Distrubutional pattern, gap formation and turnover time in dry evergreen forest at Sakaerat.

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ABSTRACT

Study on the distribution patterns, gap formation and turnover time in the dry dipterocarp forest at Sakaerat, Amphoe Pak Thong Chai, Changwat Nakhon Ratchasima were investigated during March, 1982 to March, 1984 by using the permanent sample plot of 100x100 m^2 which was laid out since 1982. Pattern of spatial distribution employing Morisita' s index of dispersion (I_δ) and m*-m regression were employed for total individuals and the nine important species. Study on gap formation, turnover time of canopy tree and the forest growth cycle were also investigated.

The results revealed that total individuals (for trees larger than 4.5 cm in DBH) showed random distribution. Seven important species showed contagious distribution while the rest showed random distribution.

The statistical method were used for age determination from data of annual diameter increment in marked and numbered sample trees of different diameters during one year period, the study is based on nine important species. First order difference equation were developed to determine age (n) of tree species when DBH of each species (D_n) were known.

The number of gaps in 1 ha plot were 10 gaps. Gap area was 1,860 m^2 (18.60% of total land area). The average size of gap was 115 m2 and the maximum size was 420 m^2. Gaps were made by 1-3 gap making tree. The concentration of gap formation in particular years was not observed. In average 0.48 canopy trees per hectare were died, and gap of 41.33-82.66 m^2 per hectare were made annually. The turnover time which was calculated from four different methods was 100-230 years.

Three phase were distinguished and it took about 0-45, 45-100 and 100-200 years for gap, building and mature phase, which were described by Watt (1974) and whitmore (1978, 1982).