

Lipid reserves of *Scomberoides lysan* (Pisces: Carangidae) from the Sri Lankan waters

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Abstract

The present investigation was carried out to quantify the lipid reserves and to find out the correlation with standard length and water content for total lipid content in different body tissues of *Scomberoides lysan*. Energy allocation of lipid reserves into liver, gonad and muscle were analyzed for the first time for different gonad maturation stages of *S. lysan* from the Sri Lankan waters. Relationships of energy storage with body size and gonad maturation stages and percentage of water content and lipid content of muscle, liver and gonad were computed and compared. Results showed that lipid content in the liver varied between 4.54 and 66.96% (Mean $31.11 \pm 14.10\%$) and revealed liver is the major energy storage site in *S. lysan*. Mean values for percentage of lipid reserve in ovary and liver for maturing female was 20.42 and 41.35% whereas for pre-spawning female was 44.2 and 30.79%, respectively. Similar trend was also obtained for males and it emphasize that the lipid stored in the liver during the maturing stage is mobilized towards the gonad during pre-spawning for gonad development, gamete production and other reproductive purposes. Regression analysis showed that the percentage of lipid of liver, gonad and muscle for all individuals showed a significant curvilinear relationship with standard length. Moreover, a curvilinear relationship was obtained between standard length and lipid hepatosomatic index but linear relationship was obtained between standard length and lipid gonadosomatic index. Interestingly, inverse linear relationship was obtained between percentage of water content and lipid content of muscle, liver and gonad. The results gained from the present study provide information on nutritional status of different maturity stages, reproductive potential and broodstock nutrition of *S. lysan*.

Author keywords

Energy allocation; Gonad; Lipid content; Lipid gonadosomatic index; Lipid hepatosomatic index; Liver; Muscle; Pre-spawning

Indexed keywords

Species Index: Carangidae; Pisces; *Scomberoides lysan*