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AN ASSESSMENT OF CHANGES IN THE GREENHOUSE GAS EMISSION FOLLOWING A SWITCH FROM CONVENTIONAL TO ORGANIC FARMING

Key words: conventional system, emission, greenhouse gases, organic system

Summary

The paper presents an assessment of greenhouse gas release from plant and animal production in the Agricultural Experimental Station in Grabów. The study included gaseous emissions from direct and indirect sources. Obtained results allowed to determine the possibility of reduction of greenhouse gas emission from farms based on the production system e.g. conventional versus ecological one. To estimate various greenhouse gas emissions a Holos 1.1.2 model was used. The model allows to predict changes in emissions resulting from changes in the production system and thus to explore the possibility of reducing greenhouse gas emissions from farms. The study showed that the total GHG emissions were 4.67 and 3.44 Mg CO$_2$ eq·y$^{-1}$ in the conventional and ecological system, respectively. The lower value in the ecological system resulted mainly from reduced emissions in crop production due to a lack of fertilisation with mineral nitrogen and to limited number of agricultural treatments (lower fuel consumption). Emissions from livestock dominated in the total GHG emission.