

Supol Kamsanor 2013: Plant Community Succession in Man-Made Forest and Secondary Dry Evergreen Forest at Pa Muak Lek–Tabkwang Plaeng 2 National Reserved Forest, Saraburi Province. Master of Science (Forest Resource and Environmental Administration), Major Field: Forest Resource and Environmental Administration, Faculty of Forestry. Thesis Advisor: Mr. Chongrak Watchrinrat, Ph.D. 64 pages.

The study on successional characteristics of plant community was carried out at Muak Lek-Tubkhwang national reserved forest, Saraburi province. The objectives of this study are to investigate and compare structural characteristics and composition of plant community in Man-made forest (MMF), Secondary dry evergreen forest (SDEF) and Dry evergreen forest(DEF). Three temporary plots with the size of 20\*50 m<sup>2</sup> per each forest type were set to study structural and silvicultural characteristics. In addition, analysis of variances (ANOVA) and Duncan's new multiple range test (DNMRT) were used for statistical significant differences.

The results showed that MMF had 22 species while 11 and 37 species found in SDEF and DEF, respectively. Tree, sapling and seedling density of 3 forest types are 493, 3,587 and 51,667; 293, 2,200 and 20,000; and 523, 5,040 and 44,333 stems.ha<sup>-1</sup>, respectively. In case of basal area (BA), The highest BA is MMF at 19.63 m<sup>2</sup>.ha<sup>-1</sup> following by DEF and SDEF at 10.90 and 5.83 m<sup>2</sup>.ha<sup>-1</sup>, respectively. The trend for BA is the same as that for aboveground biomass at 103.75, 68.01 and 27.67 ton.ha<sup>-1</sup> and volume at 135.37, 74.04 and 40.82 m<sup>3</sup>.ha<sup>-1</sup>, respectively. For species diversity (H'), DEF is the highest at 3.91 following by MMF and SDEF at 2.44 and 1.68 respectively. In addition, DEF was considered by using similarity index is closer to MMF than SDEF. Therefore, reforestation should be applied for more rapid growth, yield and high species diversity in degraded forest.

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Thesis Advisor's signature