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ZOOLOGY

# # : MAJOR

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BHUVADOL GOMONTEAN : RELATIONSHIPS BETWEEN SOIL PROPERTIES AND STRUCTURE OF DECIDUOUS FOREST ECOSYSTEM, HUAI KHA KHAENG WILDLIFE SANCTUARY. THESIS ADVISOR :

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The relationships between soil properties and structure of deciduous forest ecosystems was studied in the 5 representative plots of dry dipterocarp forest and mixed deciduous forest at Huai Kha Khaeng Wildlife Sanctuary. Specie composition, number of species and diameter at breast hight of trees  $\geq 4.5$  centimeters were collected. Six soil sampling were made in each plot at the depth of 0-20, 20-40 and 40-60 centimeters. Chemical and physical soil properties were analysed. Quantitative ecological parameters of trees were analysed by cluster analysis with flexible strategy. Discriminant analysis was used to related soil properties with stand cluster.

Cluster analysis suggested 2 groups of clustering based on number of species and number of individuals of 5 permanant plots. Discriminant analysis suggested that total nitrogen exchangeable iron and organic matter were important factors in discriminating between 2 groups than other soil properties. The discriminant equation to determine the structure of deciduous forests ecosystems in Huai Kha Khaeng Wildlife Sanctuary was constructed.

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