**TROPICAL GRASSLAND SUCCESSION AND PLANT FUNCTIONAL TRAITS ;**

**A CHRONOSEQUENCE STUDY**

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**Abstract**

Tropical grasslands are not only important for plant diversity but also for wildlife conservation. They are major habitat and home range of many large endangered herbivores e.g. gaur, elephant, and Sambar deer. Besides species diversity, plant functional traits can be a potential indicator of ecosystem processes and link to nature’s provision as ecological services. In the Khao Yai National Park, Thailand, the grasslands were maintained by park rangers using non-systematic prescribed burning or mowing. Consequently, these management occasionally generated mosaic grassland patches with different succession times, providing us an opportunity to examine grassland succession. Our aims of the study are to compare the plant functional traits among these grassland succession patches. We measured plant functional traits and used the community-level weighted means of trait values for comparison. Furthermore, we assessed the correlation between plant functional traits and environmental heterogeneity. Here we showed that the functional traits, i.e. specific leaf area, leaf dry matter content, and relative maximum height, were not likely to depend on succession time. While focusing on species level, plant functional traits were different depending on some dominant species which were influenced by the soil heterogeneity. In conclusion, the results suggested that an appropriate management should be determined mainly on plant diversity. Nevertheless, plant functional traits should be complimentary considered because of differences in soil properties among patches and the correlation between soil properties and plant functional traits. Moreover, we found a primarily certain level of redundancy, implying that a cause of non-difference in the functional traits among succession stages helping to maintain ecosystem properties influenced from a disturbance such as fire in the grassland ecosystem.

Key words : ecological succession, ecosystem function, ecosystem service, plant functional trait, redundancy, tropical grassland