

Manop Kaewfoo 2010: Effect of Some Properties of Termite Mound Soils on Vegetation Pattern in the Dry Dipterocarp Forest at Mae Ping National Park, Lumphun Province. Master of Science (Forest Biological Science), Major Field: Forest Biological Science, Department of Forest Biology. Thesis Advisor: Associate Professor Dokrak Marod, D.sci. 151 pages.

The main objective of this study aimed to clarify the effected of some properties of termite mound soils (TM) on regeneration of the dry dipterocarp forest (DDF). The vegetation and soil sampling both on the TM and in DDF were conducted and the analysis of forest structure, and soil properties were analysed and compared between areas.

The results showed that 2 species of mound building termite were found and species of *Macrotermes annandalei* was classified as the large termite mounds in the DDF. The soil properties showed significant different both physical and chemical between TM soils and the DDF soils. TM soils had significantly ($p < 0.001$) higher on clay particle content ($32.98 \pm 3.91 \%$) than in the DDF soils ($16.05 \pm 3.24 \%$), however, sand particle content was found in the DDF soils ($53.66 \pm 7.02 \%$) higher than in the TM soils ($39.53 \pm 2.59 \%$). Soil bulk density was also significantly different ($p < 0.05$) and higher in the TM soils ($1.34 \pm 0.07 \text{ g/cm}^3$) than in the DDF soils ($1.27 \pm 0.09 \text{ g/cm}^3$). In addition, soil chemical properties in TM soil such as soil pH (6.3 ± 0.23) and CEC ($19.15 \pm 2.49 \text{ cmol kg}^{-1}$) were significantly different between in the DDF soils (5.33 ± 0.21 and $10.83 \pm 2.37 \text{ cmol kg}^{-1}$ respectively) ($p < 0.001$). The relationships between soil properties and forest regeneration showed that clay content, soil pH and CEC had positive related to the vegetation on TM. In contrast, the vegetation in DDF had high positive correlated only soil physical properties, especially, sand content. The dominated species at the TM slightly differed from DDF and most of them distributed in the mixed deciduous forest and the dry evergreen forest such as *Walsura trichostemon*, *Diospyros coetanea*, *Protium serratum*, *Garuga pinnata*, *Polyalthia cerasoides*, *Diospyros montana* and *Casearia grewiaefolia* etc. Then, the higher species diversity on the TM was found than in the DDF. Termite which building the large termite mold can be classified as the important biotic factors and directly influenced on forest structure and species composition, especially increased the high species diversity in the DDF. Thus, the management plan of large termite mold should be established for supporting the high species diversity in the DDF.

Student's signature

Thesis Advisor's signature