Influence of hook size and bait type on the fish catches of longline in the western coastal waters of Sri lanka.

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Abstract

This study investigates the experimental and commercial longlines fisheries in Sri Lanka with an objective of studying the effect of hook size on size of fish and the effect of bait type on the catch. The experimental fishing trails were conducted in the coastal belt from Colombo to Chilaw from April 2000 to January 2001 using a 3.5 ton 8.4m fishing boat.

A total on 150 fishing trials were carried out and of three 55 were from experimental longline and 95 were from local fishermen's longlines. A total of 78625 hooks were observed from these 150 fishing trials. Six hook sizes viz. 5, 6,7,8,9 and 10 are used in these longline, hook no. 5 being the largest and hook no. 10 being the smallest. Seven bait types i.e.; Squid (*Sepia aculeate*), Herring (*Amblygaster sirm*). Salaya (*Sardinella albella*), Sudaya (*Sardinella longiceps*) and combinations of Squid/Herring, Squid/Salaya and Squid/Sudaya were tested.

The composition of the catch in the longlines varies with the trials the fishing area. The fishers of the family Lethrinidae were the most abundant in the catches of longlines. Member of the family Serranidae, Lutjnidae, Haemulidae, Carangidae, Dasyatididae and Balistidae were also caught. Some fish species of the family such as Rachyscrtridae, Dretanidae, B. alistidae, Scaridae, Carangidae, Siganidae and Ephippidae were caught in low numbers and therefore were not included in the present analysis.

The highest number of fish was caught in hook sizes 9 and 10. The squid was the most frequently used bait type and 62% of the longlines use this bait. The CPUE expressed as number of fish per 100 hooks increased from August to October and then increased until December. Results of ONE–WAY ANNOVA indicated that the body size (length and weight) of *Lethrinus microdon* and *Epinephelus malabaricus* significantly varied with the hook size ($p < 0.05$). This is possible due to selectivity of hook size due to gape size. Therefore it might be possible to the catch and size composition of longlines using different hook sizes.

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