

Initial Crossbreeding to Develop Fancy Hybrids Using Threatened Endemic “Cyprinid” Species

***H. A. N. P. Chathuranga¹, S. Thanusan¹, B. P. A. Jeyaweera ¹ and
R. R. A. R Shirantha ²**

¹Faculty of Technology, University of Jaffna, Sri Lanka

²Inland Aquatic Resources and Aquaculture Division, National Aquatic Resources
Research and Development Agency (NARA), Sri Lanka

*chathu1333844@gmail.com

There are two economically important ornamental freshwater fish species found in Sri Lanka; *Dawkinsia filamentosa* and *Dawkinsia srilankensis*. Combination of several factors directly caused those freshwater fish species to threatened levels. Due to that, their export was currently regulated, highlighting immediate need of conservation. The objective of this study was to develop a new fancy hybrid variety for ornamental fish industry. Wild caught brooders of those species were separated into male and female and reared in cement tanks until they attained sexual maturity. Afterwards 2:1 ratio male and female brooders were introduced into the breeding tank, provided with submerged aquatic plants. The water quality parameters were recorded every week during the culture period. During this culture period offspring exhibited average length, average weight and average width of 17.29 mm, 0.047 mg and 2.55 mm, respectively. During this period, the water temperature, water pH, dissolved oxygen, alkalinity, hardness, nitrate, nitrite, ammonia, phosphate, turbidity and total suspended solids (TSS) in experiment tank was 27-29 °C, 7-9, 5-7 mg/L, 110-142 mg/L, 100-123 mg/L, 0.0099-0.0016 mg/L, 0.0015-0.0094 mg/L, 0.022-0.076 mg/L, 0.0123-0.0854 mg/L, 0.45-1.72 NTU, and 4-9 mg/L, respectively. Fulton condition factor (K) values ranged from 0.85 to 1.43, indicating varied fish health and body condition. Length frequency distribution displayed a right skew of 1.77, suggesting growth pattern variations. Therefore, we can conclude that, cross-breeding these *D. filamentosa* and *D. srilankensis* can create a successful hybrid variety. Often, produced new hybrids variety, showed the color preference of the *D. filamentosa* cultivar. Therefore, the newly found hybrid variety can be exported instead of pure *D. filamentosa* and this will also prevent the bio-piracy of *D. filamentosa* and conserve their stocks.

Keywords: *Dawkinsia filamentosa*, *Dawkinsia srilankensis*, Ornamental, Hybrid, Conservation