

Easy, low-cost and rapid breeding technique for mass production of *Devario pathirana*; an endangered minor Cyprinid endemic to Sri Lanka

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Endemic endangered fish species *Devario pathirana* confines to Opatha-Rakwana area is an eye-catching top-minnow of high export demand but it is legally protected. It can earn foreign exchange through export and wild stocks can be enhanced if massive captive breeding is done. However, past studies reported it needs running water to spawn, which is costly and needs adequate space. Thus, a study was initiated in 2021 to develop an easy, rapid and low-cost breeding technique. Wild collected *D. pathirana* were successfully bred in a cement-still-water rounded out-door tank (0.9 m radius and 0.70 m height) with 85% submerged aquatic plants viz. *Valisnaria spiralis*, *Aponogeton crispus*, and *Nitella* sp. cover in 60 cm water depth neither with aeration, nor water circulation nor exchange nor removal of the parents. In breeding tank Dissolved Oxygen, water temperature, alkalinity and pH ranged from 5.8–7.5 mg/l, 19–21°C, 195–126 CaCO₃mg/l and 6.2 to 6.5 respectively. Sex ratio was 1:2 (female: male) and stoking density was 15 individuals/tank. All stages were reared in one tank. The visual observations proved that the fry, fingerlings and adults occupied respectively in *Nitella* plant, mid-column and closer to bottom indicating resource partitioning. *D. pathirana* was found as a serial spawner of 80 average fecundity but larval survival was 55%. All were fed twice a day and three different feed were given i.e. 22–25g chopped ox-heart for adults, 9–10ml of *Monia* for fry and 10–15g commercial feed for young. After three months average size was 3.0 cm with 0.28 g average body weight. Total production with five pairs was 225. The breeding environment was a replicate of their natural habitats thus they can easily be adapted into natural condition with no or little mortality. This is an easy, low-cost, simple and rapid method compared to other fish breeding methods. It supports in the wise use of threatened endemic fish species in the ornamental industry.

Keywords: captive breeding, *Devario pathirana*, endemic, outdoor still water tank, threatened

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