

C 627293 : MAJOR ZOOLOGY

KEY WORD: DYNAMIC / PRODUCTIVITY / SOIL FERTILITY / DIVERSITY / AGROFORESTRY
SYSTEM

PANKAEW RATTANASINGANLACHAN : DYNAMIC OF BIOMASS PRODUCTIVITY AND
SOIL FERTILITY IN THE DIVERSIFIED AGROFORESTRY SYSTEMS. THESIS ADVISOR :
ASSO. PROF. JIRAGORN GAJASENI, Ph.D. THESIS CO-ADVISOR : ASSO. PROF. USANEE
YODYINGYUAD, Ph.D. 105 PP. ISBN.....974 - 636 - 361 - 1

The experimental trial on diversified agroforestry systems have been developed at Mae Moh Forest Village System, Mae Moh district, Lampang province since 1989. The dynamic of system productivity, soil fertility, and other ecosystem processes have been closely monitoring. The purposes of this study are monitoring total system productivity, teak productivity, teak survivorship, and soil fertility dynamic. The soil study includes available and total phosphorus, total nitrogen, organic matter, total carbon, cation exchange capacity, extractable aluminum, pH and C:N ratio.

The results show that the more diversified of agroforestry plots have higher total system productivity, teak productivity, and teak survivorship than the less diversified plots. There are no significant difference between the more diversified plots and the less diversified plots in an increase of nutrient availability. However, the more diversified plot are less acidic and low in extractable aluminum when compared with the less diversified plots. Although there are high correlations of organic matter, total nitrogen and total phosphorus in the of teak + gmelina plots, the extractable aluminum in the soil is also high.

These correlations can be inferred that higher productivity in the higher diversified plots do not resulted from nutrient correlation per se, that because of less aluminum toxicity, more rapid and higher efficiency of nutrient cyclings.

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