



YOURS 2020

ABSTRACT PROCEEDINGS

YOUng ResearcherS Conference 2020

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Ministry of Education, Science and Technological Development

Editorial Board of Journal of Applied Engineering Science

UKAS - Association for Quality, Accreditation and Standardization

Faculty of Mechanical Engineering, University of Belgrade

YOURS 2020

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ORCHID SPECIES ANACAMPTIS MORIO AS A POTENTIAL BIOREMEDIATOR OF AS, CD AND PB

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Summary: In this study concentration of toxic elements As, Cd, and Pb was determined in different soil types and belonging orchid species *Anacamptis morio* vital parts, in order to examine accumulation patterns and provide new insights about potential use of this orchid in bioremediation technology. The soils developed on limestone, serpentine, and the chert were subjected to the BCR sequential extraction. Samples of orchid root and tuber, as underground parts, and stem, leaves, and inflorescence, as above-ground organs, were also analyzed for content of As, Cd and Pb. During this research, it was observed that metal content in soil is directly proportional to its content in the plant, more specifically in roots, which suggest that *A. morio* can potentially be used in phytostabilization of contaminated sites. Values for BCF factors showed Cd immobilization in roots regardless of the soil type. Certain level of arsenic was transferred from root to leaves indicating potential for accumulation of this element into aboveground organs. Assessment of the phytoremediation potential of this orchid or another plant species from diverse environments is important as it provides information about possibility of their future application in environmental remediation programs.

Keywords: toxic metals, orchid, bedrock, bioremediation, BCR fractions

