



REPRODUCTIVE HORMONE PROFILE AND TISSUE ARCHITECTURE OF GONAD IN MATURED GREY MULLET (*MUGIL CEPHALUS*) CAUGHT FROM THE INSHORE WATERS OF KOVALAM, EAST COAST OF INDIA

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India Grey mullet (*Mugil cephalus*) is one of the very important marine teleosts suitable for farming in marine, brackishwater and freshwater eco-systems. It is extensively farmed in tropical and sub-tropical conditions. The artificial propagation of grey mullet though has been practised in some countries and in many places it depends upon the natural recruitment. The major constraint in the captive maturation and spawning of grey mullet is a lack of adequate knowledge on the hormonal profile of different stages of maturation to understand the conditions for intervening and administer exogenous hormone to accelerate ovulation and spawning. In order to understand the profile of the reproductive hormone, an attempt was made to analyze the important reproductive hormones of grey mullet female fish caught from the wild. Blood sample was collected from a matured female (1.4 kg size) caught from the inshore catch from Kovalam during the month of November 2010. Serum was separated and the

reproductive hormones like testosterone, 17 β - estradiol and progesterone following chemiluminescence method. Gonado-somatic index (GSI), egg size and histoarchitecture of the ovary were also analyzed. Results of the analysis showed that in the matured female the mean egg size is of $600 \pm 40 \mu\text{m}$ (GSI-13.62). The total testosterone was 39.81 mg/dl, 17 β - estradiol was 29.4 mg/dl and the progesterone level was 0.0015 mg/dl. The histoarchitecture showed the central location of germinal vesicle, prominent distribution of yolk granules in cytoplasm and movement of cortical alveoli towards oocyte membrane indicating the late maturing stage of oocytes in the analyzed fish. The observation of the present investigation revealed that fishes having oocyte around $600 \mu\text{m}$ is in advanced stage of maturity, and fishes with this type of oocytes could be induced to spawn under captivity with the administration of gonadotropin hormone.