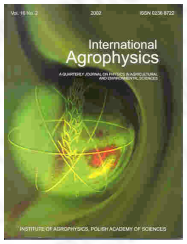
International Agrophysics
Polish Journal of Soil Science
Acta Agrophysica
Instytut Agrofizyki

International Agrophysics
General information
Issues
Search



International Agrophysics
publisher: Institute of Agrophysics
Polish Academy of Sciences
Lublin, Poland
ISSN: 0236-8722

vol. 22, nr. 3 (2008)

previous paper back to paper's list next paper

Specific surface area of Lublin Polesie mucks determined from water vapour and nitrogen adsorption data

(get PDF)

Sokołowska Z., Matyka-Sarzyńska D., Bowanko G.

Institute of Agrophysics, Polish Academy of Sciences, Doświadczalna 4, P.O. Box 201, 20-290 Lublin 27, Poland

vol. 18 (2004), nr. 4, pp. 363-368

abstract Laboratory studies of nitrogen and water vapour adsorption on mucks originating from Lublin Polesie Region are presented. The Brunauer-Emmet and Teller (BET) equation was used to analyze the experimental results and to calculate the specific surface area from both nitrogen adsorption and water vapour sorption isotherms in relation to the degree of mucking (secondary transformation). The existence of relationship between surface area determined from water vapor desorption data and water holding capacity index W1 which characterizes the state of the secondary transformation of peat was proved. The relationships between the specific surface areas determined from water vapour and nitrogen adsorption data, and some important physical properties, eg ash content, bulk density and total porosity of the mucks studied were found. Both classification schemes of the secondary transformation of the peaty-muck soils, that according to Okruszko and W1 index according to Gawlik, should be used simultaneously. In order to characterize the state of muck transformation, simultaneous evaluation of specific surface area from adsorption of polar and non-polar adsorbates is advisable.

keywords specific surface area, mucks, adsorption of water vapour and nitrogen