

Lipid changes in relation to maturation and spawning of tropical double spotted queenfish, *Scomberoides lysan* (Forsskål, 1775)

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Abstract

The present study was undertaken to understand the lipid changes in gonad, muscle and liver tissues of tropical double spotted queen fish, *Scomberoides lysan* (Family: Carangidae) in relation to sexual maturity and spawning. Cholesterol (CS), phospholipid (PL) and triacylglycerol (TAG) were determined in gonad, muscle and liver tissues with respect to maturity stages of both sexes as well as months. Fish were periodically caught from waters around Sri Lanka throughout the year 2010 to 2011. Fish length, weight, sex and maturation status were recorded. Content of CS, PL and TAG in gonad, muscle and liver tissues were determined at the laboratory. The values of CS, PL and TAG in the ovary increased to 2-5 fold throughout the ovarian maturation and decreased to 2-8 fold after spawning, whereas in liver and muscle tissue, increased up to maturation and decreased during spawning. Similar dynamics was recorded in males. The main lipid constituents in the liver and muscle of mature fish were TAG and PL, respectively. Lipid constituents in gonads showed higher value, whereas muscle and liver showed lower value in June and September, which represent the spawning time of *S. lysan*. It has been concluded that the values of lipid in tissues of *S. lysan* influence the cycle of maturation and time of spawning. This new information can be used for the determination of the fishing season for *S. lysan*, when it is not reproductively active and has high nutritional value in terms of lipid. The knowledge gained on CS, PL and TAG in different maturity stages of *S. lysan* can also be utilized in broodstock diet formulation in the future culture trials of *S. lysan*.

Author keywords

Cholesterol; Phospholipid; *Scomberoides lysan*; Triacylglycerol