



## **Soil fertility status and spatial distribution of selected trace elements in south-western Serbia**

Vesna Mrvic, Ljiljana Kostic-Kravljanc, Dragan Cakmak, Radmila Pivic, Elmira Saljnikov, Mile Nikoloski, and Veljko Perovic

Institute of Soil Science, Belgrade, Serbia (vesnavmrvic@yahoo.com)

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Institute of Soil Science, 11000 Belgrade, Serbia (vesnavmrvic@yahoo.com)

Main characteristic of surface soil layer (pH in KCl, humus, available P and K), and content of trace elements (Ni, Cr, Cu, Zn, Pb, Cd, As, Hg) were analysed on area of southwestern Serbia, covering total 959 000 ha (one sample represents 1000 ha) .

About 30 % of samples have very acid reaction. Main portion of soil samples (86%) is poorly supplied with available phosphorus (<8 mg/100g), and these are located under forests, meadows, pastures and orchards. Supplies of available potassium and humus are well. On the other hand, in small number of soil samples (4%), mostly on fertile alluvial soils, there are high P and K concentration, which are consequence of inadequate usage of mineral fertilizers.

Content of trace elements in 70 % of soil samples is below maximum allowed concentration (MAC). The most frequent potential pollutants are Cr and Ni, which is associated with mafic and ultramafic rocks, which are common in this region (mountains nearby river Ibar - Troglav, Stolovi, Čemerno, Željina, Golija, Kopaonik; near Sjenica-peridotites of mn. Ozren). There are dominance of Eutric Leptosols soil type, with Ni content above 100 mg/kg, and in some samples above 1000 mg/kg. In smaller number of samples arsenic and lead exceed MAC, while other elements exceed MAD very rarely. There are elevated Pb content in Kopaonik mountain area, and elevated As content besides this region, are in mine zone of Golija and Čemerno. These are mountain soils formed on acid igneous and metamorphic rocks, which are enriched with ores of Pb, Zn and other elements. Eventually negative influences of these elements on plants and other components of ecosystem may be estimated only after detailed investigation.