

BIOMASS PRODUCTION AND CARBON STOCK POTENTIAL UNDER HOME GARDENS OF KASHMIR HIMALIYA

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Abstract: Home garden agroforestry systems are suggested to hold large potential for climate change mitigation and adaption. This is due to their multifunctional role in providing income, food and ecosystem services while decreasing pressure on natural forests and hence saving and storing carbon, the study was designed to quantify biomass carbon stock and carbon sequestration potential under home gardens. The results of the study revealed in five tree crop combinations. The maximum (104.86 tha^{-1}) biomass production was found under treatment T₁ (Salix + Poplar + Beans + Kale + Apple) followed by (63.03, 59.53, and 52.48 tha^{-1}) in treatment T₃, T₄, and T₁, and minimum (44.53 tha^{-1}) in treatment T₁, where as carbon stock and carbon sequestration follows same trend as its simply the derivation of biomass. The results from this study will help to estimate levels of atmospheric CO₂ that could be sequestered by tree based land use systems for this climatic region of Kashmir Himalaya, therefore, an attempt has been made to collect the data on biomass, carbon stock and carbon sequestration potential in selected land use systems. The present findings may be used as baseline information for developing prediction models for probable effects of home gardens, future intervention and sustainable management in this region.

Keywords: Agroforestry, Land use system, Biomass, Carbon stock, Sequestration

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