Soil carbon storage in dominant species of mangrove forest of Sarawak, Malaysia

ABSTRACT

Carbon storage in forest ecosystems involves in ordinate components including plant biomass carbon and soil carbon. Sequestration of carbon along with other aggressive conservation efforts helps to reduce the increasing negative impact of global warming on the environment and mangroves as the coastal forest. The objective of this study was to assess the soil carbon storage of dominant plant species of Awat-Awat Mangrove Forest, Sarawak, Malaysia. A total of 32 soil samples of mangrove forest were collected in nine different plots with different species using a peat auger at a soil depth of 0 to 50 cm. The total C in the soil samples was analyzed using CHNS analyzer (TruSpec Micro Elemental Analyzer (NCHS), LECO, USA). Soil carbon content of mangrove forest was found varies in each plot. The highest soil carbon content in Awat-Awat Mangrove Forest was found for soil under dominance of Rhizophora mucronata (6.24%) whereas the lowest (1.73%) was found for soil under dominated by Sonneratia alba. The soil carbon content of Awat-Awat Mangrove Forest was found to be influenced by the difference in species dominance.

Keyword: Soil carbon storage; Soil carbon; Species dominance; Mangrove forest; Sarawak; Malaysia