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## **Carbon sequestration rate, carbon storage rate and biomass estimation in major multipurpose agroforestry tree species in destructive method**

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Uptake of CO<sub>2</sub> from atmosphere and utilization for production of photosynthates at mostly for production of biomass is key principle in CO<sub>2</sub> sequestration by plants. The conversion of CO<sub>2</sub> to plant carbon differs in plants species mainly due to its genetic nature, photosynthetic rate, energy conversion, age minorly its environment, edaphic factors. The CO<sub>2</sub> sequestration rate with the tree differs in different plant parts (bole, stem, foliage) based on its activity. With dwindling forest area agroforestry become alternating source to compensate the forest losses, cultivable land to maintain carbon dioxide balance at optimum level in atmosphere. The present study is on some major six multipurpose trees which include legume and non-legume, timber species were selected within university campus. Among the tree species a comparison is done for estimation of total carbon biomass. *Dalbergia sissoo* indicated highest total biomass carbon (254.72 kg t<sup>-1</sup>) and *Acacia nilotica* (228.42 kg t<sup>-1</sup>), *Albizia lebbeck* (219.84 kg t<sup>-1</sup>) has the lowest values of biomass carbon. The CO<sub>2</sub> sequestration rate of above ground parts highest value recorded in *Dalbergia sissoo* (916.98kg t<sup>-1</sup>) and lowest in *Albizia lebbeck* (791.43 kg t<sup>-1</sup>). Rate of CO<sub>2</sub> sequestration is highest in 48% in *Dalbergia sissoo* and lowest in *Albizia lebbeck* 43%.

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