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THE EFFECT OF SULPHUR-CONTAINING FERTILIZERS ON SOIL BIOLOGICAL PROPERTIES

Key words: arylsulfatase, catalase, dehydrogenases, mineral fertilizers, number of microorganisms, sulphur

Summary

The aim of the research was to assess the richness of soils of Małopolska province in total and sulphate sulphur. Another aim of the research was to study the relation between the content of both sulphur forms and pH value of soils as well as content of floatable particles, organic carbon and total nitrogen in the soils. The research material (100 soil samples) was taken in 2010 from Małopolska province. Samples were taken from arable fields, meadows and forests; from the 0–20 cm deep soil layer. Most of the studied soils were classified as silts and loams. 69% of the examined soils had very acid, acid and slightly acid reaction. The soils of the Małopolska province contained 3.1–9.1 g organic carbon, 0.31–7.16 g total nitrogen, 74–1425 mg total sulphur, and 5.0–172.5 mg sulphate sulphur per 1 kg DM. Most of the soils were characterized by a low and medium sulphur content. As a rule, concentrations of organic carbon, total nitrogen, total sulphur and sulphate sulphur in the soils were significantly positively correlated. Models of the sulphate sulphur content in the soils, based on the analyzed parameters, explained the studied relations better than the models of the total sulphur content.