Microscopic staging system used in the identification of gonad developmental stages of Scomberoides lysan

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Abstract

The present study was carried out to identify the developmental changes in the gonads of Scomberoides lysan during maturation in order to determine the spawning pattern, ovulation pattern and spawning season. S. lysan is one of the most economically important Carangid food fish in Sri Lanka. Samples were obtained from June 2010 to May 2012 from the Sri Lankan waters and a total number of 570 ovaries and 525 testes were analyzed macroscopic ally and microscopically. Oocyte diameters of selected samples were measured in order to find out the ovulation pattern. Histologically ovaries were categorized in to seven stages by identifying chromatin nucleolus, peri nucleolus, cortical alveolar, yolk globular, late yolk, hydrated, atresia and post ovulatory follicle stage oocytes and testes were categorized in to four stages. Oocyte diameter range from 12.5-450.0 jim. Occurrence of several batches of oocytes at a time and the presence of different type of oocyte in an ovary revealed that this would be a multiple spawner with group synchronous ovulation pattern. Hydrated and post ovulatory follicle stage oocytes and spawning stage testes were only available during June and September. Immature stages of both gonads were available throughout the study period. Observations on seasonal maturity stages indicate that this species is a multiple spawner with two peak spawning season in June and September. The results obtained from the present study can be used in the management of S. lysan in the Sri Lankan waters to ensure the sustainable utilization of this species.

Author keywords

Histology; Maturity stages; Ovulation pattern; Scomberoides lysan; Spawning pattern

Indexed keywords

GEOBASE Subject Index: developmental stage; fishery management; histology; maturation; perciform; spawning; species occurrence

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