

Dynamic of *Shorea siamensis* Miq. Seedling in Fire Burned and Fire Protected Areas of Dry Dipterocarp Forest at Sakaerat, Changwat Nakhon Ratchasima

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ABSTRACT

Studies of silvical characteristics, relationships of silvical characteristics and environmental factors and nutrient mineral content in *Shorea siamensis* Miq. Seedling were conducted in fire burned and fire protected areas of Dry Dipterocarp Forest at Sakaerat. Three permanent plots of 5x5 m² in size of each were laid out each area data collection was carried out every month from May 1999 to April 2001. The differences of silvical characteristics were determined by using Paired sample T-Test. The relationships of silvical characteristics and environmental factors were calculated by using Pearson's correlation method and the differences of nutrient mineral contents were determined by using Kruskal – Wallis test.

The results were found that between fire burned and fire protected areas, the number of seedling, height, root collar diameter, number of leaf and ratio of stem height and root length were statistical differences but mortality rate and biomass of shoot-root ratio of the two areas were similar. The number of seedling in the fire burned area was 126.17 seedling / m² that was related to amount of rainfall and grass biomass, for the fire protected area, it was 29.57 seedlings / m² that was not related other factors. Mortality rate in the fire burned area was 9.37 %/month, that was not related to other factors, for the fire protected area, it was 13.37 %/month that was related to amount of rainfall and soil moisture content. Height of seedling in the fire burned area was 5.07 cm that was related to amount of rain fall and grass biomass, for the fire protected area, it was 10.06 cm that was not related to other factors. Root collar diameter in the fire burned area was 0.99 mm, that was related was related to amount of rainfall, relative humidity and grass biomass, for the fire protected areas, it was 1.17 mm that was not related to other factors. Numbers of leaf in fire burned and fire protected areas were 1.75 and 1.90 leaf/tree that were related to amount of

rainfall, soil moisture content and grass biomass. Biomass of shoot-root ratio in the fire burned area was 0.23, that was related to amount of rainfall and grass biomass, for the fire protected area, it was 0.26, that was related to relative humidity and grass biomass. Ration of stem height and root length in fire burned and fire protected areas were 0.36 and 0.82, that were related to grass biomass. Nutrient mineral content in stem, leaf and root of seedling were different and N contents of them were 0.555, 1.555 and 0.778 %, P contents of them were 0.206, 0.129 and 0.270 %, K contents of them were 0.687, 0.537 and 0.481 %, Ca contents of them were 0.042, 0.023 and 0.047 %, Mg contents of them were 0.056, 0.055 and 0.061 %, respectively