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ABSTRACTS

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09-07

TERMITE ASSEMBLAGE AND ITS POSSIBLE CORRELATION WITH EARTHWORM ABUNDANCE IN DIFFERENT LANDUSE PATTERNS OF SELECTED AREAS IN NORTHERN WAYANAD, KERALA

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Background: Soil organisms contribute to the soil health and thereby to the plant growth and yield. It is very likely that soil organisms are affected by the land use patterns. Termites and earthworms are the major soil organisms, that improve the soil physically, chemically and biologically. The study planned to investigate the assemblage of termites in different landuse patterns in selected areas of Western Ghats in northern Wayanad, Kerala. Since termites are considered as the tropical analogue of earthworm, a possible relationship with the abundance of termite and earthworm were also studied.

Methods: The duration of the study was four months (from July 2017 to October 2017). The study was carried out in four ecologically different areas forest (unaltered natural system), coffee plantation (least managed monoculture landuse), tea plantation (intensively managed monoculture landuse), and mixed crop (less intensively managed heterogeneous landuse),where termites were sampled by random and transect sampling using forceps and brush. A transect (Jones and Eggleton 2000) was run out in each studied landuses.

Results: The study showed variation among the termite faunal composition and diversity among the landuses. A negative value for correlation coefficient was obtained between termite and earthworm in all study sites. Highest value for correlation was obtained for forest ecosystem followed by the comparatively less disturbed mixed crop system and the least value for tea plantation. During the study, 21 species of termites belonging to 10 genera under 4 subfamilies were recorded. The entire species recorded in the study come under the family Termitidae. Maximum number of species were present in the subfamily Macrotermitinae. The most dominated genus was *Odontotermes* in all the study sites.

Conclusion: The study showed that the major soil engineers viz. termites and earthworms are affected by landuse changes. Maximum diversity was recorded in forest and minimum in the tea plantation. It requires further elaborate studies to confirm this trend, its reasons and plan effective soil management practices. Considering the ecosystem services of termites, documentation of its diversity in different landuses can provide important information to justify habitat quality and conservation values of ecosystems.

Keywords: Assemblage, diversity, earthworm, landuse, termite, Wayanad

09-08

EVALUATION OF THE ANTI-UROLITHIAC ACTIVITY OF *ARENGA WIGHTII* GRIFF. (ARECACEAE) IN WISTAR RATS

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Background: A gradual increase has been noticed in the incidence and morbidity of Urolithiasis with a wide spectrum of risk factors (age, gender, geography, dietary habits, occupation and medication)

study. The specimens were collected from four different sites including Taliparamba, Kannadiparamba, cheleri and Thottada of Kannur district. From this study Curculionoidea belonging to four families were obtained. They include Curculionidae, Dryophthoridae, Brentidae and Anthribidae. Of these Curculionidae was the dominant family with maximum number of species. Least number of species was obtained in the family Anthribidae.

V26. Traditional knowledge on control of termites attacking buildings and its laboratory evaluation

Anushya, A.V. and Swaran, P.R.

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Termites are one of the most destructive insect pests of buildings across the world. Though chemical termiticides are widely used for controlling termites, it has many limitations for indoor use. Thus an attempt was made to collect the traditional knowledge on termite control, and to test out the promising methods in the lab. 30 houses each were surveyed in three geographical areas-highland, midland and coastal area. Questionnaire was prepared for collecting information on the control methods adopted or known by the homeowners. The study showed that 54 homeowners attempted controlling the termites, in which 45 used Kerosine. Ten traditional control methods were tested in laboratory and three of them *viz.* Salt, Kerosine and Acrostychum were found to give effective control on termites.

