

Application of Phytoremediation to Lead-Contaminated Soils

R. Kucharski, A. Sas-Nowosielska
Institute for Ecology of Industrial Areas
Katowice, Poland

E. Malkowski
University of Silesia
Katowice, Poland

M. Pogrzeba
Institute for Ecology of Industrial Areas
Katowice, Poland

S.M. Dushenkov, J.M. Kuperberg
Florida State University
Tallahassee, Florida, USA

Some plants have the natural ability to remove heavy metals from soil. In the case of lead phytoremediation amendments are applied to the soil and to the plant itself in order to mobilize the metal and to translocate it to the above-ground portion of the plant where it can be removed by harvesting. The contaminated plant material is then treated by recycling, composting or direct disposal in a secure landfill. Lead is a widespread soil contaminant all over the world due to industrial activities such as the combustion of leaded fuel, the manufacture and recycling of batteries, paint and firing range activities. Plants are able to remediate large areas of moderate to low concentrations of lead contamination. The Institute for Ecology of Industrial Areas, Katowice, Poland has been working with the U.S. Department of Energy and Florida State University to identify the most promising plants and amendment combinations for removing enough lead from soil to reach regulatory limits. Current technology and cost-effective methods of lead phytoremediation will be presented.