



Physic-chemical properties of mucks from Biebrza basin

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The long-term cultivation and agricultural use of peatlands has led to the number of factors including decrease of ground water level, changes of aerobic conditions, different plant communities, root exudates of cultivated plants as well as the products of the degradation of rest plant remains, which exhibit the sharp degradation and mineralization of peat. The drainage as a result of agricultural use of peatlands results in a sharp change of biotic and abiotic properties, which led to the degradation of peat organic matter.

Samples of peat moorsh soils were taken from Czarna Wieś, Otoczna and from place marked such as kwatera 17. Samples represent two depths 5-10 cm and the range 45-80 cm (Biebrza National Park, North-East of Poland,). Presently they are utilized like meadows.

Soils were sampled from 10 sites of each site. Samples were air dried and crushed to pass a 1 mm-mesh sieve. These 10 sub-samples were mixed for the reason of preparing a "mean sample", which used for the potentiometric determination of pH (in H₂O and in 1M KCl), and for the measurements of dissolved organic carbon (DOC) as well as total organic carbon (TOC). Isolation of humic acids was achieved using standard IHSS procedure.

The investigation has shown the impact of the kind of peat and the decomposition degree on the chemical properties of organic matter and the chemical structure of

humic acids. The highest content of total organic carbon characterized reed-sedge moorsh with the decomposition degree H_5 . Peats act in the direction of increase of total organic carbon and with decrease of dissolved organic carbon with increase of the depth. For all kinds of peats and increase of depth of sampling is connected with and increase of degree of condensation and aromatic polyconjugation and decrease of total organic carbon and an increase of dissolved organic carbon. For all kinds of peats, an increase in the depth is accompanied by the degree of humification or chemical maturity of humic acids.