



ISSN: 2348-5906
CODEN: IJMRK2
IJMR 2017; 4(3): 53-55
© 2017 IJMR
Received: 10-03-2017
Accepted: 11-04-2017

Khalid Usman
Department of Zoology,
Hazara University Mansehra,
Khyber Pakhtunkhwa, Pakistan

Hameed Ur Rehman
Department of Chemistry,
Kohat University of Science &
Technology, Pakistan

Khalid Pervaiz
Fisheries Research & Training
Institute, Government of the
Punjab, Lahore Pakistan.

Sheerish Khudadad
Department of Zoology,
Hazara University Mansehra,
Khyber Pakhtunkhwa, Pakistan

Safia Gul
Department of Plant Sciences,
SBK Women University, Quetta
Pakistan

Muhammad Fahad Ishtiaq
Department of Environmental
Sciences University of Gujrat,
Pakistan

Baharullah Khattak
Department of Microbiology,
Kohat University of Science &
Technology, Pakistan

Correspondence

Hameed Ur Rehman
Department of Chemistry,
Kohat University of Science &
Technology, Pakistan

Evaluation of mosquito fauna in Masti Khel district Karak Khyber Pakhtunkhwa, Pakistan

Khalid Usman, Hameed Ur Rehman, Khalid Pervaiz, Sheerish Khudadad, Safia Gul, Muhammad Fahad Ishtiaq and Baharullah Khattak

Abstract

The aim of the present research was to evaluate mosquito fauna in Masti Khel District Karak Khyber Pakhtunkhwa Pakistan. Randomly sampling of male and female mosquitoes were carried out from the selected zone of the study. The species collected and identified were *C. mimeticus*, *C. theileri*, *Anopheles stephensi*, *C. annularis*, *Aedes albopictus* and *A. shortii*. All the identified species mosquitoes were properly arranged in a systematic way. From the present research, it can be concluded that this area of the District possess a variety fauna of mosquito. Proper controlling steps should be taken to stop further growth of mosquito's population otherwise it may be very harmful in the disease spreading like Malaria and Dengue fever. All the three Genus Culex, Anopheles and Aedes comprise the 2 species each.

Keywords: Mosquito, Chokara, identification, family, vector, malaria

1. Introduction

Mosquitoes are slender biting insects of the order Diptera, suborder Nematocera and family Culicidae, with about three and half thousand species^[1]. Mosquitoes are cosmopolitan found everywhere except for Antarctica^[2]. In warm and humid tropical regions, various mosquito species are active for the entire year, but in temperate and cold regions they hibernate or enter diapauses^[3]. Many species are native to tropical and subtropical regions some, such as *Aedes* have successfully adapted to cooler regions. In the warm and humid tropical regions, they are active the entire year long; however, in temperate regions they hibernate over winter. Eggs from strains in the temperate zones are more tolerant to colder than ones from warmer regions^[4]. They can even tolerate snow and temperatures below freezing. In addition, adults can survive throughout winter in suitable microhabitats^[5]. The diversity of the mosquito species varies among different geographical regions of the world. The greatest diversity of mosquito species is found in the Neotropical region (31% of total known species; 1069/3492) followed by the Oriental (30%), Afrotropical (22%) and Australasian (22%) regions. The Nearctic region (5%) has the lowest species diversity^[6]. Pakistan has an abundance of Oriental, Palearctic, and Ethiopian (Afrotropical) fauna. It is fascinating to mention that insect fauna confirm the transitional position of Pakistan^[7]. The aim of the research work was to conduct work on evaluation of Mosquito Fauna in Masti Khel District Karak Khyber Pakhtunkhwa, Pakistan.

2. Materials and Methods

2.1 Study Area

Masti Khelis situated in District Karak Khyber Pakhtunkhwa Pakistan. There is a variety of flora and fauna over here.

2.2 Collection and Identification

Only outdoor collections were made in the present study. Immature forms of mosquitoes were collected by dipper method^[6] from the temporary pools and other breeding sources in the study area and. The emerged adults were preserved in plastic vials for later identification. The resting adults were collected from the cattle shed using aspirator and from the bushes using sweep net. The biting adults were collected between 6 to 8 Pm by the method followed by Pandian^[8] near human dwellings and cattle shed. The collected specimens were later identified by using the standard keys of Barraud (1934)^[9] and Christopher (1933)^[10].



