

Estimation of fine root productivity of mangroves based on ingrowth core method on *Avicennia* forest in Panay Island, Philippines

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To accurately evaluate the storing and sequestering processes of carbon of mangrove ecosystems in tropical and subtropical regions, it is necessary to determine the fine root productivity in mangrove forests. It is because high productivity of mangrove fine root highly contributes the huge carbon storage of mangrove ecosystem, especially their substratum. In the present study, we aimed to estimate the fine root productivity of *Avicennia* forest in KII eco-park in northern region of Panay Island, Philippines.

Ingrowth core experiment was conducted according to Fujimaki et al. (2004 PLSO) to estimate the annual production rate of fine root. Two transects (125 m in length) were set at each interior and seaside positions in KII eco-park, where have a different tidal frequency. Moreover, three plots were set up at respective transects and each twelve mesh cores, i.e., ingrowth cores were put on the mangrove forest floor in one plot at February, 2018. 4 cores had been already collected from the plots at September, 2018, picked up all fine roots from cores, determined their masses, and estimated their annual production rates.

Annual fine root production of *Avicennia* forest in KII eco-park were estimated to be $6.1 \pm 2.8 \text{ Mg ha}^{-1} \text{ year}^{-1}$ at interior and $7.1 \pm 6.3 \text{ Mg ha}^{-1} \text{ year}^{-1}$ at seaside respectively, which were based on the data of a half-year incubation cores.

These results indicate that FRP in mangrove forests was generally equal and/or relatively high compared with values previously recorded for *Avicennia* forests (Poungparn et al. 2012, 2015).

Keywords: fine root productivity, *Avicennia*, Panay Island