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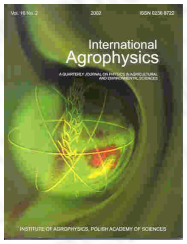


International Agrophysics
publisher: Institute of Agrophysics
Polish Academy of Sciences
Lublin, Poland
ISSN: 0236-8722

vol. 22, nr. 3 (2008)

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# Moisture conditions on a polder without an efficient drainage system. Case study

(get PDF)

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vol. 18 (2004), nr. 3, pp. 295-303

abstract Many hectares of field culture changed not only ownership, but also the manner in which it was farmed in the last decade in Poland. This refers also to polders with compound soil profiles and complex water conditions. Alluvial soils and relatively high water tables occur often in such areas. These conditions are more suitable for grassland than for arable land farming. These rules are very often forgotten by new farmers. This causes conflicts between farmers and the holder of the melioration system or the water reservoir in the vicinity. An example of such a situation is a small polder where soil water conditions are influenced by the reservoir with retained water levels between about 0-1.5 m above the surface of the surrounding land. The paper presents the results of measurements and mathematical simulation for such a polder in the depression. It is concluded that if the beginning of the vegetation season (April) is wet, the moisture conditions are unfavourable for crop production. But if April is dry, then even if the rest of the season is wet, the moisture conditions will still be satisfactory. This conclusion was derived from presented results of simulation. It is true only if farmers' activities are responsible and rational for such soil and water conditions.

keywords water flow, water uptake by plants, mathematical modeling