



“Gheorghe Asachi” Technical University of Iasi, Romania



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## AN ASSESSMENT OF BOTTOM SEDIMENT AS A SOURCE OF PLANT NUTRIENTS AND AN AGENT FOR IMPROVING SOIL PROPERTIES

Agnieszka Baran<sup>1\*</sup>, Marek Tarnawski<sup>2</sup>, Magdalena Urbaniak<sup>3</sup>

<sup>1</sup>Department of Agricultural and Environmental Chemistry, University of Agriculture in Krakow

<sup>2</sup>Department of Water Engineering and Geotechnics, University of Agriculture in Krakow

<sup>3</sup>European Regional Centre for Ecohydrology, Polish Academy of Sciences, Lodz, Poland

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### Abstract

We studied the effects of bottom sediments on the physical and chemical fertility of a sandy soil, and on the biomass production and chemical composition of maize and field beans plants grown on the soil/sediment mixes. The studied sediments had high clay content and neutral pH value. The sediment was mixed with soil in the following doses: 5%, 10%, 20%, 30% and 50% on a dry weight basis. The results showed that mixing with sediments increased the soil pH value, the contents of organic C and N, and the availability of P, K and Mg. Mixing with sediments resulted in greater yield of maize and field beans, in particular after the application of the highest dose of bottom sediment (50%), while the lowest dose (5%) generated significantly higher plant yield only for field beans. Results showed also that both plants absorbed less N, K and P as compared to the control treatment, indicating the need of supplementary mineral fertilization in case of use of bottom sediments as growing media. The legal implications of the potential reuse of bottom sediments in agriculture are also discussed.

*Key words:* agriculture use, bottom sediment, improve soil properties, plants growth

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\*Author to whom all correspondence should be addressed: e-mail: [Agnieszka.Baran@ur.krakow.pl](mailto:Agnieszka.Baran@ur.krakow.pl), [marek.tarnawski@urk.edu.pl](mailto:marek.tarnawski@urk.edu.pl), [m.urbaniak@unesco.lodz.pl](mailto:m.urbaniak@unesco.lodz.pl)