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A review on the bionomics of *Culex* mosquito

Asha Ram Meena* & Manju Sakhuniya
Department of Zoology, University College of Science, MLSU, Udaipur, Rajasthan, India

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Abstract- The *Culex* southern house mosquito has been relatively well surveyed in lately years its role in the infection of mainly human disease such as lymphatic *filariasis*, saint Louis encephalitis virus and western equine encephalitis virus. The prevalence of the mosquito species is affected, among other factors by the physical environment for breeding, seasonal prevalence, swarming and resting each for which can be changed by human activities and convert the disease infection dynamics. This review briefly summarizes the breeding, seasonal prevalence, resting and biting behavior of *Culex* mosquitoes.

Key words: *Culex*, infection, encephalitis, behavior, mosquito, environment

INTRODUCTION

Mosquito biology as well as ecological components can play an important time in deciding the vector competence[1] with different studies revealing irregularities between mosquito body size (*i.e.,* pointer of larval nourishment) and vector capability[2-4]. The sex proportion of mosquitoes is generally equivalent among male and females in natural environment[5]. *Culex pipiens senus stricto* a significant vector of Japanese encephalitis sero-group arboviruses to their normal hosts, which birds[6] and in the coincidental extension transmission from birds to people home grown well evolved creatures[7,8]. This sero group incorporates west Nile virus (WNV) and Usutu virus for which human cases have been accounted for in the European land mass[9,10] once in the host living space, a more explicit reaction to have smells can happen. Near a host, visual and warm prompts likewise might be utilized in the last strides of host area[11]. Recognition of CO_2, the first known mosquito attractant[12-14], enacts have looking for females of numerous mosquito species, furthermore, inspires upwind flight[15]. Now a days, mosquito borne diseases are most public health issues in different areas of the world[16,17]. There are more than 4500 mosquito species conveyed all though the world, having a place with 34 genera in any case, the majority of these species belong to genus *Aedes*, *Anopheles* and *Culex*[18]. In order to prevent *Culex* borne diseases more successfully, it is fundamental to explore the impact of various factors and their connections (*e.g.,* season, breeding sites, the socio- cultural acts of individuals etc.). Females mosquitoes generally breed in different sorts of water containers (e.g. water storage containers, animal feeding pans, trash containers, coconut shells and used tires). Generally these containers can be isolated into four gatherings (indoor/outdoor, natural/ artificial, dark/light and with/ without lids).[19-22]

*Corresponding author :
Phone : 6375778159
E-mail : meena05ar@gmail.com

FEEDING BEHAVIOUR

The level of synanthropy additionally shifts between structures. Molestus structure is more limited to territories with human impact, while the *pipiens* structure has a more prominent natural pliancy.[23] In northern mild scopes molestus populations are bound to underground natural surroundings, though the *pipiens* structure involves over the ground environments.[23-25] In southern Europe and in the Mediterranean district, populaces of the two structures happen sympatrically in over the ground territories.[26,27] The expansion of *Culex pipiens* bites on warm blooded creatures, including peoples, towards the finish of summer in the USA, has been credited to a pinnacle of by birds in over the ground the natural surroundings in this period.[28] None the less, a decrease of birds populations in area toward the finish of the late spring (explicitly the American robin, *Turdus misratorius* (1766) may likewise potentiate a shift of the taking care of conduct in *Culex pipiens*.[29] *Culex* females generally accept sugar meal and mate prior to initiating host seeking behavior, because mainly all females found at dry ice baited traps are inseminated and open find sucrose.[30,31]

MATING BEHAVIOUR

The role of mating in autogeneous egg development is imperative.[32] In autogenous mosquitoes, substances from the male accessory gland have been displayed to direct the expression of autogenic.[33,34] Substance from the male accessory organ have likewise been displayed to influence a wide-scope of physiological reactions in female mosquitoes including host-seeking oviposition, either autogenous or anautogenous egg improvement.[35] In our investigation we like wise found that males only mated with a solitary female not all like current theories on mating by Culicidae in that individual male may mate with various females (Clements, 1999)[12]. Fruitful mating in numerous species has been shown not really settled by a scope of factors.[36] In their investigation of *Anopheles freeborni* (Aitken) had exhibited a greater size of male mosquito can mate modest male[37] showed that older and bigger *male Aedes aegypti* (L.) created and stored more sperm than more youthful younger male. High mosquito densities also make environmental conditions that add to fruitful multiple mating.[38]

