

Pilot farms of IPA project in Serbia: The status of trace elements in soil

Maja Manojlović¹, Darinka Bogdanović¹, Ranko Čabilovski¹, Klara Marijanušić¹, Nedim Čučević¹, Zdenko Lončarić²

¹*Faculty of Agriculture, University of Novi Sad in Novi Sad, Trg Dositeja Obradovića 8, Novi Sad, Serbia (maja.manojlovic@polj.uns.ac.rs)*

²*Faculty of Agriculture, University of J.J. Strossmayer in Osijek, Kralja Petra Svačića 1d, Osijek, Croatia*

Summary

The concentration of trace elements (TEs) in soil is an indicator of possible excesses or deficiencies for plant nutrition and finally animal and human health and environmental protection. Conventional agricultural production is characterized by intensification and high input of fertilizers and pesticides, which can cause both - TE deficiencies (due to increasing demand for one or few TEs), or high accumulation of TEs (due to unbalanced fertilization and improper use of pesticides). As cross-border Serbia-Croatia region is characterized by intensive agricultural production and as there is no systematic control of fertilizer and pesticides impact on soil and environment, the aim of this investigation, done under the IPA project Agriculture Contribution towards Clean Environment and Healthy Food, is to assess status of TEs in soil. In Serbia, in the region of Srem, three pilot farms with total arable land of 155 ha and with 70 production plots with different history of farming practices were selected. Regarding production system, one farm is specialized for crop production, second one for field crop, vegetable, fruit and livestock production, and the third crop and livestock production. The results of investigation show that total TE concentrations in soils are under maximum allowance values and therefore risk of TE contamination is low. However, low level of plant available TEs, particularly zinc (Zn), is found on the most of the investigated plots on all three farms.

Key words: trace elements (TEs), total concentration, plant available concentration, zinc (Zn)