

USE OF BOTANICALS AND ENTOMOPATHOGENIC FUNGI FOR THE CONTROL OF MALARIAL, FILARIAL AND DENGUE VECTORS

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Mosquito borne diseases form a major component of communicable diseases (Malaria, dengue and Japanese encephalitis) in India and other Asian countries. Therefore the effect of vector borne diseases is the major threat to human survival on the earth. Several strategies have been adopted to control the various diseases transmitted by mosquitoes. Synthetic insecticides have been effectively used during the past several decades to control these dipteran pests and reduce vector-borne diseases. But the use of chemical insecticides has become problematic because of a multiplicity of factors including physiological resistance in the vectors, environmental pollution resulting in bioamplification of food chain contamination and harmful effects on beneficial insects. However, use of biological and microbial biopesticides effective to control the target species and also environmentally biodegradable and being relatively safer to human being and non target organisms.

An investigation has been made to study on the bioefficacy of *Melia azadirach* and the fungal Biopesticides, the *Beauveria bassiana* on three mosquito species such as *Anopheles stephensi*, *Aedes aegypti* and *Culex quinquefasciatus*. The treatment of methanolic extract of *Melia azadirachta* extract had significant effect on the larval and pupal and adult mortality of three different mosquito vectors. Lethal concentration has been worked out on the effect of extract on different larval and pupal of three vector species. Similarly toxicity effects on fungal pathogen have also worked out for the three mosquitoes species. The combined effect of plant extract and fungal pathogen made a greater significant reduction of larva and pupal mosquito vectors. Combined extract also affects life history characters of three mosquitoes. The biological effect of Plant extract and fungal concentration may be action of active compound in the plant (toosentonin) *Melia azadirach* and fungal toxins act together and brought about control effect on mosquito vector. Field application of *M.azadirach* and *B.bassiana* at the breeding sites of three mosquito vectors. Plant extracts and fungal pathogen had steadily affected to population during of mosquito vector. Field trials have been conducted at local area of in and around Bharathiar University and also we had extended our mosquito spray operation at Tsunami affected area of Tamil Nadu and Pondicherry states. Hence, this kind of biological pesticides has been used for the development for the ecofriendly management of mosquito vector in the tropics.

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