

Gonadal Development, Fecundity Rate and Hatchability of Giant Snakehead (*Channa marulius*) by using different synthetic hormones in Captivity.

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ABSTRACT

This research was conducted to evaluate the induced breeding using the application of synthetic hormones Conceptal (T1), Suprefact (T2), and Ovaprim (T3), as well as to understand the reproductive biology and gonadal maturation of the bullseye snakehead, *Channa marulius*. There were nine ponds with a dimension of [2 (W) 4 (L) 1.5 m (D)] representing three treatments (in triplicate) with a pair of fish in each pond. The hormones were injected into the test fish at the following proportions (0.3ml, 0.4ml, and 0.5ml to males and 0.8ml, 0.9ml, and 1.0ml to females' body weight) and then released into the pond for large-scale production of seed. Over the study period, estimates of the gonado-somatic index (GSI) and absolute fecundity were estimated. In addition to these, gonadal histology was carried out for a better assessment of ovarian maturity. The results showed no successful spawning on Conceptal. The highest average GSI values were found for both females and males in Suprefact (3.32 ± 1.62 % and 1.67 ± 0.18 %, respectively), then in Ovaprim (1.13 ± 0.56 and 1.22 ± 0.68 %, respectively). The result showed that fish stimulated with suprefact (T2) obtained the highest average fecundity (3079.3 ± 100.7) and survival rate (95.75 ± 1.51 %), respectively. Gonads were observed microscopically, including staining and histology. The four stages of ovarian development were identified by ovarian histology: (1) primary growth, (2) yolk globules, (3) vitellogenesis (4) maturity. In conclusion, the use of Suprefact® and Ovaprim® allows for to maximization of the effects of breeding induction of *C. marulius* in small experimental breeding ponds.

Keywords: *Channa marulius*, induced breeding, gonadosomatic index, reproductive biology, gonadal histology.