PHOSPHATES IN GROUND WATERS UNDER GRASSLANDS IN POLAND

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SUMMARY

The paper presents results of studies on phosphate-phosphorus concentrations in ground water under grasslands in Poland. Studies were made in the years 2008–2011 within the soil and water monitoring programme in areas occupied by grasslands carried out by the Country Chemical and Agricultural Station (CCAS) and subordinate regional stations in cooperation with the Institute of Technology and Life Sciences in Falenty. It was found that: 1) annual mean concentrations of P-PO₄ in ground water from under grasslands varied between 0.19 and 0.29 mg·dm⁻³ in spring and between 0.28 and 0.62 mg·dm⁻³ in autumn, 2) autumn concentrations of phosphates were always higher than the spring ones every year, 3) as for phosphate concentrations, 80–86% of spring samples and 76–82% of autumn samples met criteria of the first to third class of ground water quality (corresponding to waters of good chemical status), 4) phosphate concentrations varied in relation to agronomic soil category, grassland utilisation, sampling site and soil pH, 5) relatively high concentrations of P-PO₄ were noted in ground waters from light and heavy soils, under pastures and largely in soils of slightly acidic pH and in drained waters.

Key words: grasslands, ground waters, monitoring, phosphates