

Nordic Association of Agriculture Science (NJF)
Continuous international scientific conference
“Challengers of Economics, Education and Society Development in the Nordic – Baltic Countries and beyond” organised by Section of Economy, Education and Society
Programme for the virtual seminar on June 4th, 2025 (Wednesday)
13:00 to 14:30 Eastern European time (12:00 to 13:30 Central European time)
The link for joining the conference event presented at the end of this programme

Presentation 1

Title: Total Soil CO₂ Efflux from Drained Terric Histosols

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Annotation: Histosols cover about 8–10% of Lithuania’s territory and most of this area is covered with nutrient-rich organic soils (Terric Histosols). Greenhouse gas (GHG) emissions from drained Histosols contribute more than 25% of emissions from the Land Use, Land Use Change and Forestry (LULUCF) sector. In this study, as the first step of examining the carbon dioxide (CO₂) fluxes in these soils, total soil CO₂ efflux and several environmental parameters (temperature of air and topsoil, soil chemical composition, soil moisture, and water table level) were measured in drained Terric Histosols under three native forest stands and perennial grasslands in the growing seasons of 2020 and 2021. The drained nutrient-rich organic soils differed in terms of concentrations of soil organic carbon and total nitrogen, as well as soil organic carbon and total nitrogen ratio. The highest rate of total soil CO₂ efflux was found in the summer months. Overall, the rate was statistically significant and strongly correlated only with soil and air temperature. A trend emerged that total soil CO₂ efflux was 30% higher in perennial grassland than in forested land. Additional work is still needed to estimate the net CO₂ balance of these soils.

Keywords: Greenhouse gas (GHG) emissions, drained Histosols, soil CO₂ efflux, Lithuania.

Link to Google Meet platform:

meet.google.com/xqg-bnak-gae