Growth of trees in dry dipterocarp forest at Sakaerat Pak Thongchai, Nakhonratchasima.

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ABSTRACT

Measurements were made on sample plot (100 X 100 m.) in undisturbed dry dipterocarp forest at Sakaerat, Pakthongchai, Nakhonratchasima. Species and D.B.H. of all trees (over 1.30 m. high) in sample plot were recorded in November 1972, December 1974 and December 1975 respectively. The radial growth of 28 tree trunks of four principal species (Shorea talura Roxb., Pentacme suavis A. DC., Quercus kerrii Craib and Sindora maritima Pierre) were measured monthly with vernier bands during Febrary 1975 to March 1976. Soil moisture and rainfall were also recorded. Crown position, crown form and crown diameter were also recorded for two main species (Shorea talura Roxb. and Pentacme suavis A. DC.).

The results showed that the density of trees over 1.30 m. high were 803 trees per hectare with 70 percent of crown cover and the annual mortality was about 0.70 percent whereas the annual net growth was 2.24 percent of total basal area respectively. The frequency distribution of diameter showed the maximum frequency at the smallest diameter class, whereas the maximum basal area was found in the medium diameter class. Monthly basal area change of four principal species was related to rainfall and soil moisture. The relationship between diameter, crown position, crown form, crown diameter and mean annual basal area growth of two main species could be expressed by the equation of the following form.

Shorea talura Roxb.

$Y = -1.28837 - 0.0531X_1 + 0.2774X_2 + 0.5736X_3 + 0.5576X_4$

($R^2 = 0.2639$)

Pentacme suavis A. DC.

$Y = -5.5020 + 0.2526X_1 + 0.7291X_2 + 2.5535X_3 + 1.4445X_4$

($R^2 = 0.4258$)

Where

Y = mean annual basal area at breast height growth ($cm.^2$)

X_1 = D.B.H. (cm.)

X_2 = Crown position

X_3 = Crown form

X_4 = Crown diameter (m.)

The probable ages of 16 tree species in dry dipterocarp forest at Sakaerat Pakthongchai Nakhonratchasima were estimated by using the statistical method based on data of annual diameter increment in marked and numbered sample trees of different diameters during a two years period.