V27. Infection parameters of copepods and isopods from the marine fishes of Malabar coast

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The aim of the present study was to investigate the crustacean parasite fauna and the coexistence of copepods and isopods in the marine fishes of Southwest India. The study period was from July 2019- December 2019. A total of 435 marine fishes belonging to 4genera and4families were surveyed during the period. Among these, 124 fish species (under 4 genera & 4 families) showed parasitic crustacean infection. Totally 7 species of copepods (from 5 genera & 4 families) and 2 species of isopods (from 2 genera & 2 families) were recovered from these infected fishes. Infection parameters such as site of infection, prevalence and mean intensity were recorded. Indian mackerel, Rastrelliger kanagurta collected as weekly samples from the Malabar Coast revealed biparasitism by 4 species of copepods and 1 species of isopod. The copepod (Pumilopes jonesi) and the isopod (Norileca indica) infecting R. kanagurta showed prevalence of 15.48% and 12.97%, respectively. Similar results were obtained from other fishes showing a remarkable difference in parasitic prevalence and intensity. Ongoing study addresses more details of host-parasite int...

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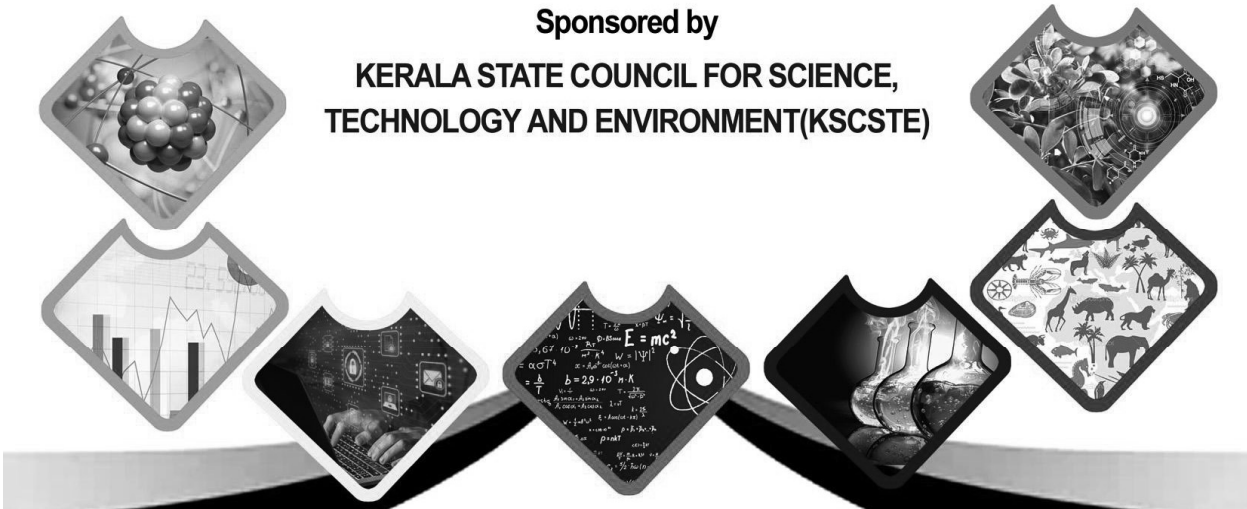

ZLS02 Temporal activity of termites in different habitats of Wayanad

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Abstract

Temporal activity of termites was studied across four different habitats in Wayanad viz., Grass land ecosystem, Pepper plantation, Mixed crop ecosystem and Home garden. Termites were randomly sampled from the four habitats from morning (6.30am) to evening (5.30pm). 30 minutes spent for sampling with 1 hour interval in between. Only the active/feeding termites were collected and never collected from the mount and below surface. The result indicates a temporal pattern in termite activity with highest activity in morning hours (with moderate soil temperature) and lowest activity by noon (with high soil temperature). A significant negative correlation between soil temperature and termite activity was observed. The study recorded 16 termite species that belonged to a single family Termitidae and represented by two genera viz., Odontotermes and Microtermes. Odontotermes redemanni was the most dominant species followed by O. yadevi and O. obesus. Pepper plantation recorded highest termite diversity (12 species) followed by Grass land ecosystem (11 species). The termite activity and species composition were also found to vary with habitats. Termite distribution and their activity are influenced by soil temperature, microhabitat differences and on a large perspective, the climate change.

Key words: Termites, temporal activity, soil temperature, Odontotermes, Microtermes.

