

Content of Trace Elements in Agricultural Soils from Central and Eastern Europe

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Abstract : Approximately a dozen trace elements are vital for the development of all plants and some other elements are significant for some species. Heavy metals do not belong to this group of elements that are essential to plants, but some of them such as copper and zinc, have a dual effect on their growth. Concentration levels of these elements in the different regions of the world vary considerably. Their high concentrations in some parts of Central and Eastern Europe cause concern for human health and degrade the quality of agricultural produce from these areas. This study aims to compare the prevalence and levels of the major trace elements in some rural areas of Central and Eastern Europe. Soil samples from different regions of the Czech Republic, Slovakia, Austria, Hungary, Serbia, Romania, Bulgaria and Greece far from large industrial centers have been studied. The main methods for their determination are the atomic spectral techniques - atomic absorption and plasma atomic emission. As a result of this study, data on microelements levels in soils of 17 points from the main grain-producing regions of Central and Eastern Europe are presented and systematized. The content of trace elements was in the range of 5.0-84.1 mg.kg⁻¹ for Cu, 0.3-1.4 mg.kg⁻¹ for Cd, 26.1-225.5 mg.kg⁻¹ for Zn, 235.5-788.6 mg.kg⁻¹ for Mn and 4.1-25.8 mg.kg⁻¹ for Pb.

Keywords : trace elements, heavy metals, agricultural soils, Central and Eastern Europe

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