



## A View on Medical Entomology and its importance in the medical fields

### Introduction

Medical Entomology (ME) is the study of insects. It is also termed as “Entomology”. Moreover, its details with insects and arthropods and its impact on health of human beings. Its discipline is major divisions namely medical entomology or public health entomology. It includes scientific research on the behaviour, ecology, and epidemiology of arthropod disease vectors.

Vector-borne diseases (VBD) are an account for a significant proportion of the global burden of infectious disease. Nearly 50% of the world’s population is having with at least one type of vector-borne pathogen. [1] Many vector-borne diseases were successfully controlled, and new pathogens have also emerged in the mid of 20<sup>th</sup> century. [2] As per World Health Organization (WHO) report, recent years VBDs have developed as very severe PHP in many countries like India. [3]

### Insects, Arthropods, and its infections:

In this, public health entomology has seen severely from the year 2005 because of Cimex lectularius. Human health affects by many insects and other arthropods. Insects borne diseases like Dengue fever, Malaria, Leishmaniasis, Bubonic Plague, Typhus, Yellow fever and Alkhurma virus, Lyme disease, Chikungunya, and other exotic mosquito borne diseases. Aedes albopictus as shown in **Figure – 1** is a known vector of Chikungunya virus, Dengue virus and dirofilariasis.

### Importance of medical entomology in medical fields:

Entomology is the major subject to opt for the students related to the areas of medicine, veterinary science and public health. WHO is

also promoted a postgraduate course in medical entomology and vector control as regional consultation. [4]




**Picture – 1 Full view of Aedes albopictus**

So many other courses are available all over the World. Medical entomology and vector control course is very important and essential one in developed and developing countries. Those who are taking the subject medical entomology as main and working related to that are called “Medical Entomologists”.

### Main role of the National Institute of Malaria Research [5] and National Institute of Virology in India: [6]

This institute is conducting many courses in the field of vector control, microscopy, entomology, quality assurance of rapid diagnostic tests, surveillance, insecticide bioassay, bioenvironmental control, field applications of biocides, indoor residual spraying, preparation of blood smears for diagnosis, malaria in pregnancy,

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anti-malaria operations, and as well as new tools like remote sensing and geographical information systems in the prevention and control of vector-borne diseases. It also conducts short-term training course on Malaria research to the national and outside foreign participants from all levels.

National Institute of Virology (NIV), Pune, a premier virology institute of India. It is also conducting training and projects in Medical Entomology (ME). It has produced many trained entomologists, PhD students, short-term trainees, and experts for the past 67 years. It has contributed immensely to India's efforts to combat vector-borne diseases and its major achievements include from recognition to vaccine development of vector-borne diseases and infections. Several new species of ticks, lice, fleas, sand flies and mosquitoes, together with a new species of rodent, have been described by this institute's scientists.

### ICMR-Vector Control Research Centre

ICMR-Vector Control Research Centre, Pondicherry is a permanent institute of ICMR established in the year 1975 by Government of India. It is a collaborating centre for research and training in Lymphatic Filariasis (LF) and Integrated Vector Management (IVM) from the year 1985. VCRC is also conducting post graduate course like MSc (Public Health Entomology), Ph.D in PHE, training and projects in Medical Public Health Entomology (MPHE). It has produced many trained entomologists, PhD students, short-term trainees, and experts for the past 57 years. It is the one of the best training centre in India for the vector-borne and health training courses. Significant contribution in vector control by the eminent scientists of VCRC.

ICMR-VCRC field station at Madurai, Tamilnadu, India. It was established on the year 1985 and it is significantly contributed in the way of understanding mosquitoes' biodiversity in the Western, Eastern Ghats, Mangrove Forest, Assam areas, and Andaman & Nicobar Islands. It had described 5 new mosquito species. This centre is also involved in many research and also ongoing research and has a well-equipped infrastructure labs.

### Conclusion

Medical entomology subject is very important in medical field and research. All countries are encouraged this subject in their medical education curriculum. Then only the keen knowledge is to get by the young physicians, important in their research areas and to serve in the rural areas by them successfully. Then only, health care professionals have to control the vector-borne diseases in a successful manner.

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