

Protection and Restoration of the Environment XVI

Book of Abstracts



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C storage at planted fields at a Lignite Center for climate change mitigation

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Abstract

The COFORMIT research project assesses the contribution of tree plantations at restored areas to the mitigation of climate change. Forests and plantations, through photosynthesis, absorb and store CO₂, which is the main greenhouse gas in the atmosphere. Carbon is stored in the above and belowground biomass, the deadwood, the litter and the carbon soil. The studied plantations were established after the mining activity at the Lignite Center of Western Macedonia, at about 2,400 hectares. The COFORMIT project aims to estimate C storage in the plantations of this Lignite Center. The estimation of five-carbon pools in the plantations (aboveground, belowground biomass, deadwood, litter and soil) was performed. The aboveground biomass was estimated using an allometric model for black locust. The deadwood C pool was measured in all plots. The belowground biomass was measured by the direct excavation of coarse roots in five selected trees. Fine roots were measured by soil coring. Indirect methods for estimating the root biomass C pools were applied using the established equations. Litter was collected every two months during a year from the 36 installed litter traps. The soil and forest floor C were measured from samples in 0-30 cm depth. Preliminary results for estimating all five carbon pools of the studied plantations are analyzed.

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