ABSTRACT and KEYWORDS

Studies on the Mosquito Fauna of Central Kerala with special reference to Aedes albopictus

Mosquitoes are one of the most important Arthropod vectors that affect the well being of humans and domestic animals world-wide. They are undeniably more detrimental to human health than any other group of Arthropod vectors. Mosquito vectors transmit parasites responsible for diseases such as Malaria, Dengue fever, Chikungunya, Filariasis, Yellow fever, and various forms of Encephalitis such as Japanese Encephalitis, Eastern Equine Encephalitis, St Louis Encephalitis, Western Equine Encephalitis and Venezuelan Equine Encephalitis.

During the 19th and early part of 20th century these diseases caused an appallingly terrific human mortality, dealt a severe blow to the economic growth and overall developments of many countries of the world. However, most of these important mosquito-borne public health problems were effectively tackled and brought under control by the middle of the 20th century. The discovery and effective use of residual insecticides contributed substantially to this signal success. Unfortunately, the benefits of mosquito-borne disease control programme were short-lived. A number of mosquito-borne diseases began to re-emerge in the different parts of the world, including India in the 1970s. The resurgence has astonishingly intensified in the past 20 to 30 years. The recent emergence and resurgence of various mosquito-borne diseases have been a serious global health problem and have become more of a growing concern in India over the past few decades.
Though Kerala’s health indicators are often said to be at par with those of developed countries, Kerala status of being the best health care system in India has fallen into disgrace in the past two decades due to the emergence/re-emergence of various mosquito-borne diseases such as Dengue Fever, Chikungunya, Japanese Encephalitis and Malaria. Among the various reasons, one chief cause of the outbreak of diseases was the complete absence of vector monitoring and subsequent lapses in the mosquito control measures.

The emergence and resurgence of various mosquito-borne diseases in Kerala necessitated a detailed study of mosquito fauna. It may also be noted that many species, although not carriers of any disease, can nevertheless be troublesome because of the serious biting nuisance they cause. Ironically, the diversity, distribution, ecology and population dynamics of many species of mosquitoes have not yet been adequately explored. Therefore, it is highly relevant and appropriate to investigate the mosquito fauna, especially of Central Kerala which is considered as the epicentre of various mosquito-borne diseases. The present work has immense scope in the current scenario of the state. Sound knowledge and understanding of mosquito fauna is the foundation on which we can hope to control them and subsequently the mosquito-borne diseases.

The first general objective of present study was to understand the diversity, composition, distribution and breeding ecology of the mosquito fauna of central Kerala. Study was conducted by standard methods. Study area had a rich and diversified fauna of mosquitoes consisting of 38 species belonging to 10 genera. Many of these species were vectors of various diseases. Distribution varied with season, altitude and space. Various breeding sites were recorded during the study.
Second major objective were to study the breeding ecology and adult population dynamics of *Aedes albopictus* in rubber plantation belt of central Kerala. Study was conducted by standard methods. Larval indices like Container Index, House Index and Breatue Index were varied with season. *Aedes albopictus* showed seasonal population fluctuation and meteorological facts such as rainfall found to influence population dynamics. Larval indices and adult densities of *Aedes albopictus* have been recorded above the critical levels and it implies their potential for future outbreaks of arboviral diseases.

The third objective was to understand Knowledge, Attitude and Practice (KAP) of people on *Aedes* mosquito and *Aedes albopictus* - borne diseases. Prevention of disease through better education, knowledge, socioeconomic condition and practice of people is the appropriate way to keep disease away and remain healthy. KAP study measures the Knowledge, Attitude and Practices of a community. Present survey showed that the participants have sufficient knowledge regarding *Aedes* mosquito and *Aedes albopictus* - borne diseases. However, the high level of knowledge was not translated into a good practice. It was found that respondents were more concerned with personal preventive measures mainly focused towards protection from mosquito bites rather than source reduction.

**KEY WORDS-** *Aedes albopictus*, Anopheles, Breatue Index, Breeding Preference Ration, Breeding sites, Chikungunya, Culex, Container index, Dengue Fever, Fecundity, House Index, Idukki, Kottayam, Larval Indices, Man Hour Density, Mansonia, Mosquito diversity, Mosquito fauna, Species, Oviposition, Vectors and Yellow fever, KAP.