Toxic Effect of Aqueous Leaf Extract of Milky Mangrove (*Excoecaria agallocha* L.) on Larvae of Mosquito (*Aedes aegypti*) and Brackish Fish (*Etroplus suratensis*)

E.M.U.I. Ekanayake* and I.R. Palihakkara
Department of Crop Science, Faculty of Agriculture, University of Ruhuna, Sri Lanka
*emuindeewari@gmail.com

Climate changes including global warming make the world a safer breeding place for mosquitoes. Application of larvicide is a successful precaution method to reduce mosquitoes before emerging into adults. Identifying phytochemical properties is a cheap and environmentally safe technique. In this view, the study attempts to find out the toxic effect of aqueous leaf extract of *E. agallocha* on brackish fish (*E. suratensis)* and mosquito larvae (*Aedes aegypti*) under laboratory conditions. Mosquito larvae and brackish fish from the lagoon were reared separately at 25-27°C and 75-85% relative humidity. Five replicates with ten mosquito larvae and five replicates with six brackish fish in each were maintained. Aqueous leaf extract of *E. agallocha* at four concentrations 0.0625 g/ml, 0.125 g/ml, 0.25 g/ml, and 0.5 g/ml with lagoon water (control) were tested against fourth instar larvae and brackish fish separately. After 24 hrs of treatments, the number of dead larvae and fish were counted. All concentrations of the leaf extracts applied were able to cause significant ($p<0.0001$) mortality on the larva of mosquito and brackish fish. The highest larval mortality (80%) and brackish fish mortality (100%) were recorded from 0.5 g/ml while the least (48%) for larvae and (16.67%) for fish mortality were obtained by 0.0625 g/ml. Concentrations less than 0.0625 g/ml of leaf extracts were suitable for selective fish harvest by making them daze and mortality increases with the increase of concentration of leaf extract. *Excoecaria agallocha* leaf extract founds to be an effective replacement for synthetic larvicides while it is toxic for brackish fish.

Keyword: Bioassay, Brackish fish, Milky mangrove, Mosquito larvae