

A RESEARCH ON CARBON ACCUMULATION IN *Acacia mangium* PLANTATION IN DINH HOA DISTRICT, THAI NGUYEN PROVINCE

Tran Quoc Hung, Nguyen Cong Hoan

Summary

Estimating the amount of carbon stock at a given time is very meaningful, as it shows the potential of vegetation in the release or accumulation of carbon. Based on data of *Acacia* plantation from Dinh Hoa district, Thai Nguyen province, the research has established 18 surveyed plots for *Acacia mangium* species at three ages: 3, 5 and 7 in Quy Ky and Lam Vy communes. The carbon stock in *Acacia mangium* plantation forest at 3 different ages was determined by assessment of the standard tree carbon stock. The results showed that the fresh biomass of *Acacia mangium* the ages of 3, 5 and 7 concentrated mainly in the tree stand at 92.07 ÷ 95.4 tons/ha; shrub fresh biomass from 2.46 to 4 tons/ha and the biomass of litter from 3.22 to 5.24 tons/ha at different ages. The dry biomass of planted *Acacia mangium* at ages of 3, 5 and 7 ranged from 39.11 to 11.55 tons/ha in the three age. The biomass of *Acacia* tree accounts for the highest proportion from 34.73 to 119.17 tons/ha. The accumulated carbon stocks in *Acacia mangium* plantation at ages of 3, 5 and 7 are mainly in the tree stems. The amount of CO₂ absorbed in the plantation at the age of 7 is 428.58 tons/ha, age of 5 years old is 221.34 tons/ha, the lowest at age 3 with 152.23 tons/ha. The economic benefits of carbon capture are estimated higher than the sale of timber alone. This result is the basis for managers and policymakers to plan for payment environment service (PES) in the location.

Key words: *Carbon accumulation, forest environment service, Acacia mangium, Dinh Hoa.*