

Regular Article

# Diversity of Mosquitoes in Jalna urban, Maharashtra State, India

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**ABSTRACT:** Present paper deals with the study of diversity of mosquitoes in Jalna urban of Maharashtra state in one year that is from June 2008 to May 2009. During a period of two years a total number of 1998 mosquitoes were collected and examined. Percentage density of different genera was found as *Anopheles*-64.71%; *Aedes*-19.61%; *Culex*-11.61% and *Mansonia*-4.05%.

**Key words:** Mosquitoes, Jalna, diversity, *Anopheles*

## Introduction

Mosquitoes play an important role in spreading diseases, *Anopheles*-Malaria, *Culex*-bancroftian filariasis, Japanese encephalitis, *Aedes*-dengue and chikungunya fever, *Mansonia*-Malayan filariasis and chikungunya fever. Mosquitoes belong to class insect, order Diptera and family culicidae. This family contains about 3500 species in three sub families anophelinae (3 Genera) and culicinae (at least 37 Genera), and the toxorhynchitinae (1 Genus). Mosquitoes play an important role in ecosystem like food for aquatic organisms and they are vectors for various diseases. In most of the species females suck blood from the hosts. The mosquitoes are variable in their sizes. Mosquitoes weigh from 2-2.5mg. They can travel up to 1-2km/hr and reach at most up to 11 kms in search of food and mate. Most of the species are nocturnal or dawn or evening feeders (Jawetz, 1987). Jalna city is situated at the center of Maharashtra State and in northern direction of marathwada region. It lies between 19°1 north to 21°3 north latitudes and 75°4 east to 76°4 east latitude.

## Materials and methods

The mosquitoes were collected from five sampling sites by using different aspirators and nets, resting boxes and repellents during the

morning and evening hours. A search for adult mosquitoes was made in every possible habitat like human dwelling, cattle shade, sites such as bushes, discarded containers and garbage dumped wet lands. After collection, samples were immobilized with 70% alcohol followed by their sorting up to genera level and their photography using dissecting microscopes and digital cameras. Identification was based on adult characters using standard taxonomic key and catalogues of mosquitoes identification key of Christophers (1933) and catalogue of Nagpal and Sharma (1995).

## Results and Discussion

Table 1,2, 3, 4 and 5 shows that during a period of one years a total number of 1998 mosquitoes were examined. Percentage density of different genera was found as-*Anopheles*-64.71%; *Aedes*-19.61%; *Culex*-11.61% and *Mansonia*-4.05%. There are four genera found in Jalna urban at all the four sampling sites chosen. The present work states that the *Anopheles* mosquitoes were most abundant in number and their density that is, 64.71% followed by *Culex* i. e. 19.61%, *Aedes* 11.61% and *Mansonia* was lowest that is, 4.05%. The seasonal pattern of prevalence suggests that the maximum was during Jun Sept, followed by Oct-Jan. and lowest in the Feb-May2009. *Anopheles* mosquitoes are most dangerous amongst the four genera and are responsible for spreading of Malaria. Discarded coconut containers are the ideal breeding sites for *Aedes* mosquitoes which are dangerous because they are vectors for chikungunya and dengue fever. *Culex* mosquitoes are vectors for viral arthritis and bancroftian filariasis. *Mansonia* mosquitos are vectors for Malayan filariasis. There is acute need of action to reduce the breeding sites of mosquitoes and public awareness regarding mosquitoes and the diseases caused by them.

Table 1. Site wise collection of no. of mosquitoes in year 2008-09

Sr no	Name of sampling sites	No. of mosquitoes collected		
		June 08 to Sept.08	Oct08 to Jan 09	Feb.09 to May 09
1	Chaman area	187	148	72
2	Ram mandir area	212	135	82
3	Bus stand area	277	140	113
4	Aurangabad road area	196	118	42
5	Mantha road area	161	57	39
	Total no. of mosquitoes collected	1033	598	348

Table 2. Genus wise distribution of mosquitoes in all sampling sites during June-September 2008 (1033 mosquitoes)

Sr. no.	Name of sampling site	Genera of Mosquitoes				Total
		<i>Anopheles</i> (no. of mosquitoes collected)	<i>Culex</i> (no. of mosquitoes collected)	<i>Aedes</i> (no. of mosquitoes collected)	<i>Mansonia</i> (no. of mosquitoes collected)	
1	Chaman area	122	43	18	4	187
2	Ram mandir area	160	33	12	7	212
3	Bus stand area	190	42	33	12	277
4	Aurangabad road area	146	28	30	12	196
5	Mantha road area	110	32	16	3	161
	Total	728	178	109	38	1033

Table 3. Genus wise distribution of mosquitoes in all sampling sites during October 2008 to January 2009 (598 mosquitoes)

Sr. no.	Name of sampling site	Genera of Mosquitoes				Total
		<i>Anopheles</i> (no. of mosquitoes collected)	<i>Culex</i> (no. of mosquitoes collected)	<i>Aedes</i> (no. of mosquitoes collected)	<i>Mansonia</i> (no. of mosquitoes collected)	
1	Chaman area	94	35	15	4	148
2	Ram mandir area	88	28	12	7	135
3	Bus stand area	90	22	19	09	140
4	Aurangabad road area	72	18	20	08	118
5	Mantha road area	28	16	9	3	57
	Total	372	119	75	31	598

Table 4. Genus wise distribution of mosquitoes in all sampling sites during Feb. 09 to May 09 (348 mosquitoes)

Sr. no.	Name of sampling site	Genera of Mosquitoes				Total
		<i>Anopheles</i> (no. of mosquitoes collected)	<i>Culex</i> (no. of mosquitoes collected)	<i>Aedes</i> (no. of mosquitoes collected)	<i>Mansonia</i> (no. of mosquitoes collected)	
1	Chaman area	39	18	13	2	72
2	Ram mandir area	42	29	10	1	82
3	Bus stand area	67	30	12	4	113
4	Aurangabad road area	24	9	7	2	42
5	Mantha road area	21	9	6	3	39
	Total	193	95	48	12	348

Table 5. Percentage density of genera of *Anopheles*, *Culex*, *Aedes* and *Mansonia* in the Jalna urban during study years (2008- 2009)

Sr. no.		Genera of Mosquitoes				Total
		<i>Anopheles</i> (no. of mosquitoes collected)	<i>Culex</i> (no. of mosquitoes collected)	<i>Aedes</i> (no. of mosquitoes collected)	<i>Mansonia</i> (no. of mosquitoes collected)	
1	Total no. of Mosquitoes collected	1293	392	232	81	1998
2	Percentage density	64.71%	19.61%	11.61%	4.05%	100%

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