

Soil CO₂ efflux and soil respiration in peat swamp forest in Pekan Pahang using a closed dynamic soil chamber

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Soil CO₂ emission is one of the primary components in carbon balance of terrestrial ecosystem. Tropical peat swamp forest (PSF) is a unique dual ecosystem i.e. tropical rainforest and tropical peatland which may act as carbon sink and/or carbon source. To accurately assess their net ecosystem exchange and net primary production, measurement of soil CO₂ efflux is required along with the forest canopy CO₂ flux. In this paper, soil CO₂ flux measurement technique using closed dynamic chamber is briefly reviewed. Preliminary results shows soil CO₂ efflux range from 6.9 to 11.3 $\mu\text{mol m}^{-2} \text{s}^{-1}$ and chamber CO₂ concentration above 374 $\mu \text{mol mol}^{-1}$ at 3 cm insertion depth.

Keywords: soil efflux, soil respiration, waterlogged tropical forest, net ecosystem exchange