

Nickel hyperaccumulation in *Bupleurum croceum* Fenzl from serpentine soils in Yahyalı-Kayseri (Turkey)

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Aim of the Study: Serpentine plants are important genetic resources used in the treatment of heavy metals in polluted environments. These plants grow in nickel and chromium-rich serpentine soils and have a high accumulation of metal ($>1000 \text{ mg kg}^{-1}$) in aerial parts, which are called hyperaccumulators. There are about 500 hyperaccumulator plant species in the world, of which 360 are Ni hyperaccumulators. This study was aimed to determine the Ni accumulations of some Apiaceae members growing on the serpentine soils of Yahyalı (Kayseri).

Material and Methods: *Prangos uechtrizii* Boiss. & Hausskn., *Bupleurum croceum* Fenzl. and *Zosima absinthifolia* (Vent.) Link. plants from the Apiaceae family in serpentine soils of Yahyalı constitute the main material of this study. Ni concentrations in the soil and underground and aboveground parts of plants were determined by using ICP-OES device.

Results: It was found that the concentrations of nickel in the soil grown by the plants change between 1150 and 4250 mg kg^{-1} . The concentrations of Ni in the underground and aboveground parts of the plants were as follows: in *Prangos uechtrizii* 367- 9 mg kg^{-1} , in *Bupleurum croceum* 39-4941 mg kg^{-1} and in *Zosima absinthifolia* 149-33 mg kg^{-1} (dry weight). Consequently, it was determined that *Bupleurum croceum* had approximately five times more Ni accumulation than the limit values in aerial parts. Accordingly it is suggested that *Bupleurum croceum* could be added to the list of hyperaccumulator plant as a new Ni hyperaccumulator.

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Keywords: Apiaceae, *Bupleurum*, Ni-hyperaccumulator, serpentine, Yahyalı, Turkey.