



Assisted Phytostabilization of a Cr (VI)-Contaminated Soil Using Composts and *Pulsatilla Pratensis* L

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ABSTRACT.

Soil contamination with Cr (VI) reduces their quality, which worsens the quantity and quality of the harvested crops. The introduction of organic additives to soils improves their quality. A greenhouse experiment was carried out in order to investigate the effect of sewage sludge compost with the addition of coal ash and bentonite combustion. In the experiment performed, the influence of composts on selected physicochemical properties of soil, the growth of *Pulsatilla pratensis* L. and the accumulation of Cr (VI) in the plants and soil was investigated. Chromium content in plant and soil was determined by spectrophotometry. The biomass of tested plants depended on the dose of a chromium contaminant and amendments incorporated into the soil. The greatest average above-ground biomass of *Pulsatilla pratensis* L. was observed in cases of amending soil with compost II (bentonite + sewage sludge). In this experiment, chromium accumulated predominantly in the roots of the tested plant. Chromium accumulated in the roots, thereby reducing its toxicity to the aerial parts of the plant. Compost II (B+SS) caused significant increases of chromium concentrations in the roots and turned out to be the most effective when it came to reducing total chromium content in the soil.

Keywords: amendments; grasses; phytostabilization, soil degradation; risk minimization