

**A STUDY ON THE FEASIBILITY OF GROWING THREE  
ORNAMENTAL FISH SPECIES IN ABANDONED CORAL PITS AND  
IRRIGATION RESERVOIRS**

**A.D.W.R.RAJAPAKSHE ( B.Sc.Sp.Hons.)  
Department of Zoology  
University of Kelaniya  
Kelaniya  
Sri Lanka.**

Dissertation submitted as a partial Requirement for the M.Sc. degree in Aquaculture  
and Fisheries Management of The University of Kelaniya, Sri Lanka.

**March, 2001**

## ABSTRACT

Feasibility of growing guppy (*Poecilia reticulata*), platy (*Xiphophorus maculatus*) and swordtail (*Xiphophorus helleri*) in abandoned coral pits at Hikkaduwa and in Udukiriwila reservoir under net cage (2m x 1m x 1m) culture was studied by growth and survival of each species. Fry/fingerlings of the three species were stocked in separate cages (375 fish/cage) at both sites and three production cycles were studied employing a commercially available feed a rate of 5% body weight. Growth was measured in terms of increase of total length and specific growth rate (SGR). Survival of each species at each culture site over the three production cycles was recorded.

Dissolved oxygen, pH, temperature, total ammonia, total nitrite, total alkalinity and total hardness of water prevailed at coral pits and the reservoir were acceptable for fish culture. There were no significant differences between mean percentage survival of guppy & platy and platy & swordtail ( $p > 0.05$ ). But survival recorded for swordtail ( $77.54\% \pm 6.93$ ) was significantly higher ( $p < 0.05$ ) than that of guppy ( $44.65\% \pm 3.28$ ) cultured in net cages in coral pits. In the reservoir, mean percentage survival observed for guppy & platy and platy & swordtail were not significantly different from each other ( $p > 0.05$ ). But survival recorded for swordtail ( $61.062 \pm 1.766$ ) was significantly higher ( $p < 0.05$ ) than that of guppy ( $50.13 \pm 3.075$ ) cultured in the reservoir.

All three species (guppy, platy and swordtail) grew upto their marketable size around 60 days at both sites. There were no significant differences between specific growth rate of platy & swordtail ( $p > 0.05$ ) recorded for coral pits. But there were significant differences between specific growth rate of guppy & platy and platy & swordtail ( $P < 0.05$ ). For the reservoir there were significant difference between SGR of guppy & swordtail and platy & swordtail ( $p < 0.05$ ). But there were no significant differences between specific growth rate of guppy & platy and platy & swordtail ( $P < 0.05$ ). However, specific growth rates estimated for guppy, platy and swordtail were significantly higher at Udukiriwila reservoir ( $3.278 \pm 0.16, 2.926 \pm 0.118$  and  $2.346 \pm 0.136$  respectively) than that of the coral pits ( $2.288 \pm 0.17, 1.471 \pm 0.09$  and  $1.527 \pm 0.16$  respectively).

Even though the survival of all three species employed during the present study gave comparatively low survival, cage culture of any of these species could be recommended in these coral pits after analysing socio economic situation as these coral pits are not contributing for and production presently which are rather acting as breeding grounds for mosquitoes.