Reawadee Jaisue 2006: Growth and Survival Rate of Three Seedling Species Enrichment Planted in 24 Year-Old Mixed Reforestation at Trat Agroforestry Research Station. Master of Science (Forestry), Major Field: Silviculture, Department of Silviculture. Thesis Advisor: Mr.Chongrak Watchrinrat, Ph.D. 95 pages
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The study on growth and survival rate of three seedling species enrichment planting was carried out at Trat agroforestry research station. The objectives aimed to study structural characteristics and increment of enrichment tree planting in mixed reforestation. Furthermore, basic information for silvicultural practices can be applied for structural improvement. Nine sample plots of 40x40 m^2 in size were set up for tree species, diameter at breast height (DBH) and height recording. Completely randomized design (CRD) with three treatments, no planting (control), line planting and gap planting, and three replications was used for experimental design. The planted seedlings including *Hopea odorata*, *Diprtercarpus alatus* and *Aquilaria crassna* were selected for enrichment planting. Diameter, height and survival rate were also recorded for comparison.

The results found that total number of tree species were 80 species with density 917 and 862 trees.ha^{-1} and basal area was 0.15 and 0.17 % in 2002 and 2005 respectively. L-shape was shown in term of diameter size class distribution. The vertical arrangement was divided into three layers and crown cover was ranged from 22 to 75 and 33 to 83 %, respectively. *Parkia timoriana* and *Ficus hispida* were ranged as the highest important value index in both 2002 and 2006. Total above-ground biomass was estimated as 168 and 182 ton.$ha.^{-1}$ with 4.45 ton.$ha.^{1}year.^{-1}$ in absolute growth rate (AGR). Furthermore, growth rate of three seedling species, *H.odorata, D.alatus* and *A.crassn*a of gap planting was higher than line planting even though non significant difference showed in both planting methods. Therefore, gap planting should be recommended for structural improvement of secondary forest.

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