



**POPULATION DIVERSITY AND SPECIES RICHNESS IN TERMITES FROM THE
ANNAMALAI UNIVERSITY CHIDAMBARAM, TAMILNADU, INDIA**

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Abstract

A pilot study on abundance of termite survey were conducted in and around the Annamalai University campus in related to the degradation of biomass lane. Out of the survey we were found four different species, namely *Coptotermes Heimi*, *Microtermes obesi*, *Odontotermes obesus*, *Nasutitermies sp.* This diverged nature of termite population reflects as major role the process of biomass degradation and population establishment. As per the simpson and Shannon transect protocol the diversity of termite population and along with the dependant dwellers were recorded respectively the study areas are as followed playground, guest house garden, Canteen garden, Main library garden, in and around the campus.

Key words: Diversity, Termites, Sample Collection, Species Diversity, Species Richness

Introduction

Termites are actually of role as a dignified engineer of the ecosystem of tropical as well as sub-tropical region. They are responsible for the redistribution of soil particles and alter the mineral and organic composition of soils as well as their hydrology (Clive *et al* 1994). In tropical ecosystem termite are vast groups comes under arthropods (Bignell & Eggleton 2000). They are having important role in recycling of nutrients and soil fertilization of forest ecosystem (Farkhanda Manzoor *et al* 2010). As per the process of decomposition includes wood, grass, plant, litter, fungi or collectively called biomass on the surrounded ecosystem of the soil containing organic materials were encounters. These activities increase the water retention in the soil and lead the vegetation productivity (Alexandre Vasconcellos & Nash *et al* 2010). On behalf

of the stipulated activities termites are considered as a key model organism of the process of decomposition and maintenance of structural and function integrity of the ecosystem (Holt & Coventry 1990; Whitford 1991). In generally population and nature of diversity richness may varied based on the temperature fluctuations also the fluctuations of species richness, varied from species to species (Nageswara Rao 2012 and Davies *et al* 2012).

Material and Methods

Study Area

Sample collection and survey were conducted in and around Annamalai University campus situated in northeastern our campus (11.3908° N, 79.7148°E) the campus is spread across 1,500 acres (6.1km²) in with agriculture lands, vegetation, gardens and buildings. The map of the area was obtained from the all department of the institution.

Collection of Termites

Our university surrounded by fertile agriculture lands and they were cultivating different varieties of economically important commercial crops, herbs along with number of coconut tree and fruit orchids. During the rainy seasons logs of dead wood lane's from the cultivation land and from yard. Apart from this get concern on logs from the coconut tree and coconut leaves that fall on the ground and encumbered with termites due to the moister nature of the soil and begin to decay due to the action of soil microbes, termites and associated microbiota. The analyses of decaying log woods noted and, isolated for plating to unravel the nature of decaying period of particles and they were discussed.

We followed David. Jones (2002) transect's procedure were followed to measure the actual nature of the species biodiversity of termite among the competitors.

Termite diversity on Simpson and Shannon index was worked out according to Simpson (1949) and Shannon- Weiner function (Odum 1975).

Discussion

A structural group of wood log destroying termites were randomly collected from four different locations for the experimental studies respectively *Rhinotermitide*, *Termitidae*, *Odontotermes*, *Nasutitermites*. Diversity of the selected termite species are as follows *Odontotermes* are having 47% percent as a major constituent follow by *Microtermes* 28% *Coptotermes* 16% and *Nasutitermites* species 7% (Fig1).

As a result of multiple transects species *Odontotermes* has the domain properties and it shows the densed nature of among the four different species at the specified location the stability of the population also maintained thought the session of sample collection playground, Guest house, Canteen Garden, and Main library Garden. Especially feed on death woods, trees, plants has attacked and degrading the ground soil level, wood loss and debris. Periodical monitoring of plants and trees were most important otherwise the garden plants may be severally attacked to the outside thus contributing to show death of the standing trees (Roonwal *et al* 1955). Four different termite species were collected from different localities and monitor the diversity by monthly basis both morning and evening in and around the mounds regime. Basis of this compare the evenness or distribution of the individuals surrounded by species foraging capacity during the time of sample collection. The maximum diversity of Simpson scale was recorded 33% in April month and the minimum 19% in March month. The soil feeding termites were noted in playground only under decaying logs fortunately were the retained.

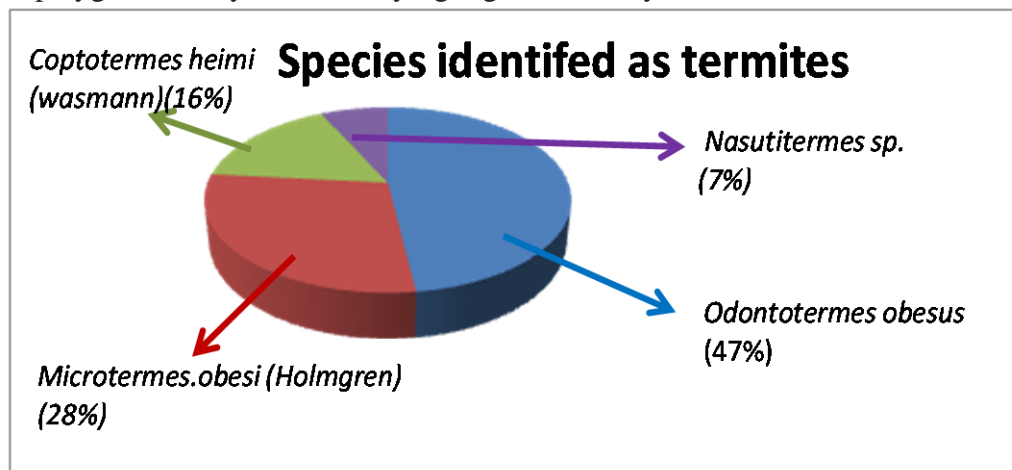


Fig.1. shows the percentage of diversification in selected locations /study area



Odontotermes obesus



Microtermes. obesi.
(Holmgren)



Coptotermes heimi
(wasmann)



Nasutitermes sp.

Fig.2. four different species were identified in the selected study area.

Conclusion

Species Richness and nature of the population diversification depends upon the presence of the biomass, dead woods and wood logs. Mostly manmade activities are not having that much of impact on the growth and establishment of their mount practices and species wealthiness. Particularly these typical termite species helps to evict the dumping of biomass and maintaining the environment and soil in viable condition.

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