ZLS03 On the jellyfish blooms along northern Kerala

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Abstract

Jellyfishes have a significant role in the pelagic community including fishery resources and functioning of the marine ecosystem. Reports on large scale assemblage of jellyfishes known as jellyfish blooms are on the increase recently. In this context, a study was conducted in Kannur and Kasaragod districts of Kerala to find the species of jellyfishes and factors affecting their distribution and assemblage. The study conducted during 2021-2022 showed that jellyfish abundance in the region is mainly contributed by four species - Acromitus sp., Lycnorhiza sp. Cyanea sp. and Chrysoara sp. (molecular analysis is required to confirm species level identity, which is being done). Among this Chrysoara sp. is more dominant. Its itching nature is reported as a major problem by fishermen. The major morphological feature of the jellyfishes is the diameter of the exumbrella and it varies between species. Acromitus sp. have an exumbrellar diameter of 140 ± 20 mm inside, with oral arms measuring 110 ± 25 mm, whereas Chrysoara sp. and Lycnorhiza sp. have large diameter size ranging from 330±20 mm and oral length of 270 ±20 mm. The bloom was more frequent and predominant in the post-monsoon season. Environmental factors do have an influence on jellyfish abundance. The study indicates a positive association with temperature and salinity. Some species like Acromitus are found in both marine waters and the backwaters (located at Kavvayi), which shows its salinity tolerance. The salinity here varies from 35 ppt (marine) to 16 ppt (backwaters) respectively. Acromitus is innocuous and they were abundant in mangrove regions near Kattampally shutter and Perumba regions. Temperature in the study area ranged from 23^{O}C to 26^{O}C. Variation of pH was not much visible in the sampled area.

Keywords: jellyfish bloom, Acromitus, Lychnorhiza, Cyanea, Chrysaora, salinity, temperature

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Diversity of Termites In Coastal Areas of Northern Kerala

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ABSTRACT

Random sampling to assess termite diversity was done within 100m distance from coastline in 10 different sites in northern Kerala. A total of 115 samples were collected that belong to 23 species under two families and three subfamilies. The subfamily Macrotermitinae dominated with 13 species. A total of five genera were identified in which the genus *Odontotermes* Holmgren represented highest number of species followed by *Microcerotermes* Silvestri and *Heterotermes* Froggatt. Genus *Synhamitermes* Holmgren and *Microtermes* Wasmann were represented by one species each. *Odontotermes redemanni* Wasmann was the most abundant species followed by *Microcerotermes fletcheri* Holmgren & Holmgren. Majority of the recorded species were included in the group of wood destroying termites. Diversity indices indicate high termite diversity in coastal area. The result indicates that the 'salt and sandy' soil is not an impediment for termites unlike many of the other soil organisms.

KEYWORDS: Termite diversity, Northern Kerala, Coastal area, *Odontotermes, Microcerotermes*

INTRODUCTION

Termites are eusocial insects which decomposes variety of cellulose based resources and ensure the recycling of organic matter in ecological habitats (Ackreman et al. 2009, Sugimoto et al. 2000). They are the dominant soil macroinvertebrate in tropics (Bignell and Eggleton, 2000). About 3000 termite species of 12 families and 330 genera are described so far across the world. Though termites are branded as pests, it is worth mentioning that among the total termite species recorded in the world, only 12.4% are regarded as pests (Krishna et al., 2013). India is rich in termite diversity; harbors 295 species belonging to 52 genera under six families representing almost 10% of the world's termite fauna (Krishna et al. 2013; Rajmohana et al. 2019). Termites are occurring in many ecosystems throughout tropical region. Coastal plains have lowest abundance of macroinvertebrates (Huerta and Wal 2012), but few studies indicated rich termite fauna (Kemp, 1955, Bose and Das 1982). Studies on termite species in coastal areas of Kerala are not available so far. At the same time, coastal area is usually rich in cellulose materials deposited by the waves, which can attract termites. The present study provides information on termite diversity in coastal areas of northern Kerala.