

SOME ASPECTS OF REPRODUCTIVE BIOLOGY AND CAPTIVE BREEDING OF CEYLON KILLIFISH (*Aplocheilus dayi*) ENDEMIC TO SRI LANKA

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Freshwater fishes in Sri Lanka is a diverse group and one of the major components for its diversity richness allied with high degree of endemism. *Aplocheilus dayi* is one of the nationally threatened endemic fish species in Sri Lanka confined to very limited locations. Despite their economic, conservation and scientific importance to date, there are very limited information available on the extent of its reproductive biology and breeding performances. Hence, a preliminary study was designed to gather the fundamental information on the reproductive biology and captive breeding of *A. dayi*. Morphological characters including body coloration, fin shapes were used for sex determination. Maximum observed total length in *A. dayi* was 60 ± 1 mm and 50 ± 1 mm for males and females respectively. Male is more colourful and presence of red colour stripe in the caudal fin, 3–4 black spots in the abdominal area and pointed fins are some prominent characters. In contrast female is less colourful, having 6–7 horizontal black colour stripes together with black spotted rounded caudal and dorsal fins. Breeding experiment was arranged in glass tanks (L-18” x W-10” x H-10” and water depth = 10cm) using different sex combinations i.e male: female 1:1, 1:2 and 1:3 along with alternative substrates i.e. aquatic plants, Sand and Acrylic yarn mop. It was assumed that the water quality changers were insignificant throughout the experimental period. According to the results highest spawning was recorded in 1 male: 2 female combination with 12–13 eggs/day where the Acrylic yarn mop used as the substrate. However, pair breeding was unsuccessful and egg eating behaviour was also observed in the tanks where 03 females used. During the experimental period different feed types including commercial pelleted feeds and live feeds such as daphnia, mosquito larvae, bread worms, black soldier fly larvae and *Artemia* were used. However, it seems that fish more interested on live feeds especially the mosquito larvae since fish fed with mosquito larvae had the highest egg laying percentage. The eggs were hatched using water incubation technique and the hatching time extended up to 12–14 days claiming the slow metabolism which is a characteristic feature of killifish species.

Keywords: *Aplocheilus dayi*, Reproductive biology, Captive breeding, Endemic fish