

Growth and Yield Analysis of Sungkai (*Peronema canescens* Jack.) in Kalimantan, Indonesia

Abstract

Sungkai (*Peronema canescens*) is a local commercial tree (native species) that has the potential to be developed as a plantation forest and agroforestry estate. This study aims to determine the percentage of survivality, productivity, optimum cutting cycle, and financial benefits of the Sungkai tree. The study was conducted in the people plantation, Kapuas district, Central Kalimantan Province. The research took the growth parameter of Sungkai which was grown since the year 2001 to 2013 in areas with the ultisol soil type. Data analysis has been using the average value of diameter, height and volume, annual increment (annual), the regression equation of NPV, BCR and IRR. The results showed that in 12 years the percentage of Sungkai survivality reached 89.7%, with an annual increase of 14.10 m³ ha⁻¹ year⁻¹ and a density of 997 trees ha⁻¹. The Equation modelling of Sungkai plantation is $y = 2.073 + 1.6623x - 0.0165x^2$ (R² = 84.05%). At the level of loan interest of 9% per year, Sungkai have an economic harvest cycle of 15 years with NPV Rp. 58.49 million ha⁻¹, BCR: 7.64 and IRR: 11.75%. Whereas, when the loan interest rate of 6% and 12% per annum, then the cutting cycle of 15 years, the NPV are to Rp. 92.65 million ha⁻¹ and Rp. 36.6 million ha⁻¹ respectively. In this study, Sungkai tree are very suitable to be developed in agroforestry and to increase the productivity of land such as shifting cultivation area, scrubland and low potential forest areas which were widespread, especially in Kalimantan, Borneo.