

**University of Belgrade
Technical Faculty in Bor**



**7th INTERNATIONAL
STUDENT CONFERENCE
ON TECHNICAL SCIENCES**

Book of Abstracts



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**Editors:
Mladen Radovanović
Jelena Ivaz**

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APPLICATION OF MEDICINAL PLANTS IN PHYTOREMEDIATION TECHNOLOGIES

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Abstract

Society intensively attempts to face worldwide environmental health issues menacing soil, water, and other environmental media, especially in the last decades. One of the major threads and the most substantial concerns are heavy metals, known for their high toxicity and difficult degradability. The need for an efficient, low-cost, and sustainable approach to this problem led to the development of phytoremediation. This promising remediation strategy implies plant species utilization to isolate contaminants and minimize environmental risks. Plants able to inhabit contaminated sites and accumulate extraordinarily high concentrations of heavy metals, with no toxic effects, are called hyperaccumulators. Some of them belong to the group of aromatic and medicinal plants, containing natural substances widely used in food, cosmetics, and pharmaceutical industries. Owing to the secondary metabolites biosynthesis and distinctive morphological features, medicinal plants with phytoremediation capabilities seem to be one of the possible choices for utilization in the remediation of contaminated lands. According to the published data, the most suitable aromatic plants for heavy metal contaminated soils remediation belong to the families: *Asteraceae*, *Geraniaceae*, *Poaceae*, and *Lamiaceae*. As researches revealed, the percentage yield of the essential oil (EO) distilled from the medicinal plants enhances with the increased heavy metal stress. Besides, it has turned out that heavy metals do not significantly contaminate essential oils, contrary to the expected. Thus, medicinal and aromatic plants hold great phytoremediation potential while simultaneously enabling the production of essential oils. Their usage has been proposed as feasible and profitable, providing multiple benefits from both environmental and economic aspects.

Keywords: *heavy metals, soil, phytoremediation, medicinal plants*

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