

GROWTH PERFORMANCE OF SELECTED PLANTATION SPECIES PLANTED AT MODEL PLANTED FOREST PROJECT IN SABAL FOREST RESERVE, SIMUNJAN DISTRICT IN SERIAN DIVISION SARAWAK.

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ABSTRACT

Model Planted Forest (MPF) at Sabal Forest Reserve is a collaborative project between Forest Department Sarawak (FDS) and Malaysian Timber Industrial Board which funded by Ministry of Plantation Industries and Commodities. The Model Planted Forest Project is established at Northern part of Sabal Forest Reserve. The establishment of Model Planted Forest at Sabal Forest Reserve started on the year of 2010 which comprised of 9 compartment blocks with an area about 261.72 hectares planted with seven (7) different tree species. 12 study plots of 25m x 25m in size are established for planted species *Acacia mangium superbullk*, *Acacia hybrid*, *Eucalyptus pellita* and *Neolamarckia cadamba* while 4 study plots for *Falcataria molucana* and *Aquilaria microcarpa* respectively. The survival rate, diameter at breast height (Dbh), total height (H) and the mean annual increment (MAI) of species planted were both compared between species and within block of the same species respectively. The result indicated that, *Eucalyptus pellita* recorded highest survival rate which are 73% while *Neolamarckia cadamba* showed lowest survival rate which are 20% among the planted species. Although from the same family, *Acacia mangium hybrid* (55%) has higher survival rate compare to *Acacia mangium superbullk* (48%). *Aquilaria microcarpa* recorded 62% while *Falcataria molucana* species showed 56% of survival rate. The results show that *Acacia mangium Superbulk* (15.6cm/16.2m) and *Hybrid* (15.5cm/15.1) and *Kelampayan* (14.8cm/11.4m) respectively show the highest mean diameter and mean height compared to *Eucalyptus* (9.2cm/8.7m), *Batai* (8.5cm/4.8m) and *Karas* (7.05cm/6.9m). Observations also show both the highest Mean Annual Increment (MAI) diameter & MAI height for the species namely *Acacia mangium Superbulk* (2.2cm/2.3m) and *Hybrid* (2.2cm/2.2m). Observations also show both the highest Mean Annual Increment (MAI) diameter & MAI height for the species which are *Acacia mangium Superbulk* (2.2cm/2.3m) and *Hybrid* (2.2cm/2.2m), while medium MAI is shown by *E.pellita* (1.8 cm/1.8m), *F.molucana* (1.2/0.7m) and *A.microcarpa* (1.2cm/1.5m). Study also suggested that factors such as soil suitability, soil compaction and plantation maintenance affect the growth of species planted. Generally, *Eucalyptus pellita* has a greater survival rate but low mean annual increment, while *Acacia mangium superbullk* is the most promising fast-growing tree species for plantation.

Keywords: mean annual increment, mean diameter, mean Height