Fig 1: Map of Masti Khel District Karak Khyber Pakhtunkhwa, Pakistan.

3. Results and Discussion

The present study was conducted in Masti Khel District Karak Khyber Pakhtunkhwa, Pakistan to find out Mosquito fauna. The collection was carried out especially at the time of 6-8 pm. The collected and recorded species were *Culex mimeticus*, *C. theileri*, *Anopheles stephensi*, *C. annularis*, *Aedes albopictus* and *A. shortii* shown in Table, 1. All the identified species mosquitoes were properly arranged in a systematic way.

From the present research, it can be concluded that this area of the District inhabits variety fauna of mosquito. Proper controlling steps should be taken to stop further growth of mosquito’s population otherwise it may be very harmful in the disease spreading like Malaria and Dengue fever. A study was conducted to find out the mosquito biodiversity of Dibru-Saikhowa biosphere reserve in Assam, India. During the survey 30 species of mosquitoes were recorded [11, 12]. There was a big variation found when the results of the both studies were compared. The reason of the variation may be due to a separate location of both the study area. Another study was conducted in Manipur State to find out Biodiversity of mosquitoes and their medical significance. Seventeen species were recorded during the research work and identified up to the species level [13]. Another study was conducted to find out Anopheline diversity in the Undivided Aizawl district of Mizoram, India. Sixteen species of mosquitoes were recorded and classified [14]. From the current study it can be concluded that the climatic factors of the previous study remain too much different. That’s why a big variation occurs in the result of the both studies. A study was conducted to explore the mosquito fauna of northeastern region of India. Twenty two species of the mosquitoes were identified [10, 15]. In the current

study only 3 Genus were recorded which comprises 6 species of the mosquito. The difference in the numbering of mosquito species shows that there is a great variation in the climate of both studies.

Table 1: Exploring of mosquito fauna in Chokara District Karak Khyber Pakhtunkhwa Pakistan.

S. No	Class	Order	Family	Genus	Species
1	Insecta	Diptera	Culicidae	Culex	<i>quinquefasciatus</i>
2	Insecta	Diptera	Culicidae		<i>mimeticus</i>
3	Insecta	Diptera	Culicidae		<i>theileri</i>
4	Insecta	Diptera	Culicidae	Anopheles	<i>maculatus</i>
5	Insecta	Diptera	Culicidae		<i>stephensi</i>
6	Insecta	Diptera	Culicidae		<i>annularis</i>
7	Insecta	Diptera	Culicidae	Aedes	<i>albopictus</i>
8	Insecta	Diptera	Culicidae		<i>shortii</i>
Total	01	01	01	03	08

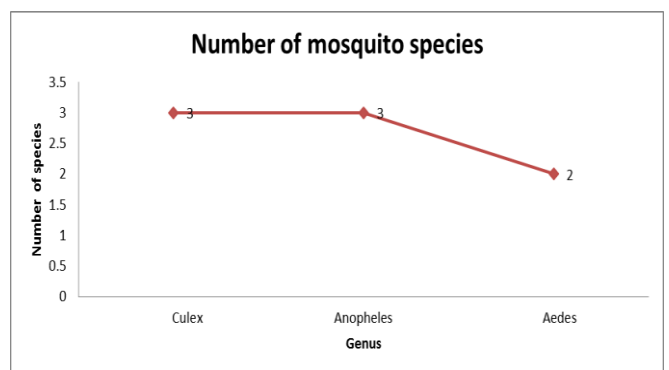


Fig 2: Genus wise mosquito fauna in Chokara District Karak Khyber Pakhtunkhwa, Pakistan.

4. Conclusion

From the Current survey, it can be concluded that Masthi Khel comprises a lot of mosquito fauna which are the main vector of Malaria and Dengue fever. Furthermore, maximum fauna of the mosquito were collected beneath the shady trees, used tires stock and in the stagnant water.

5. Acknowledgement

This work was supported by the Higher Education Commission fellowship. I would like to thank Hameed Ur Rehman scientific and technical support. I am also greatly thankful to my brother Dr. Wahid Raza who helps me during specimen collection.

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