



**CAPTIVE BREEDING OF THE RECENTLY DISCOVERED
SNAKEHEAD SPECIES *Channa andrao* BRITZ, 2013 BY
HABITAT MANIPULATION**

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AUTHORS' CONTRIBUTIONS

This work was carried out in collaboration among all authors. All authors read and approved the final manuscript.

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ABSTRACT

Captive breeding is considered as one of the most important aspects of the conservation of fish species. The breeding operation of many snakehead species is done using synthetic hormones, but no report is available on breeding by habitat manipulation without using hormones. Pairing among brooders is a common phenomenon in snakehead species. This article thus focuses on the captive breeding of *Channa andrao* following the pairing technique. Two pairs of brooders successfully bred in our experimental trial with the highest fertilization rate (85%) and hatching rate (86%) of fish of length-weight 10.33 cm and 11.05 cm in males and 11.23 g and 11.33 g in females. Suitable water parameters were maintained during the breeding period.

Keywords: Captive breeding; pairing; fertilization rate; hatching rate.

1. INTRODUCTION

Channa andrao Britz, 2013 is a recently described snakehead from West Bengal, India and is placed in the group of snakeheads that lack pelvic fin. A detailed study of the morphometric and meristic

characteristics separates the species from some of its close relatives [1]. However, the descriptions of all the recently discovered species of snakeheads are reported directly from the wild with no cultural evidence in captive fisheries. The persistence of this problem in recent years increases the reliability of

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Investigation on the captive propagation of the endemic murrel *Channa stewartii* (Playfair, 1867)

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ABSTRACT

Channa stewartii occurring in the Eastern Himalayan region is an important ornamental fish commanding good value in domestic and international ornamental trade markets. Rampant exploitation from the wild has resulted in a declining population trend that necessitates immediate conservation measures for replenishing natural stocks. Since *ex-situ* propagation has shown reliability in restoring the population of many extant fishes, the present investigation was undertaken to propagate and standardize breeding protocols of the species. For captive propagation, five pairs of brooders were selected. The length/weight ranged from 19.5-20.4 cm/55.12-68.85 g in the cases of male specimens and in the case of females, it was 20.9-24.2 cm/69.61-83.92 g. The physicochemical parameters of water were maintained in the sustenance of brooders and breeds. Successful batches of fries were obtained from each pair via captive breeding following the pairing method. The highest fertilization rate (87-89%) was observed in the pair with standard length and weight of 19.8 cm and 58.13 g in males and 23.5cm and 83.92 g in females. Fertilized eggs were round, floating and 0.8-1.0 mm in diameter. Fries were measured as 0.4-0.6 cm and weighed in the range of 0.02-0.04 g. Parental care was distinct in both sexes. The breeding experiment carried out without the induction of synthetic hormones can be regarded as a novel approach toward the captive propagation of fish which will surely aid in formulating management and conservation approaches in near future.

INTRODUCTION

Channa stewartii (Playfair, 1867), commonly known as “Chenga” in Assamese is an endemic murrel of the Brahmaputra basin of India and Bangladesh and reported from the swamps and lakes of Assam as well as from altitudes above 1,500 m from Meghalaya and Nepal (Talwar and Jhingran, 1991; Kalita *et al.*, 2018). The fish is often consumed locally as a cheap source of animal protein and commands good demand in the