Development of Breeding Technology for Endemic Fish, *Belontia signata*

S.O.M.R. Ossen[1], A.R. Mudelige[2] and S.C.Jayamanne[1]

[1]Uva Wellassa University, Sri Lanka
[2]Ornamental Fish Breeding and Training Center, National Aquaculture Development Authority, Rambadagalla, Sri Lanka

Belontia signata is an endemic freshwater fish found in slow flowing, shallow, clear water streams usually habituated with pebble or sand substrate, shaded streams and rivulets of Sri Lanka. The species has a high demand in the international market but the production is low as the breeding and rearing technology of *B. signata* is not well established. The present study aims to develop breeding and rearing technology of *B. signata* in captivity. Differentiation of sex is difficult in *B. signata* but by closely observing the morphological characteristics such as colour of the body and colour of the eyelid sexes were identified with an accuracy of 100%. Males have bright body color and females have dark body color in calm environment and the eyelid of the male is red while it is black in females. Differences in caudal fin characteristics were also observed but the accuracy of using it for sex differentiation is low (55%). The caudal fin of the male bares more filaments than that of females. Trials were conducted to investigate the space and availability of hiding places for breeding *B. signata.* Another experiment was conducted to find out the most suitable feed for the growth of fry using two live food species, microworm and *Artemia* nauplii. It is difficult to get *B. signata* to start breeding but when started they spawn after every 14 days of last spawn. The results revealed that *B. signata* prefers spacious long tanks ($P<0.05$), calm environment ($P<0.05$) and hiding places ($P<0.05$) for their breeding. In average a female produced 81 ± 27 (n=7) eggs and the total length of fry varied between 9.1 cm - 11.8 cm. Duration of development stages were, egg to hatchling 36-48 h, hatchling to post larva stage 3-4 days at temperature range of 25.75-28.76 $^{\circ}$C and pH range of 7.4 - 7.6. Post larvae fed with *Artemia* exhibited the highest growth ($P<0.05$) compared with microworm *(Anguillula sp.)* The fry can be fed on formulated feed after 35 days. The study established the breeding technology of *Belontia signata* successfully in captivity.

Key words: *Belontia signata,* Breeding, Ornamental fish