

# EFFECTS OF SLASH AND LITTER MANAGEMENT AND FERTILIZER PRACTICES ON GROWTH AND SOIL PROPERTIES OF *Acacia mangium* PLANTATION IN QUANG TRI PROVINCE

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## Summary

The study was conducted to examine the effects of post-harvest residue management (S0: burning vs. S1: retention) and fertilizer application (F0: no fertilization; F1: application of 200 g NPK/tree, in which 100 g was applied at planting and 100 g in the second year; F2: application of 0.5 kg of organic microorganism + 300 g super phosphate and 20 g potassium per tree; F3: application of 100 g bio-fertilizer/tree) to soil properties and growth of *Acacia mangium* plantation in Quang Tri. The results showed that post-harvest residue management had no significant effect on soil properties and growth of the plantation after 36 months. However, regarding the trend of soil properties, the total soil organic matter increased slightly in the first year, then decreased in the following years, with the magnitude of decline in burning treatment was larger than in the retention. Total soil nitrogen tended to decrease slightly during the study period. Available soil P increased slightly in the first year, and then decreased substantially in the second year, and then increased slightly in the third year. Fertilizer application as F2 treatment resulted in the highest growth of DBH, height, crown diameter and biomass of the plantation, followed by F1 and the lowest was in F0 and F3 treatment. In summary, post-harvest residue management had no significant effect on the growth and soil properties, but the retention treatment appears to improve the soil properties better than burning treatment. In addition, application of fertilizer as F2 treatment is suitable for *Acacia mangium* plantation in Quang Tri.

**Keywords:** *Acacia mangium*, forest plantation management, forest productivity, sustainable management, degraded forest land, reforestation after harvesting.