

STUDIES ON THE FEASIBILITY OF USING INDIGENOUS FISH AS CONTROL AGENTS FOR AQUATIC MACROPHYTES IN SRILANKA

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Many inland water bodies in Sri Lanka were covered extensively with the aquatic weed *Salvinia* until the recent past. This weed has caused many physical, chemical and biological changes in the aquatic environments including depletion of dissolved oxygen levels, reduction in nutrient levels and depletion of the amount of light penetration thus reducing the primary productivity. In late 1980s, this aquatic weed was biologically controlled in many reservoirs using an exotic weevil *Cyrtobagous salviniae*. However, the control of *Salvinia* has resulted in an unexpected growth of aquatic macrophytes such as *Eichhornea*, *Vallisneria* and *Hydrilla* in these water bodies which has caused problems to irrigation, agriculture and fisheries.

The present study was carried out in five minor reservoirs in Sri Lanka namely Madampe, Mahawewa, Mattegoda, Lunuwila and Boralasgamuwa Reservoirs where *Salvinia* has been biologically controlled by *Cyrtobagous salviniae*. Among the most abundant aquatic macrophytes in these reservoirs were *Eichhornea*, *Hydrilla*, *Trapa*, *Vallisneria* and *Utricularia*.

Quantitative analysis of the stomach contents of five indigenous species, namely *Etroplus maculatus*, *Rasbora daniconius*, *Puntius filamentosus*, *Anabas testudineus* and *Mystus vittatus* carried out over a period of two years indicates that *Etroplus maculatus* is the best macrophytic feeder followed by *Puntius filamentosus* and *Rasbora daniconius* (Table 1)

The larger individuals of these three species are used as food fish and the small ones have a high demand in the aquarium fish trade and are popular export fish. Therefore, these minor reservoirs where aquatic macrophytes are abundant can be utilized to grow these species which will not only increase the inland fish production but also enhance the foreign exchange earnings in the export aquarium fish trade.

Table 1. Relative importance (%) of aquatic macrophytes in the stomach contents of the indigenous fish species in five minor reservoirs in Sri Lanka

	Maha	Matt	Mada	Lunu	Bora
<i>Etroplus maculatus</i>	19.3		45.4	18.0	
<i>Rasbora daniconius</i>	5.5	3.9	13.4	6.2	3.3
<i>Puntius filamentosus</i>	18.1		9.0	15.2	
<i>Anabas testudineus</i>	0.0	0.0	0.0	0.0	
<i>Mystus vittatus</i>		0.0		0.0	0.0

Mada - Madampe reservoir, Maha - Mahawewa reservoir, Matt - Mattegoda reservoir;
 Lunu - Lunuwila reservoir, Bora - Boralasgamuwa reservoir.

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