THE CONTENT OF SELECTED PHOSPHORUS FORMS IN SOIL AND RED CLOVER AND THE ACTIVITY OF SOIL PHOSPHATASES IN RELATION TO DIFFERENTIATED MINERAL AND ORGANIC FERTILISATION

Key words: fertilization, FYM, phosphatase, phosphorus, soil

Summary

The aim of the present research was to evaluate the content of total phosphorus, organic phosphorus and available phosphorus and the activity of alkaline and acid phosphatases in relation to soil fertilisation with manure and mineral nitrogen. The soil for chemical and biochemical analyses was sampled from a long-term field experiment set up in the Agricultural Experimental Station at Grabow-by-the Vistula by the IUNG Plant Nutrition and Fertilization Institute in Puławy. The first experimental factor involved manure fertilisation at the following doses: 0, 20, 40, 60 and 80 t·ha⁻¹, while the second one: fertilisation with mineral nitrogen at the following doses: 0, 30, 60 and 90 kg N·ha⁻¹. It was demonstrated that fertilisation both with manure and with mineral nitrogen significantly affected the content of total phosphorus and its fractions. Enzymatic activity of the studied soil depended both on the experimental factors and sampling date. The content of total phosphorus in dry matter of red clover was modified by the experimental factors.