ABSTRACT

ECOLOGICAL STUDIES AT THE *PINUS* PLANTATIONS AT WEWELTALAWA INVESTIGATIONS ON FLORISTIC SUCCESSION, BIOMASS ACCUMULATION AND LITTER DYNAMICS.

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Eight vegetation types at Weweltalawa were studied comparatively for several ecological processes. Undergrowth composition and characteristics were investigated in six *Pinus caribaea* plantations (2-yr, 5-yr, 6-yr, 9-yr, 10-yr and 11-yr old), one patana grassland, and a natural forest. The results showed that the younger plantations and the annually-burned plantations were floristically poor, or at best, equal to patana grasslands. The natural succession in some of these plantations are retrogressive. But the older and unburned plantations have progressed in natural succession, especially the ones closer to seed sources. Still, they are far beyond the floristic composition of the undergrowth in the natural forest.

Biomass accumulation due to reforestation is exponential. The 11-yr *Pinus* had a biomass 20 times higher than the patana grassland. The undergrowth biomass had not changed appreciably. Only the litter and tree biomass have increased.

Litter accumulation in *Pinus* plantations is over 50 times higher than in the natural forest. Early comparisons show that *Pinus* litter decomposes slower than *Cymbopogon nardus* and *Doona gardeneri* litter. *Anisophyllea cinnamomoides* litter decomposed even more slowly.