A study on some aspects of reproductive biology and morphometrics of Indian mackerel (*Rastrelliger kanagurta*) in Sri Lankan waters

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The Indian mackerel (*Rastrelliger kanagurta*) is a species of mackerel belonging to the family Perciformes; Scombrids are important food fish species in Sri Lanka. There is a considerable variation in the landings of this species and it is also landed as a by-catch from fisheries targeting other small pelagic species. In the present study, a total of 262 individuals of *Rastrelliger kanagurta* obtained from Sri Lankan waters during the period of January 2013 to September 2013 were analyzed to study the reproductive biology. The sex ratio, Gonadosomatic index (GSI) and fecundity of *Rastrelliger kanagurta* were estimated. The length-weight relationship and length-length relationships of Total Length- TL, Fork Length-FL and Standard Length-SL were also obtained. The sex ratio between female and male was 1:1.5. The estimated length–weight relationships were $W=0.004L^{3.27}$ (R^2= 0.97) for males and $W=0.007L^{3.15}$ (R^2= 0.97) for females. The estimated length-length relationships were TL= 0.885FL (R^2=0.995), TL=0.881SL (R^2=0.993) and FL= 0.913SL (R^2=0.995). Based on the appearance of the ovary and GSI, gonads were classified into 4 maturity stages: immature, maturing, ripe and spent. The estimated mean GSI values with standard deviations for respective maturity stages of females were 0.18±0.076, 1.90±1.34, 5.06 ± 1.96 and 4.39±0.17 and respective GSI values for males were 0.46±0.24, 1.59±1.31, 4.93± 2.12 and 2.99± 2.53. Total fecundity for a ripe female ranged from 75,420 to 101,609, where the relative fecundity was estimated as 403 ± 93 eggs per gram body weight. An analysis of GSI of *Rastrelliger kanagurta* of western coastal areas depicted that females showed a high peak in the month of April followed by males in the month of June.

Keywords: *Rastrelliger kanagurta*, length weight relationship, reproductive biology, GSI

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