

**Fishery and gillnet selectivity pattern of two anchovy species: *Encrasicholina heteroloba* and *Steleophorus insularis* in the coastal waters off Negombo, Sri Lanka**

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This study evaluates the fishery and gillnet selectivity pattern of anchovy species inhabiting in the coastal water off Negombo, Sri Lanka. Catch, effort, length measurements and gear specific information were collected at Negombo, Kuttiduwa fish landing site from February to December 2015 by making fortnight field visits. On each sampling day, 50 – 60 % of boats operated for the anchovy fishery were sampled randomly. There is a year around fishery for anchovies in the coastal waters off Negombo and the estimated total anchovy production for the study period was 941.30 Mt. Two anchovy species; *Encrasicholina heteroloba* and *Steleophorus insularis* were predominant in the catches and they were mainly exploited using small mesh gillnets with three different mesh sizes; 1.0, 1.2 and 1.8 cm stretch meshes. *E. heteroloba* were dominant in the catches throughout the study period but *S. insularis* were abundant seasonally. Gillnet selectivity study revealed that *S. insularis* were mainly exploited using 1.0 and 1.2 cm stretch mesh gillnets while for *E. heteroloba* 1.0, 1.2 and 1.8 cm stretch mesh gillnets were used. The estimated selection ranges for *E. heteroloba* and *S. insularis* for 1.0 cm mesh size were 4.98 - 6.22 cm and 4.07 - 5.53 cm respectively, and for 1.2 mesh size, these values were 5.63 - 9.21cm and 5.03 - 6.49 respectively. Gillnets with 1.8 cm stretch mesh size were mainly used to exploit *E. heteroloba* and the estimated selection range was 8.22 - 10.16 cm. Estimated  $L_{opt}$  for *E. heteroloba* for 1.0, 1.2 and 1.8 cm mesh sizes were 5.60, 6.42 and 9.19 cm respectively and 4.80 and 5.76 cm for *S. insularis*. The size at first sexual maturity of *E. heteroloba* and *S. insularis* was 7.6 cm and 6.0 cm respectively. This study revealed that the currently used gillnets with 1.0 and 1.2 cm stretch mesh sizes cause to land immature individuals of *E. heteroloba* and *S. insularis*. Therefore, there is an urgent need of regulating the mesh sizes of gill nets currently used in the anchovy fishery in the coastal waters off Negombo, Sri Lanka.

**Keywords:** *Encrasicholina heteroloba*, Gillnet selectivity, *Steleophorus insularis*