Ovarian Development of a river catfish Hemibagrus nemurus (Valenciennes, 1840) in captivity.

ABSTRACT

Hemibagrus nemurus is a riverine catfish with high economic and nutritive values. Investigations on ovarian development of this fish were carried out to determine the mode of ovarian development and describe the oocyte developmental stages. Histological studies were done on ovaries using light microscopy and scanning electron microscopy. Fish were sampled monthly for a period of six months (August 2009 to January 2010). The mean oocyte diameter (OD) ranged from 871 ± 161.41 µm to 1,167 ± 26.77 µm and the highest OD was in November. Oocyte size-frequency distribution showed a polymodal distribution. The mean gonadosomatic index (GSI) ranged from 1.14 ± 0.87% to 7.06 ± 1.40% and highest GSI was in November. The ovaries exhibited three phases of oocyte growth, which were primary growth, secondary growth and maturation phases. Based on histological criteria, the oocyte developmental stages were divided into seven stages as chromatin nucleolar, early perinucleolar, late perinucleolar, cortical alveolar, vitellogenesis, mature oocyte and germinal vesicle migration stages. All the seven stages of oocyte development were observed in the ovaries. Oogonia were always present throughout the developmental stages. The ovaries had more than two stages of oocyte development. This is the first report on the mode of ovarian development of H. nemurus. These findings indicated that H. nemurus has asynchronous mode of ovarian development and is capable of spawning several times in a year under favourable conditions.

Keyword: Ovarian Development Hemibagrarus nemurus; River catfish; Captivity.