

Malachowska-Jutz, A., Guminska, M., Bernas, Z. Effect of Calcium Peroxide on Phytotoxicity of Soil Contaminated with Fluoranthene. *Ochrona Srodowiska* 2014, Vol. 36, No. 3, pp. 37–42.

Abstract: Polycyclic aromatic hydrocarbons (PAHs) are hardly decomposable pollutants that adversely affect soil environment. These compounds alter physical, chemical and biological soil properties, lead to reduction in the amount of easily digestible nutrients and impede gas exchange between soil and atmosphere. In this study, the effect of calcium peroxide (120–240 mgCaO₂/kg) was tested in soil contaminated with fluoranthene (1.5 mg/kg) on its toxicity towards selected plants (root cress, mustard and sorghum). Our results did not give an unambiguous answer to the question whether effect of calcium peroxide on growth and development of plants growing on soils contaminated with hydrocarbons was positive. It was observed that calcium peroxide added to the soil with fluoranthene enhanced its removal. However, stimulation of root growth was also observed in soil samples with calcium peroxide alone. It was difficult to assess whether the observed effect was a result of oxidative stress or environmental conditions improvement.

Keywords: PAHs, bioremediation, oxidation, toxicity.