*The Asian Journal of Animal Science* (December, 2010), Vol. 5 Issue 2 : 184-190 | *RESEARCH ARTICLE*

# Maturity, spawning and fecundity of *Saurida tumbil* from Mumbai water

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## ABSTRACT

The absolute fecundity of *Saurida tumbil* ranged between 24,160 to 1, 72,000 eggs with weight range of 230-670 g. Linear relationship between fecundity and weight was more valid than that of length and ovary weight. The fish bred once a year during November to march. The length at which 50% of the females mature was calculated as 296 mm. The female dominated the commercial catch and overall male to female ratio of population was 1:1.62 throughout the year

**Key words :** Lizard fish, *Saurida tumbil*, Fecundity, Spawning

The average annual catch of lizardfish during the period 1991-2003 was estimated 26,536 tonnes which contributed on an average of 1.10% of total marine landings and 3.50% of total demersal catch of India (Anonymous, 2003). Rao (1983) studied maturation and spawning of lizardfishes (*Saurida* spp.) from northwestern part of Bay of Bengal. Some aspects of biology and fecundity of *S. tumbil* have been studied from Mumbai waters (Dighe, 1977; Singh *et al.,* 1995). There are also reports on maturation and spawning of *S. tumbil* from the foreign waters (Okada and Kyushin, 1955; Liu and Tung, 1959; Yamada *et al.,* 1965; Tiews *et al.,* 1972). The present investigation is the detailed study of reproductive biology of *S. tumbil* from Mumbai coast.

## MATERIALS AND METHODS

Fresh specimens of *S. tumbil* were collected weekly from the New Ferry Wharf and Sassoon docks landing centres, Mumbai. In order to study the maturity and spawning season, 290 females of *S. tumbil* were observed. Gonads were weighed to the nearest milli-grams on a sensitive electronic balance. Samples of ovaries were preserved in 5% formalin for ova diameter studies. The diameters of ova were measured in straight line under a compound microscope magnified 100 times with eyepiece fitted with an ocular micrometer. Ova samples were measured to the nearest micrometer division (1µm division = 0.016mm).

The maturity stages were classified exclusively depending on the stages of ovary, size of ova and other observations of the ova.

The Gonado-Somatic Index (GSI) was calculated for females by using the formula:

$$GSI = \frac{\text{Weight of goand}}{\text{Weight of the fish}} \times 100$$

The females in stage III and above were considered as mature for the determining the length at first maturity. The data collected for twenty one months were pooled and percentage of cumulative frequency were plotted against the size to determine the size at which 50 % fishes mature.

Developmental stages were determined by the ICES scale as per Wood (1930) as: Immature, Early maturing, Maturing, Late maturing, Mature, Ripe and Spent.. To know the homogeneity of the distribution of males and females, Chi square test (Snedecor and Cochran, 1967) was applied.

## RESULTS AND DISCUSSION

The results of the study have been discussed in the following sub heads:

### Morphology of gonad with development:

The following developmental stages of testis and ovary of *S. tumbil* were identified after the thorough examination:

### Males:

Immature:

The testes were long and slender thread-like structure extending upto ¾ length of the body cavity.

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