

ROLE OF COMPOST, BENTONITE AND CALCIUM OXIDE IN LIMITATION OF EFFECT OF PETROLEUM-DERIVED SUBSTANCES ON PLANTS

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ABSTRACT

The aim of the study was to determine the effect of petrol and diesel oil soil contamination on the yield and content of some macroelements in *Lupinus luteus* L. (main crop) and *Zea mays* L. (aftercrop), and investigate if soil amendment with of compost, bentonite and calcium oxide could reduce the impact of petroleum-derived products on the tested plants properties. The negative influence of diesel oil on yield of *Lupinus luteus* L. was larger than petrol. Their effects on *Zea mays* L. were considerably smaller than on *Lupinus luteus* L. Application calcium oxide and compost to soil (in the distinction from bentonite) contaminated by petroleum-derived products generally reduced the effects of the negative influence of petrol on growth and development of *Lupinus luteus* L. Compost and bentonite had the same effect on the yield of *Zea mays* L. from soil contaminated by diesel oil. The contamination of the soil by petrol and diesel oil and the application of the compost, bentonite and calcium oxide in the soil were significant effect on the content of macroelements in above-ground parts of *Lupinus luteus* L. and *Zea mays* L. From among substances added to the soil the most effective appeared the bentonite.

Keywords: petrol and diesel oil contamination, compost, bentonite, calcium oxide, Lupinus luteus L., Zea mays L., macroelements content.