻¹] were used to analyze the tolerance threshold and accumulation potential of *Brassica juncea* L. in a pot experiment under greenhouse conditions. In addition to growth and Pb accumulation, the following contamination indices were calculated: transfer coefficient (TC), translocation factor (TF), and tolerance index (TI). Growth and Pb accumulation were determined at 60 days after emergence. The Pb concentrations were determined using the flame atomic absorption spectrometry (FAAS). The plant height was affected by soil Pb contamination, and it decreased from 1.37 to 0.83 m when the soil Pb concentration increased from 24 (control) to 1150 mg kg⁻¹, respectively. The Pb concentration in the shoots and roots increased as the Pb concentration in the soil increased, reaching 94 mg kg⁻¹ in shoots and 783 mg kg⁻¹ in roots when was grown under 1150 mg kg⁻¹ of Pb. TF was <1 at all levels of contamination. The TI values suggested that *B. juncea* presented Pb tolerance in Pb contaminated soils. Our findings indicate that *B. juncea* has the potential to accumulate Pb in soil under tropical conditions.