

## ABSTRACT

*Khan, K., Listyanto, T., Soraya, E. 2021 Allometric Model for Estimating Above Ground Biomass of Peronema Canescens Jack in The Private Forest in Kulon Progo Yogyakarta: Universitas Gadjah Mada*

**Background:** Private Forest plays a crucial role in term of sustainable forest management (SFM). In addition, it is also beneficial for social and environmental social and environmental advantages, such as poverty reduction and reduced deforestation and forest fires. Estimating the above-ground biomass of the forest is crucial for reducing the greenhouse effects which is the greatest contributor in climate change. Objective of the study are to quantitatively measure the above-ground biomass (AGB) in *P canescens Jack* species, Ngargosari village using destructive method since it is essential for the environment especially in the ability of *Sungkai* tree in absorbing the carbon. To develop allometric model in assessing the above-ground biomass (AGB) of *P canescens Jack* species in Kulon Progo due to the non-ability of the fit model for the research site and the efficiency of biomass estimation in the private forest.

**Method:** Destructive method was used for six trees of *Peronema canescens* for above ground biomass and each tree component (stem, branch and leaves) were weighted and measured. Regression analysis was used for developing the allometric equation by using predictor variable such as diameter at breast height (Dbh), squared diameter at breast height together with height (Dbh<sup>2</sup>H) and diameter and height separately (D & H).

**Result:** The average above ground biomass of six trees of *P canescens Jack* species was 0.264 (26.38%) ton per tree. The fit allometric equation AGB =

$0.254(\text{DBH}^2\text{H})^{0.886}$  was developed for estimating above ground biomass of *P canescens* Jack species because it had 99.2% accuracy. According to the results, an allometric equation is recommended as an authentic method for estimation of above ground biomass in private forest.

**Keywords:** Fit model, harvesting method, biomass distribution, authentic.