

## **PROBIOTICS AS A NOVEL BIOLOGICAL CONTROL STRATEGY FOR MOSQUITO VECTOR SPECIES**

**Ivan Dario Vélez<sup>1</sup>, Jose Mojica<sup>1</sup>, Raul Leonardo Rocha<sup>1</sup>, Margarita Correa<sup>2</sup>, Carolina Torres G<sup>1</sup>.**

<sup>1</sup>Program for the Study and Control of Tropical Diseases, PECET. Faculty of Medicine. Universidad de Antioquia, Medellín, Colombia. PECET is an academic and research organization worldwide recognized by WHO and with co-operation with Centre for Research in Medical Entomology (ICMR), Madurai, India.

<sup>2</sup> Researcher of Auroville International Township, Tamil Nadu, India, and Researcher Associated to PECET – Antioquia University, Medellín, Colombia.

Vector-borne tropical diseases are major public health issues in various geographic regions of the world. Their control rely on a few intervention measures in which mosquito vector control represents one of the main operational components of current public health policies. Vector control procedures have comprised for long chemical insecticides applications in very different ways and the world is currently in a clear need for much diverse control alternatives. International health agencies have called for integrated vector management actions that must include environmentally safe products. The objective of this initiative began as the evaluation of Probiotic cultures as larvicide agents for mosquito species in geographic areas of disease transmission. Primary evaluations have been conducted in laboratory for *Culex quinquefasciatus*, *Anopheles albimanus* and *Aedes aegypti* larvae in Colombia. Evaluations comprised bioassays that followed WHO protocols. Different concentrations of the Probiotic culture have been employed. Bioassays group 5-10 replicates of each species. Mortality records are as follows, 80% *Cx. Quinquefasciatus*, 70% *An. albimanus*, and 100% *Ae. aegypti* with a 4.5% of the Probiotics culture. Evaluations are recorded after a period of 120 hours. Additionally field tests spraying of the product in rural villages of India showed to be effective for malaria and Chikungunya vector control program. *Aedes aegypti* larvae has been controlled in Roatan Island – Honduras by 99.9%. A new biological control alternative is presented with significant larvicide effect for important mosquito vector species that occur in tropical and subtropical areas of public health concerns.