

**The Use of Microbial Parameters to Estimate the Influence of EDTA Application during
Phytoextraction of Lead-Contaminated Soil**

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Most heavy metals (i.e., Pb) have limited bioavailability in the soil. In case of so called “induced phytoextraction”, chelating agents, as EDTA are added to soil. They facilitate the transfer of lead into the soil solution. EDTA is rather persistent and can affect soil microorganisms growth. The study was conducted with heavy metal contaminated soil in Poland (Upper Silesia Region). The aim of the study was to estimate the influence of the amendment added to the soil on growth of soil microorganisms, soil microbial activity and plant biomass production. During the field studies the effects of EDTA application to the soil on soil microorganisms, soil metabolic activities and enhance uptake of Pb to the plants (*Brassica juncea*) were observed. Soil samples were microbiologically examined in order to determine: the total number of heterotrophic soil bacteria, the number of *Pseudomonas*, soil fungi, nitrifying and denitrifying bacteria. Also the activity of dehydrogenase, urease and phosphatase were examined. The results showed that EDTA generally had no negative effect on microorganisms and soil metabolic activity. It apparently stimulated growth of *Pseudomonas* and denitrifying bacteria. EDTA had no significant effect on fresh and dry matter weight of *Brassica oleracea* x *B. rapa* and *Zea mays*. Increased biomass of *Brassica juncea* and *Spinacia oleracea* was also stimulated in the presence of EDTA.