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ASSESSMENT OF ORGANIC MASS MINERALIZATION RATE IN DEEPLY DRAINED PEAT-MUCK SOIL BASED ON LOSSES OF SOIL MASS AND CO₂ EMISSION

**Key words:** bulk density, CO₂ emission, meadow ecosystem, mineralization, organic mass

**Summary**

The aim of the studies was to compare methods of assessment of organic mass mineralization rate in deeply drained peat soil on the basis of measurements of soil mass losses and CO₂ emission. The studies were conducted in the years 2002–2007 and in 2015. CO₂ emission was determined by the chamber method. Ground water level deep lowering caused about a twofold increase in organic mass mineralization rate as well as a drastic decrease in ecosystem respiration activity. Under drainage conditions ecosystem respiration activity was more than two times lower than under ground supply conditions. It was found that the method of organic mass losses assessment on the basis of bulk density changes and peat thickness overestimated the actual values of organic mass mineralization. By this method the mean value of organic mass mineralization was 3.2 kg·m⁻²·year⁻¹, whereas determined on the basis of measurements of CO₂ emission from the soil surface – 0.72 kg·m⁻²·year⁻¹.

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