

## **Assessment of soil carbon storage in a tropical rehabilitated forest.**

### **ABSTRACT**

Decrease of tropical rainforests affects global warming and has attracted much attention. Afforestation programs have been suggested to mitigate this problem. But there is little research on the assessment of soil carbon (C) storage in a rehabilitated forest in tropical areas such as Malaysia. The objective of this study was to determine the C accumulation of a rehabilitated forest of different ages. Soil samples were collected from the 1 year old till 7 year old rehabilitated forest. Ten samples were taken randomly with a soil auger at depths 0-20, 20-40 and 40-60 cm. Materials and methods section were used to analyse the soil samples for pH, total C, soil organic matter (SOM), total N, C/N ratio, yield of humic acids (HA), and C in HA (CHA). Results showed that pH decreased significantly with increasing age of rehabilitated forest regardless of depth. SOM and total C contents increased with age. No significant difference in the quantity of CHA content for the different ages of rehabilitated forest at 0-20, 20-40 and 40-60 cm soil were observed. Forest rehabilitation by planting indigenous tree species at initial ages (till 7 years old) has shown signs of C sink but does not exert any difference in the amount of C accumulated across the initial ages.

**Keyword:** Soil carbon; Carbon in humic acids; Tropical rehabilitated forest; Initial age; Humic acids; Carbon storage.