

## M.Phil. in Fisheries Sciences

### **Reproductive characteristics of *Scomberoides lysan* (Forsskal, 1775) (pisces : carangidae) from the waters around Jaffna peninsula, Sri Lanka**

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#### Abstract

The present study was carried out to understand the reproductive characteristic features of double spotted queen fish, *Scomberoides lysan* during January 2010 to December 2011 from the waters around Jaffna Peninsula, Sri Lanka. Monthly random sampling was performed during the period and a total of 1534 *Scomberoides lysan* were collected from Paasaiyoor, Kurunagar, Ponnalai, Karainagar, Delft and Point Pedro landing centers. Macroscopic and microscopic analysis of ovaries confirmed that this species shows intense spawning during June and September. Hydrated and post ovulatory follicle stage oocytes and spawning stage testes were only available during June and September and gonadosomatic index further confirmed that an intense spawning season was in September followed by June. Fecundity varied from 24 655 to 82 562 542. The computer based linear regression statistical analysis for fecundity (FE) versus ovary weight (OW) and total length (TL) revealed equations of

$FE = OW^{2.4} \times 288.40$  and  $FE = TL^{6.75} \times 1584893$ . Overall sex ratio did not vary significantly from an expected 1:1 ratio, with slightly less number of males than females (1.19:1,  $X^2=0.865$ ,  $P>0.05$ ). Probit analysis of proportion mature versus total length for male and female indicates that *S. lysan* male reached maturity at 55.4 cm total length while female reached maturity at 60.7 cm total length and the reverse Von Bertalanffy equation expressed that the age at 50% maturity for male and female are 2.27 years and 2.71 years respectively. The optimized values for K and  $L_{\infty}$  obtained by ELEFAN I for male and female was  $0.41 \text{ year}^{-1}$ , 87.96 cm and  $0.40 \text{ year}^{-1}$ , 88.85 cm respectively. To protect the species in a sustainable level, *S. lysan* shall be protected during the peak spawning season September and June. The results obtained from the present study can be used in the management of *S. lysan* from the Sri Lankan waters to ensure the sustainable utilization and can be used in mariculture of this species.