

Effect of planting density on the profitability of Eucalyptus globulus plantations [Efecto de la densidad de plantación en la rentabilidad de plantaciones de Eucalyptus globulus]

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This study provides an economic evaluation of the response to planting densities and spacing patterns in Eucalyptus globulus planted for pulping. The Monte Carlo technique was used to examine the effect of price variations and the discount rate on profitability. The trial was carried out in the Central Valley of the IX Region of Chile. The treatments (T) were: 1,000 trees \cdot ha $^{-1}$ (T1); 1,428 trees \cdot ha $^{-1}$ (T2); 1,667 trees \cdot ha $^{-1}$ (T3); and 2,000 trees \cdot ha $^{-1}$ (T4). The production volume of each treatment was measured at harvest age (10 years), and then a financial analysis was made to obtain the profitability (present net value, PNV; economic land value, ELV; and internal rate of return, IRR). The highest PNV values were obtained with T1 (US\$ 330 \cdot ha $^{-1}$) and T4 (US\$ 322 \cdot ha $^{-1}$). The predictions obtained for the PNV of T1 showed a probable occurrence of 73 %, making it the least risky investment option. Higher volumetric yields (T4 and T3) do not lead to higher profitability, since the increase in planting density leads to an increase in the unit cost per plant for land management, weed control and fertilization.

Forestry economy

Monte Carlo Model

Plantation pattern

Spacing