

Food and feeding habits and gillnet selectivity of three barracuda species from gillnet catches off Negombo coastal area, Sri Lanka.

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Abstract

Barracuda is highly demanded fish for its nutritive value and affordability. Biology and fishery of Barracuda has not been investigated much and documented literature is scanty. High proportions of barracuda by-catches are evident in herring gillnet fishery in Negombo fish landing site in every year. Of this fishery, gillnet selectivity (Baranov-Holt method) and food and feeding habit of highly caught barracuda species; *Sphyraena jello*, *Sphyraena obtusata* and *Sphyraena forsteri* were investigated throughout the fishing season from August to November 2006.

Total barracuda production from this fishery during the study period, was calculated as 375,430.5 kg. . High catch percentages (61.25 %) were recorded for *S. jello* from August to September but from October to November *S. obtusata* was dominated in the catch (60 %). Estimated values for the gillnet selection ranges of *S. jello* and *S. obtusata* for 2.5 cm and 3.0 cm mesh sizes were 13.1-26.0 cm, 14.0-25.7 cm and 15.2-25.4 cm, 12.8-27 cm respectively. Estimated L_{opt} for 2.5 cm and 3.0 cm mesh sizes respectively were 27.61 cm and 33.12 cm for *S. jello* and 20.06 cm and 24.06 cm for *S. obtusata*.

Asymptotic length and growth constant of *S. jello* and *S. obtusata* were estimated to be 44.63 cm, 1.51 year⁻¹ and 22.8 cm, 1.00 year⁻¹ respectively. For *S. obtusata* logarithmic length weight relationship was $y = 2.3501x - 1.1387$ while estimated relative gut length-standard length (SL) relationship was $y = -3E - 05x^2 + 0.0008x + 0.3085$. Relationship between Gastro somatic index and SL ($y = 0.0097x^2 + 0.471x + 7.9435$) of *S. obtusata* indicated higher feeding efficiency in smaller and larger length groups. In stomach contents of *S. obtusata*, fish species, crustaceans, mollusks, zooplanktons and phytoplankton were recorded. *Stereophorus indicus* was the main food item found in stomach contents. According to the similarity analysis, food habit was similar for 13-23 cm and >29 length groups at similarity level of 29.64.

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