

## Carbon Sequestration under Hazelnut (*Corylus avellana*) Agroforestry and Adjacent Land Uses in the Vicinity of Black Sea, Trabzon, Turkey

**Authors :** Mohammed Abaoli Abafogi, Sinem Satiroglu, M. Misir

**Abstract :** The current study has addressed the effect of Hazelnut (*Corylus avellana*) agroforestry on carbon sequestration. Eight sample plots were collected from Hazelnut (*Corylus avellana*) agroforestry using random sampling method. The diameter of all trees in each plot with  $\geq 2\text{cm}$  at 1.3m DBH was measured by using a calliper. Average diameter, aboveground biomass, and carbon stock were calculated for each plot. Comparative data for natural forestland was used for C was taken from KTU, and the soil C was converted from the biomass conversion equation. Biomass carbon was significantly higher in the Natural forest ( $68.02\text{Mgha}^{-1}$ ) than in the Hazelnut agroforestry ( $16.89\text{Mgha}^{-1}$ ). SOC in Hazelnut agroforestry, Natural forest, and arable agricultural land were 7.70, 385.85, and  $0.00\text{Mgha}^{-1}$  respectively. Biomass C, on average accounts for only 0.00% of the total C in arable agriculture, and 11.02% for the Hazelnut agroforestry while 88.05% for Natural forest. The result shows that the conversion of arable crop field to Hazelnut agroforestry can sequester a large amount of C in the soil as well as in the biomass than Arable agricultural lands.

**Keywords :** arable agriculture, biomass carbon, carbon sequestration, hazelnut (*Corylus avellana*) agroforestry, soil organic carbon

**Conference Title :** ICEAB 2018 : International Conference on Ecological Agriculture and Biotechnology

**Conference Location :** Amsterdam, Netherlands

**Conference Dates :** January 22-23, 2018