

Available and potentially phytoavailable zinc fractions in Gleyic Phaeozems under intensive agricultural management

Dostępne i potencjalnie fitodostępne frakcje cynku w intensywnie użytkowanych uprawnych czarnych ziemiach

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The purpose of the study was to evaluate the actual and potential availability of zinc in selected Gleyic Phaeozems from Kujawy region.

Based on the sequential extraction procedure, using extractants with increasing strength of extraction 7 zinc fractions differ in their mobility were separated. The results were analysed using statistical methods.

Analysed soils with loamy texture and Corg contents in the range 9.1–19.3 g · kg⁻¹ were characterized by neutral or slightly alkaline pH (7.05–7.85 in H₂O).

Total zinc contents ranged between 22.7 and 216.0 g · kg⁻¹ of soil.

Residual fraction of zinc predominated in all studied soils.

Soil organic matter and carbonates were significant scavenger for zinc.

Potentially available zinc contents associated with amorphous and crystalline iron oxides were also significant.

The available, exchangeable zinc fraction was low accounting for less than 3% of the total in most soil samples. Soils with elevated metal contents contained larger amounts of zinc in potentially more labile forms.

It was observed that in studied Gleyic Phaeozems contents of zinc in available forms are below or close to deficit concentrations for plants.