

Factors Affecting Heavy Metal Uptake in Plant Selection for Phytoremediation

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The heavy metal uptake of ten plant species was studied under different soil and climatic conditions. Effects of soil pH, temperature, plant species and phenophase on the heavy metal content of stems and leaves were determined in pot experiments. Plants and soil samples were collected from a lead/zinc mine ore (Gyöngyösoroszi, Hungary) and characterised by high contents of Pb, Zn, As, Cd, Cu. The possibility of an adapted phytoremediation technology was indicated by different bioconcentration factors (BCF). The BCF depended markedly (10- to 100-fold) on plant species and environmental conditions. Based on our results a “season-adapted” phytoextraction technology with different plant species (utilising their different temperature requirements and/or harvest time) is suggested.

Key words: Heavy Metal Uptake, Plant Characters, Soil pH, Temperature