

An ecological study on population, biomass and species composition of soil fauna in dry dipterocarp forest, Sakaerat Nakhonratchasima.

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ABSTRACT

The purpose of this research is to study of changing in population, biomass, species composition, horizontal distribution of monthly collected from March 1975 to February 1976 in dry dipterocarp forest, Sakaerat Nakhonratchasima. The sampling size used $1 \times 1 \text{ m.}^2$ for macrofauna and $25 \times 25 \text{ cm.}^2$ for mesofauna and $7 \times 7 \times 7 \text{ cm.}^3$ from three levels depth (0-7, 7-14, 14-21 cm.) for mesofauna dealing with vertical distribution study. Mesofauna was extracted by mean of Tullgren – funnel. Macrofauna was handsorted in the the field. Environmental factors of soil, such as percent organic matter, nitrogen content, phosphorus content, potassium content, acidity, water content of soil and litter, weight of litter, temperature, relative humidity and rainfall were analysed and recorded.

Result;

Biomass of soil fauna found highest in June (3.1015 gm./m.^2) and lowest in March (0.1355 gm./m.^2). This was the effect of water content in soil and litter. The biomass change were mostly caused by the appearance of chafer larvae and millipedes. Total number of soil fauna was maximum in September ($2168.4 \text{ individual/m}^2$) and minimum in April ($39.6 \text{ individual/m}^2$). The population changes were mostly depended on Acarina and factor affecting was also moisture of soil and litter. There was random distribution of soil fauna in this forest because of the effect of microenvironments vertical distribution of Acarina showing the population found more abundance at the upper soil layer where foods were rich and soil was aerated.

Conclusion :

1. Population, biomass and species composition of soil fauna are fluctuated causing by water content in soil and litter.
2. Soil fauna plays an important role on organic matter accumulation.
3. There is no correlation of soil fauna and amount of nitrogen, phosphorus and potassium in soil.
4. There is a random horizontal distribution pattern of soil fauna.
5. Acarina is abundant in the upper soil layer.
6. **Prey – predator relationship is demonstrated.**