Deutscher Akademischer Austauschdienst
German Academic Exchange Service

DNIPRO UNIVERSITY of TECHNOLOGY 1899

Phytoremediation of reclaimed coal dumps in Western Donbass of Ukraine

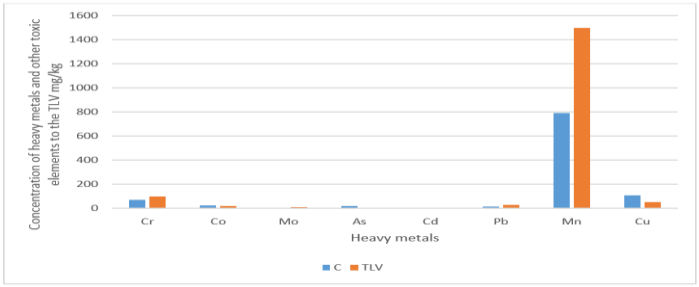
Serhii Krasovskyi, PhD Student, Dnipro University of Technology
Prof. Dr.Oleksandr Kovrov, Scientific Supervisor, Dnipro University of Technology
Dr.Iryna Klimkina, Scientific Supervisor, Dnipro University of Technology

Objective: Phytoremediation by phythostabilization of heavy metals and other toxic elements;

Idea: To increase a stabilization capacity of heavy metals by native plants growing on reclaimed coal dumps in Western Donbas;

about **77** tons per/year

Concentration Co, As and Cu exceeds the TLV norms by 1,2 ; 10,1 and 1,9 times respectively.



Pic. 1 – Concentration of heavy metals and other toxic elements to the TLV

Materials and methods

1.Substantiation of technologies of phytostabilization of soils contaminated with heavy metals and other toxic elements ;

2.To analyze of physical and chemical properties of the soil;

Concentration of heavy metals and other toxic elements on depth 0-20 sm

Table 1

Concentration of heavy Me and other toxic elements on depth 0-20 sm.

Name of heavy metals Me	Cr	Co	Mo	As	Cd	Pb	Cu
C concentration mg/kg	70,82	23,97	1,72	20,12	0,703	16,23	107,52

Results

about S=80 000 m²

Physical and chemical parameters of the red-brown clay

Table 2

Physical and chemical parameters of the red-brown clay

pH	Electrical conductivity μS/см	Nutrients		
		NO^-_3 mg/kg	NH^+_4 mg/kg	PO^{3-}_4 mg/kg
8,78	301,9	0,176	0,0035	0,0016

"EcoMining: Development of Integrated PhD Prograr for Sustainable Mining & Environmental Activities"