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Fecundity of Pulicut Lake Pearl Spot *(Etroplus Suratensis)*

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ABSTRACT

The pearl spot (Etroplus suratensis), belonging to the family cichlidae form commercial fishery in Pulicut lake. Previous study reported the natural and multiple spawning of pearl spot in captive condition. The present study estimated the fecundity of pearl spot collected from different regions of Pulicut lake. The results found from the field collection and corresponding interpretation are presented below.

KEYWORDS

Introduction

The pearl spot (*Etroplus suratensis*), belonging to the family cichlidae and an endemic cichlid species to India and Sri lanka (Hora and Pillay, 1962; Ward and Wymann, 1977), form commercial fishery in the brackishwater lakes of India (Bindu and Padmakumar, 2014; Prasadam, 1971). This species exhibit wide salinity tolerance and cultured in both freshwater and brackishwater (Chandrasekar et al., 2014). However, limited success has been achieved in the captive breeding for aquaculture, due to its complex reproductive behavior (Padmakumar et al., 2012). Recently, our group achieved success in induced breeding of this native species in small FRP tanks. Also, multiple breeding was recorded (Selvaraj et al., 2016).

Pearlspot exhibit different reproductive behaviour such as courtship, pairing and nesting, pit nursing and parental care (Padmakumar et al., 2012). Our previous study demonstrated the use of small FRP tanks for stimulating natural spawning in pearl spot. The present study evaluated the fecundity values in wild pearl spot, collected from Pulicut lake, to undertake mass scale seed production of this cichlid species.

Materials and Methods

Adult pearlspot collected from the boat station and nursery ground regions, surrounding the Pulicat lake area (latitude 13°24' and 13°43'N and longitude 80°03' and 80°18'E; Dhinamala et al., 2015) were transferred and acclimatized in small FRP tanks (300 l). The altitude ranges from 100' mean sea level (MSL) to 1200' MSL (Tamil Nadu Forest Department, Chennai, India). After acclimatization, on the next day 16 individuals were sampled for estimation of fecundity.

Results and Discussion

Using gravimetric method, fecundity values were estimated in 10 individuals. The estimated values are shown in Table 1.

Table 1: Fecundity of Pulicut lake pearl spot

Sample No.	Total length (cm)	Body weight (g)	Fecundity
1	17.2	97.5	2724
2	15.7	69.3	1700
3	16.6	84.9	1982
4	15.6	80.1	1972
5	15.3	64.3	1768
6	15.7	66.2	2808
7	15.6	80.2	1292
8	16.8	85.2	1581
9	14.4	80.9	1258
10	15.1	68.7	1422

*This specimen is likely to have undergone spawning, as the ovary size was reduced, with presence of large size eggs inside the ovary.

The fecundity values ranged between 1258 and 2808. Mean value found to be 1851. The body weight found to be critical for higher fecundity values, in comparison to length, in the pearl spot. Interestingly, in the same length group fecundity values were found to differ drastically, suggesting involvement of other ecological factors in the fecundity of pearl spot.

In our stimulation of natural spawning experiment, in several cases egg values ranged between 200 and 500. The mean fecundity value found to be 3 fold higher than the spawned eggs, suggesting the possibility for mass scale seed production of this cichlid species, using different hormones.

The fecundity values reported in the present study is more or less similar with the studies reported in other brackishwater and freshwater ecosystems (Ward and Samarakoon, 1981; Samarakoon, 1983; De Silva et al., 1984; Jayaprakas et al., 1990; Misra, 2005; Bindu and Padmakumar, 2014). Biological significance of higher fecundity value of Pulicut lake stock need to be explored for enhancing the fish stock.

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