



FEDERAL UNIVERSITY OF TECHNOLOGY, MINNA
School of Life Sciences



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Book of Abstract

THEME:

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THE ROLE OF LIFE SCIENCE

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**Africa Center of Excellence (ACE)
for Mycotoxin and Food Safety**

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• Vision

- To be a global food safety training and research authority in order to realize sustainable and secure health for humanity.

• Mission:

- The creation of the Africa Center of Excellence (CoE) for Mycotoxin and Food Safety will create learning opportunities and research results to address Africa's shortage of expertise and applicable solutions to ensure a safe, controlled and sufficient food supply that will support economic growth and public health.

TRANSMISSION INDICES OF MALARIA INFECTION IN CHANCHAGA LOCAL GOVERNMENT AREA OF NIGER STATE, NIGERIA

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ABSTRACT

Despite intensive control measures and intervention in Nigeria, malaria remains a major public health threat. The dearth of information on the diversity and distribution of *Anopheles* mosquito species, a prerequisite to successful malaria control, informed this study. Indoor adult mosquito populations were sampled using Pyrethrum Spray Catches (PSC). Two hundred and seventy-six (276) human individuals were examined for malaria parasites using Giemsa staining techniques. All individuals were screened for the presence of malaria parasite and classified into four (4) age groups: < 5 years, 6 – 10 years, 11 – 15 years and >16 years. A total of 1516 mosquitoes were collected and identified as follows; *Anopheles* species 371 (24.47%) and *Culex* species 1145 (75.53%). Mosquitoes collected per location were as follows F-layout 399 (26.31%), Tunga 406 (26.28%), Chanchaga 361 (23.81%) and Sauka-Kahuta 350 (23.08%). The distribution of mosquitoes per location showed a significant difference ($p < 0.05$). Six species of *Anopheles* mosquitoes were identified. These were *Anopheles gambiae*, 235 (63.34%), *Anopheles funestus*, 111 (29.92%), *Anopheles coustani*, 10 (2.69%), *Anopheles nili*, 6 (1.62%), *Anopheles squamosus*, 6 (1.62%) and *Anopheles moucheti*, 3 (0.81%). Tunga had the highest number of *Anopheles* mosquitoes 116 (31.27%), followed by F-layout 93 (25.07%) while Sauka-Kahuta had the least number of *Anopheles* mosquitoes collected 74 (19.95%). The collected mosquitoes were subsequently dissected for sporozoite infection rate (54.56%) and parity (egg-laying status) rate (62.5%) using standard procedures. These were not statistically significant ($p > 0.05$). Of the 276 human blood specimens examined, 178 (64.49%) were positive to *Plasmodium falciparum*. Individuals of the age group 6 – 10 years had the highest infection rate of 40 (78.43%), followed by 16 years 87 (63.50%) while the age group 0 – 5 years, had the least infection rate of 6 (56%). Males were more infected 91 (67.91%) with malaria than females 87 (61.27%) which also showed a significant difference at $p < 0.05$. This study demonstrated the complex distribution of *Anopheles* mosquito and the considerable variations in the intensity of malaria transmission in Chanchaga Local Government and its environs. The study indicates an abundance of malaria vectors in the study area, hence the need to intensify control strategies to eliminate larva sources of the vectors.

Keywords: malaria. Vectors, *Anopheles*, species, *Culex* species, mosquitoes