

Measurement of Greenhouse Gas Emissions from Sugarcane Plantation Soil in Thailand

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Abstract : Continuous measurements of greenhouse gases (GHGs) emitted from soils are required to understand diurnal and seasonal variations in soil emissions and related mechanism. This understanding plays an important role in appropriate quantification and assessment of the overall change in soil carbon flow and budget. This study proposes to monitor GHGs emissions from soil under sugarcane cultivation in Thailand. The measurements were conducted over 379 days. The results showed that the total net amount of GHGs emitted from sugarcane plantation soil amounts to 36 Mg CO₂eq ha⁻¹. Carbon dioxide (CO₂) and nitrous oxide (N₂O) were found to be the main contributors to the emissions. For methane (CH₄), the net emission was found to be almost zero. The measurement results also confirmed that soil moisture content and GHGs emissions are positively correlated.

Keywords : soil, GHG emission, sugarcane, agriculture, Thailand

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