Dengue epidemic and BTI – Hidden facts

Department of Entomology, Medical Research Institute (MRI) carries out entomological investigations to provide technical guidance to the Ministry of health for dengue vector control.

The entomological investigations are carried out to

1. Determine the major breeding sites of the dengue vector mosquitoes
2. Determine the percentage of different breeding sites in each area
3. To forecast the high larval density
4. To monitor the impact of control measures
5. To identify the vector mosquito species
6. To plan anti dengue control campaigns before the epidemics
7. To determine the appropriate control measures (source reduction, biological and chemical)

Department of entomology carry out dengue vector surveys in 15 high risk MOH areas in the western province covering 3000 premises per month. These premises include dwellings, schools, hospitals, institutions, bus depots, commercial establishments and also airports and sea port. During the surveys, public is educated on the breeding sites and necessary advice is given for the control of breeding sites. The information are sent to the MOOH of the relavent areas, Regional Epidemiologist, Provincial Director of Health Services, Dengue coordination unit and relevant authorities of the airports and sea port for necessary control measures.

Department of Entomology is the only place for issuing biological efficacy reports to the Registrar of pesticides, Peradeniya, on the effectiveness of insecticides, larvicides and repellents (local or imported) against dengue vectors and other mosquito species.

Achievements:

Department of Entomology , MRI in collaboration with Industrial Technology Institute (ITI) , carried out a research project funded by National Science Foundation and discovered a local soil bacteria (Bacillus thuringiensis isralensis) for the control of dengue mosquito larvae. The entomology team at MRI brought most of the soil samples from various parts of the country and the initial training on the isolation of bacteria from soil samples, culturing and identification of the species was provided by the senior research officer at the bacteriology department, MRI. The formulations of the bacteria cultures were tested against the dengue vector mosquito larvae at the Department of Entomology at MRI. The field trials were also supported by the entomology team at MRI. The mammalian toxicity of the local Bti product was tested by the Veterinary surgeon at MRI. The research team obtained Sri Lankan patent for the discovery of local Bti for dengue vector control.

Present Research: Presently, a mosquito repellent against dengue vector mosquitoes is being developed using local plant species.