The impact of natural of fertilization with the addition of PRP Fix preparation the content of micronutrients in crop plants

Wpływ nawożenia naturalnego z dodatkiem preparatu PRP Fix na zawartość mikroelementów w roślinach uprawnych

Ewa Możdżer, Edward Krzywy, Edward Meller, Justyna Chudecka

Department of Land Reclamation and Environmental Chemistry,
Western Pomeranian University of Technology in Szczecin, Poland
e-mail: ewa.mozdzer@zut.edu.pl

In 2011–2013, a field experiment was carried out at he Experimental Station of Cultivar Evaluation in Szczecin-Dąbie. The experiment aimed at determining the effect of slurry without and with addition of increasing PRP Fix preparation doses on the crop yields and some of their qualitative traits. The soil where the experiment had been set up was slightly acidic (pH_{KCL} 5.95); nitrogen, phosphorus and potassium contents were 0.86, 1.55 and 2.70 $g \cdot kg^{-1}$ d.m., respectively. The total content of macro-elements for this type of soil was average. The content of bioavailable forms of phosphorus, magnesium and sulphur was average, while that of potassium was high. The content of organic carbon in soil was low, while the C:N ratio was 10.2:1 and was average for that type of soils.

The obtained results show that the applied fertilisation with slurry combined with PRP Fix preparation and PK fertilisation increased the yield of winter triticale grain of and potato tubers in the and the content of copper, manganese and zinc, being examined in them. The yields of test plants were larger in the fertilisation objects where fertilisation with slurry with addition of 8 kg PRP Fix preparation per 1 m^3 slurry had been applied when compared to those where only mineral fertilisation or slurry had been used. Winter triticale grain contains more copper, manganese and zinc,-in the fertilisation objects being fertilised with slurry with PRP Fix preparation in the amount of 8 or 12 kg per 1 m^3 slurry with additional PK fertilisation (experimental series II) compared to experimental series I without additional PK fertilisation. In the potato tuber similar relationship observed in relation to the total content of manganese and zinc. Differences in the content of macro-elements in test plants after application of the fertilisation scheme being used varied. These differences were not always significant.