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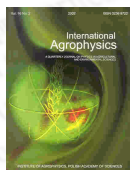
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Biological and physicochemical changes in orthic luvisol in relation to the cultivation system

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Dśbek-Szreniawska M.¹, Sokołowska Z.¹, Wyczółkowski A.I.¹, Hajnos M.¹, Kuś J.²

¹ Institute of Agrophysics, Polish Academy of Science, Doświadczalna 4, P.O. Box 201, 20-290 Lublin 27, Poland

² Institute of Soil Science and Plant Cultivation, Królewska 1, Osada Pałacowa, 24-100 Puławy, Poland

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abstract The research was carried out on soil from the long-term static field experiments in Osiny near Puławy. The field experiment consisted of two cultivation systems: 'conventional' with mineral fertilizers and 'ecological' with organic fertilizers. Microbiological and physicochemical measurements were carried out. The number of microorganisms was presented by standard methods. Soil acidity, organic carbon, specific surface area and water vapour adsorption isotherms were determined. The authors found changes in basic microbiological and physicochemical properties of the soil under cultivation with mineral and organic fertilization of winter wheat. The results of measurements of the number of microorganisms were influenced by: fertilization, vegetation stage of the plant and the content of organic carbon. There was a stimulating influence of organic fertilization on a number of the microorganisms. Soil samples taken from the 'conventional' cultivation system were characterised by lower values of the structural parameters. Samples from the soil organic fertilized tended to have a higher content of organic carbon and possessed a more pronounced microporous structure. The specific surface areas of soil samples from organic farming were slightly higher than of those originating from the 'conventional' soil system.

keywords cultivation system, physicochemical properties, microorganisms

Instytut Agrofizyki PAN
ul. Doświadczalna 4
20-290 Lublin

e-mail: sekretariat@ipan.lublin.pl
tel.: +48817445061
fax.: +48817445067