ESTIMATION OF CARBON STORAGE UNDER DIFFERENT LAND USE IN THE FEDERAL UNIVERSITY OF AGRICULTURE, ABEOKUTA

BY

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ABSTRACT

The study investigated the carbon sequestration potential under different land use (*Tectona grandis* plantation, AMREC farm, IFSERAR SNR, *Leucaena leucocephala* plantation) in the Federal University of Agriculture Abeokuta. Soil samples were collected from four different land uses at 0 – 10cm and 10 – 20cm depth. Laboratory analysis was carried out to determine the bulk density, soil organic carbon, particle size, soil organic matter and soil moisture. Carbon stock was estimated, the data was analyzed using the General linear Model of SAS software (SAS Institute, Inc. 1999). Analysis of variance (ANOVA) and LSD (Least significance was used to further separate the means. Correlation analysis was carried out to examine if relationship exist between soil depth and different land use on soil organic carbon content and all other soil properties. The result showed that at both depths, sand, clay, silt, bulk density, organic carbon, organic matter and soil moisture showed low variation. Total carbon stored in soil was highest in *Leuceana* stand, followed by Ifserar SNR. Result showed that carbon storage in soils can be influenced by different land use systems. Amrec farm is not effective in storing large quantities of carbon in soil while Leuceana stored the highest amount of carbon. Also, the carbon storage across depths showed that depth (10-20cm) stored the highest carbon content. Studies on temporal variability in soil carbon sequestration among land use types is recommended as this will help to predict soil climate changes in relation to atmospheric alterations in weather factors.