PHYTOEXTRACTION OF SOIL POLLUTANTS AT THE TERRITORY OF MUNICIPAL SOIL WASTE RENDERING PLANT

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Abstract
A cost-effective, highly efficient and environmentally friendly method called a phytoremediation was applied in a field experiment to evaluate the potential of *Miscanthus x giganteus* for the removal of ten microelements and heavy metals (Al, Zn, Fe, Pb, Cd, Co, Cr, Cu, Mn, Ni) from contaminated soil in the territory of a Municipal Waste Rendering Plant. The effects of the incorporation of soil improver as well as the addition of highly contaminated post-industrial soil on the efficiency of phytoremediation and plant growth were tested. The soil improver was applied to the soil at a rate of 200 Mg and 400 Mg per hectare. Meanwhile, in the last object, the 100 Mg of highly contaminated post-industrial soil was added. The results shows that plants cultivated in soil with 400 Mg of soil improver exhibited the highest yield (approximately 85% mass increase compared to the soil without additives). Furthermore, the application of soil improver (200 Mg) increased the uptake of Al, Fe, Co, Pb, Mn, Ni, and Cd by *Miscanthus x giganteus* as compared to the soil without additives. The performed biotests demonstrated no or low toxicity of the investigated soils affecting the test organisms. The energetic valorization of the obtained crops was assessed.

Keywords: phytoremediation, *Miscanthus x giganteus,* metals, polluted soil