

## Larvivorous Potential of Four Fish Species Against Dengue Vectors in The Kandy District of Sri Lanka

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There is a growing concern on the effects of insecticides that are used for the control of mosquito vectors of human diseases. Introducing a self propagating predator into the vector breeding habitats may present continual biological control of vector population. In order to control dengue vectors, namely, *Aedes aegypti* (Linnaeus) and *Aedes albopictus* (Skuse) (Diptera: Culicidae), larval control is one of the major strategies. The objective of this study was to evaluate the larvivorous potential of fish species against dengue vectors. Four fish species, namely, *Poecilia reticulata* (guppy), *Aplocheilus dayi* (Udahandaya), *Oreochromis niloticus* (Tilapia) and *Puntius bimaculatus* were collected from natural breeding habitats. They were placed in fish stock cement tanks at the Regional Office of the Anti Malaria Campaign in Kandy till they were used for the study that was conducted from January – June 2015. In order to determine the larvivorous potential of the fish species, five fish of each species were placed in separate enamel trays containing de-chlorinated water and allowed to acclimatize for half an hour. Afterwards, a batch of 25 *Ae. aegypti* larvae was introduced to each tray and counted the number of larvae remaining after 5, 10, 30 minutes, 1 and 24 hours. When all 25 larvae are consumed, another batch of 25 larvae was introduced to those trays and this was continued till the study was completed. At the end of study period (24 hours), the number of larvae consumed per fish for each fish species was determined. This study was carried out in the laboratory with 6 replicates. The experiment was repeated for *Ae. albopictus*. Overall, *Oreochromis niloticus*, *Poecilia reticulata*, *Aplocheilus dayi* and *Puntius bimaculatus* consumed 97.6, 66.9, 49.3 and 47.5 *Ae. aegypti* and 98.4, 62.3, 51.2 and 45.4 *Ae. albopictus* larvae respectively. All four fish species showed larvivorous activity and *Oreochromis niloticus* showed the highest larvivorous potential followed by *Poecilia reticulata*. Since *Ae. aegypti* and *Ae. albopictus* breed in water storage containers such as cement tanks, barrels and ornamental ponds, the fish species that showed high larvivorous potential may be considered for dengue vector larval control in such containers. In order to achieve good community participation for the use of larvivorous fish for dengue vector control, effective health education is of utmost importance.

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