SWARMING BEHAVIOUR

Creepy crawlies, conglomeration for mating at a specific site is mostly seen in species that mate in battle[39-43] Males assemble in swarms close to female rise taking care of, oviposition or resting destinations[44-46] or specific areas with no connection with assets, where female come to pick a male.[47,48] Amassing males generally accumulate in consistent battle over a miles stone called "swarm marker" that can be any visual differentia shading or shape in the climate.[49] These markers have been portrayed to be basic for swarm development and to affect swarm qualities since the quantity of guys and the multitude shape appear to be identified with the marker size.[50] Swarm' is an unluckily vague term used to show different types of insect gathering which do not necessarily have much in natural. This exploration was of the station keeping type of swarm found mainly among nematoceran dipteral and to a less extent among Lepidoptera, Ephemeroptera, hymenoptera and other orders.[49,51]

BITING BEHAVIOUR

During the time spent fast urbanization and spontaneous development of urban communities has brought about the creation of mosquito environment upgrading the rearing an assortment of sickness vectors and thusly infection transmission.[52] Utilizing drains, seepage channels and different well springs of naturally rich, stale water for oviposition and larval advancement.[53,54] *Culex pipiens* mosquitoes are generally bountiful metropolitan condition.[55,56] Their benefiting from birds makes then ideal vectors for avian microorganisms like WNV and SLEV.[57-59] Their benefiting from people and different warm blooded animals brings about their filling in as a significant extension vectors.[60-62] The favored biting area in peoples is the foot area.[63] During the time spent quick urbanization and along with its clinical outcomes *Culex quinquefasciatus* is additionally liable for night time nervousness and unfavorably susceptible reaction in view of its aggravation gnawing conduct for the duration of the evening, inside and outside. During the day time, they remain for the most part dormant and are generally very still in dim spots like corners of rooms and sanctuaries. The irritation gnawing ordinarily influences the greater part of individuals instead of the transmission infections. Now and again, gnawing of mosquitoes turn out to be a greater amount of aggravation and deplorable. Many new reproducing territories are made by human exercises which become appropriate for the rearing of different mosquitoes. For the successful control of mosquitoes, it is a lot of crucial for think about their conduct.[64,65]

RESTING BEHAVIOUR

Adult mosquitoes are most of the time resting in places of their preference than being in flight. Most species rest totally out doors in natural resting places and only a few species like artificial shelter. The only few mosquito species found to rest indoors are known to be the vectors of malaria, filariasis and arboviruses.[66] Outdoor resting mosquitoes tend to be dispersed in available habitats and a number of methods have been used to collect them.[67-69]

SEASONAL BEHAVIOUR

In this investigation we center on *Culex pipiens* which has been broadly involved as a significant vector of WNV[70-72] also is normal across a large part of the UK, inciting worries that illness episodes might happen if the sickness were to be presented[73]. WNV is the hugest reason for mosquito-borne disease in calm areas counting Europe and North America[74] and transmission of the infection is profoundly occasional, with human cases commonly cresting in pre-fall and eating harvesting time[75]. This irregularity in calm environment is accepted to stem from the way that low temperatures over cold weather months make conditions unsatisfactory for improvement and endurance of juvenile mosquitoes, causing a discontinuance of rearing action as grown-ups enter a diapausing state[76].

CONCLUSION

Culex mosquito major vectors of Japanese encephalitis virus (JE). *Culex* is a house mosquito which is showed in most part of the world. In mostly, it is most rich in human contract in tropical and temperate countries. It is mainly related with the human dwelling and also answerable for infection of different dreadful disease to human being.

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