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Studies on the efficacy of *Toxorhynchites* larvae and three larvivorous fish for the control of *Aedes* larval populations in water storage tanks in the Matale district

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A study was carried out to compare the feeding efficacy of *Tx*. larvae (L3 & L4) & 3 larvivorous fish species on *Aedes* larvae from May 2007 to February 2008 in Kaudupelella in the Walliwela G.S division , Matale. The frequent and prolonged interruptions of the water supply to the area, had led people to store water in suitable containers. Ground level water storage tanks (20%-80%) and water storing barrels (8.33% -54.55%) formed the majority of *Aedes* positive outdoor containers. *Ae. albopictus, Ae. macdougali* and *Ae. vittatus* breeding was recorded in water storage tanks. In outdoor water storage tanks *Ae. macdougali* was dominant (61.61%) followed by *Ae. albopictus* (37.79%) and *Ae vittatus* (0.5%).

Toxorhynchites splendens and *Tx.minimus* were recorded from the area. Feeding efficacy of *Toxorhynchites* larvae, *Poecilia reticulata(Guppy) , Puntius bimaculats* (Ipilikadaya) and *Rasbora caveri* (Dandiya) were determined in the laboratory. *Aedes* larvae consumption rate(time to devour 10 *Ae. albopictus L3* larvae in a vessel of 78. 57 cm^2 of surface area) of *Toxorhynchite*s larvae was significantly lower, with a mean time of 330 minutes ,while *P.reticulata* , *P.bimaculats* and *R. caveri* needed 16.66, 27.32 and 24 minutes respectively . However, there was no significant difference (P= 0.062) between the consumption rate of the 3 fish species.

A field study was carried out in 34 selected houses to determine feeding efficacy *of Toxorhynchites* larvae*, P. reticulata , P. bimaculats and R. caveri* on *Aedes* larval populations in outdoor cement tanks by noting the percentage reduction of Aedes larvae per 100 cm^2 surface area of tanks after a week. *Toxorhynchites* larvae caused a 20% -83.33% reduction after a week with no clear correlation between the number of *Toxorhynchites* larvae added and the percentage reduction*. A* complete reduction (100%) was achieved with *P. bimaculatus* and *R. caveri* with 1-3 fish per tank. *P. reticulata* also gave 100% reduction except on one occasion (90%) with only 2 fish per tank. Possibility of *Tx*. larvae being lost during removal of water by the householders was higher than losing the fish species. The three fish species used were highly efficient than *Tx*. larvae in *Aedes* consumption in outdoor cement tanks. Thus *Puntius bimaculatus, R. caveri* and *P. reticulata* may be used to control *Aedes* larvae in water storing cement tanks successfully.

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