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V SIMPOZIJUM BIOLOGA I EKOLOGA REPUBLIKE SRPSKE
sa međunarodnim učešćem - SBERS 2025
Prirodno-matematički fakultet, Univerzitet u Banjoj Luci,
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V SYMPOSIUM OF BIOLOGISTS AND ECOLOGISTS OF REPUBLIC OF SRPSKA
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ANTIOXIDANT POTENTIAL OF THE METHANOL AND WATER EXTRACTS OF *Potentilla argentea* L. AERIAL PARTS AND ROOTS

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Potentilla argentea L. is traditionally used in the municipality of Kruševac, Serbia, as tea to treat stomach ailments. In this study, aerial parts (stems, leaves and flowers) and roots of *P. argentea* were collected in two different growth stages near the village of Ribare, Serbia. The first period of collection was during vegetative growth at the end of March and the second during the flowering phase at the end of May. Dried aerial parts and root samples were subjected to ultrasonic extraction using methanol and water as solvents. Total phenolic content (TPC) and total flavonoid content (TFC) of the extracts were determined, along with their antioxidative potential using DPPH, Ferric Reducing Antioxidant Power (FRAP) and Total Antioxidant Capacity (TAC) assays. The TPC and TFC of aerial parts and root samples were not significantly different when comparing the two growth stages. Root methanol extracts (RME) exhibited the highest TPC values followed by methanol extracts of aerial parts (MEAP) and root water extract (RWE). However, TFC was higher in MEAP compared to RME and RWE. Samples collected during flowering showed better antioxidative potential in DPPH, FRAP and TAC assays to those collected during vegetative growth. RME showed the strongest antiradical activity in the DPPH assay and also exhibited higher FRAP and TAC values than MEAP. Overall, the RME obtained from flowering *P. argentea* displayed the most pronounced antioxidant potential. Strong antioxidant potential demonstrated by the plant through multiple assays provides scientific support for its traditional use in the treatment of gastrointestinal disorders.

KEYWORDS: *Potentilla argentea*, total phenolic content, total flavonoid content, DPPH, TAC