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NI AVAILABILITY IN AGRICULTURAL SOILS IN ALBANIAN SERPENTINE AREA

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In Albania, ultramafic outcrops cover 11% of the surface and the Mg-rich arable vertisols have been estimated to cover about 14,889 ha of the about 700,000 ha of total agricultural land available in the country. Albanian ultramafic landscapes have the potential to provide multiple ecosystem services, but are currently being used for low-productivity agriculture. The purpose of this paper was to characterize Ni availability in one of most Mg-rich arable vertisols of Albania, Field of Domosdova, Prrenjas. We sampled 16 soils from a Domosdova field, which was cultivated with plants that serve as food for animals and humans. Collection of both plant samples (analysis of element concentrations in aerial parts) and soil samples (analysis of total elements), DTPA-extractable Ni, Fe, helped us to evaluate the potential risk of soil elements and the tolerant and accumulator plant species in this serpentine area. Obtained results have revealed high concentration of nickel in soil of the serpentine pastures that are used for animals grazing. Ni availability (DTPA extractable Ni) in Domosdova soil varied from 55

mg kg⁻¹ to 56 mg kg⁻¹. The highest Ni concentrations in were found in nickel hyper accumulator plant *Alyssum murale* (from 3504 to 3516 mg kg⁻¹). In conclusion, serpentine soil of Domosdova, Prrenjas is a potentially toxic contaminated source to surrounding environment due to the high content of total and available nickel.

Biography

Besmira Xhaferri has a Bachelor's Degree in Biochemistry and Master's Degree in Environmental Science from the University of Elbasan. She is currently a PhD candidate in the Agriculture Faculty at the University of Tirana. She is in progress of her thesis entitled, "Phenology and the absorption dynamics of macro elements and heavy metals in hyper accumulator plants of nickel in Albania". She works as a Professor of Biology at Aleksander Xhuvani University, Elbasan and as a Teacher of Biology and Chemistry at Arianiti High School in Elbasan.

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