

Abstract No: A-228

**NUTRIENTS IN DRAINED AND RE-WETTED PEATLANDS IN NE POLAND**

Barbara Kalisz\* and Andrzej Łachacz

*Department of Soil Science and Land Reclamation, Faculty of Environmental Management and Agriculture,  
University of Warmia and Mazury in Olsztyn, Oczapowskiego 2, Olsztyn 10-719, Poland*

*\*Corresponding author: barbara.kalisz@uwm.edu.pl*

Peat soils after drainage undergo the process of transformation of organic matter (moorsh-forming process) and due to mineralization of organic compounds, the content of macro- and microelements increases. Nutrients occur in various forms and proportions. The aim of the research was to evaluate the content of plant-available and total amounts of nutrients in drained and re-wetted peat soils. The total (in *aqua regia*) and plant-available (extracted with hydrochloric acid) content of Ca, Mg, K, Na, P, N, C, Fe, Mn, B, Zn, M and Cu was analysed using ICP technique and CN analysers. Studied drained soils contained less carbon in surface layers due to oxidation in the moorsh-forming process. In studied soils, among other analysed elements, iron and calcium prevailed. In surface layers of drained peatlands, an accumulation of calcium was recorded. Drained peat soils contained more nutrients than re-wetted ones. In peat soils which were located in river valleys or in the vicinity of hills, the nutrient content varied. It resulted from alluvial and deluvial processes that affected the studied peatlands. High amounts of iron in drained peat soils is a result of intensive oxidation of the organic matter of peat and capillary rise of groundwater and may be one of the factors suggesting the degree of moorsh-forming process.

**Keywords:** *microelements, macro elements, organic soil*