Seminar Report: Mosquito Transmitted Diseases of Man in Eastern India
Vidyanagar College, West Bengal, India

Department Of Zoology, in collaboration with IQAC Presents

One Day State Level Seminar

Topic- Mosquito Transmitted Diseases of Man in Eastern India

Speaker- Prof. Ananda Mukhopadhyay

Venue- Vidyanagar College Seminar Room

Date- 28th September, 2022, Time- 1 P.M.

Number of Students participants- 93

Number of Faculty- 23

MOSQUITO TRANSMITTED DISEASES OF MAN IN EASTERN INDIA

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Mosquito borne diseases can be caused by viruses, protozoans and round worms. Mosquitoes that pose major threat to human health belong to the subfamilies Culicinae and Anophelinae. While the former includes the species of *Culex* and *Aedes*, the latter includes both distinct and sibling species of *Anopheles*. Only females having pillose (scanty hair) antennae and blood-sucking mouth parts are hematophagous. Female mosquitoes get attracted to man due to: (a) Silhouette & bipedality (b)carbondioxide produced during breathing (c) convection current produced due to warm body (d) color and texture of skin & clothing (e) body odour (f) some more factors.

Only anophalines transmit sporozoan form of *Plasmodium* parasite to cause malaria in man. About 08 species of *Anopheles* are the major vectors. In eastern India , *A.culicifacies, A. stephensi, A. fuviatilis, A. minimus, A.dirus, A. annularis,* and to a lesser extent *A. sundaicus & A. philippiensis* . Species of culex have been incriminated for carrying atleast two major diseases. *Cx. vishnui* and *Cx. pseudovishnui* are the chief vectors of Japanese-B Enchephalitis (JE). *Culex pipiens fatigans* and *Cx. quinquefasciatus* are potential vectors for transmission of the round worm , *Wuchereria bancrofti* causing filariasis /elephantiasis in man. No less important are the day biting tiger mosquito, *Aedes*. In India Ae. aegypti ad Ae. albopictus are the principal vectors of Dengue flavivirus causing break-bone disease, and more recently transmitting alpha-virus causing Chikungunya fever.

Critical density of infection tells us about the chances of a disease becoming epidemic due to status of a vector in a region. The CDI value depends on the number (density) of a vector (mosquito), number of mosquitoes, number of bites/day, longevity & disease carrying capacity of the mosquito.

Mosquito control depends on chemicals, such as DDT, Malathion, and fogging of pyrethroid pesticides. Non-conventional management includes removal of accumulated water, wherever possible, applying oil, and microbial pesticide (BT israelensis & B.sphaericus) on water surface, releasing larvaevorous fishes (guppy, tilapia, gambusia, fundulus, & apolocheilus) in wells, ponds, and water bodies, use of permethrin or carbosulphan impregnated bed nets, use of mosquito repellents (Citronella, lemon oils, diethyl toluamide and eucalyptus essence) over body, use of fumigants (carbon-di-sulphide,& pyrethroids (Good night, all out), attract male mosquito to sound source simulating one of females & electrocuting them, mass trapping by attracting to a CO_2 in confined places.

Vector control measures that are environmentally friendly need to be implemented to a large extent with success. For suitable management of mosquito vectors active participation, cooperation, and awareness of local people at community level along with a sincere all out efforts of the government under vector eradication program are necessary.

Figure A- From L-R, Prof. Sahidur Rahaman Laskar. Dr. Surja Prakash Agarwal, Prof. Ananda Mukhopadhyay, Prof. Subrata Sar, Dr. Arunima Roy Chowdhury, Dr. Sudipta Patra

Figure B- Seminar Banner