

**CARBON STORAGE IN *ACACIA MANGIUM* PLANTATION
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**PROJECT LEADER: DR. NORMAH AWANG BESAR @ RAFFIE
CO-RESEARCHERS: MAZNAH MAHALI and NISSANTO MASRI
SCHOOL OF INTERNATIONAL TROPICAL FORESTRY
SABAH FOREST DEVELOPMENT AUTHORITY**

SYNOPSIS

This study quantified the above and below ground carbon storage, and soil organic carbon content in a 4 years old *Acacia mangium* plantation in the Bengkoka Forest Plantation, Sabah. A random systematic sampling method was used for conducting the forest inventory. Two circular plots of 0.25 ha were established in the plantation area. Diameter breast height (DBH) of every tree was taken by using diameter tape. All sampling and measuring points (soil and plant) were established at the respective position within these plots. Calculations were based on estimated above ground (ABG) and below ground (BGB) living plant biomass and soil organic carbon (SOC) at depth 0-30 cm. The total ecosystem carbon storage was 91.89 t C ha⁻¹ of which 38.52 t C ha⁻¹ is attributed to ABG and 53.37 t C ha⁻¹ to BGB.

Keyword: Carbon pool, above ground biomass, below ground biomass, soil organic carbon

SINOPSIS

Kajian ini menentukan simpanan karbon pada bahagian atas dan bahagian bawah, dan kandungan karbon pada organik tanah dalam perladangan Acacia mangium yang berumur 4 tahun di Perladangan Hutan Bengkoka, Sabah. Kaedah persampelan sistematik rawak digunakan dalam inventori hutan. Dua plot bulatan dengan keluasan 0.25 ha dibangunkan dalam kawasan kajian. Diameter paras dada (DBH) diambil bagi setiap pokok dalam plot dengan menggunakan pita diameter. Semua persampelan dan point pengukuran (tanah dan tumbuhan) dibangunkan dalam plot ini. Pengiraan berasaskan kepada anggaran biojisim atas permukaan dan bawah permukaan tumbuhan hidup dan karbon organik tanah pada kedalaman 0-30 cm. Jumlah karbon simpanan/stok dalam ekosistem adalah $91.89 \text{ t C ha}^{-1}$ di mana $38.52 \text{ t C ha}^{-1}$ pada bahagian atas permukaan tanah dan $53.37 \text{ t C ha}^{-1}$ pada bahagian bawah permukaan tanah.

Katakunci: Tabung karbon, biojisim atas permukaan, biojisim bawah permukaan, karbon organik tanah