

Research Note

## Selective Effect of Ring Seines

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Selectivity studies of fishing gears around the world have focused mainly on trawls, gill nets, hook and line and traps (Fridman, 1986; Mac Lennan, 1992). A few studies on the selectivity of seine nets have been conducted in South East Asia (Anon, 1995, Dickson, 1987 and Dickson 1995). An attempt is made here to study the selective action of the ring seine of the larger mesh size 20 mm after pursing.

The large meshed (20 mm) ring seine, locally known as *thanguvala*, was taken as the experimental gear and the small meshed (10 mm) ring seine called *choodavala* was taken as the control gear. Both gears were operated from the same area on the Alapuzha coast in Kerala during a period of 12 months. The hauling and the retrieval techniques used for both the gears were identical.

The fishes selected for the study were mackerel and rainbow sardines. The length-frequency data as described by Alagaraja (1984) was used for stock assessment studies. Sampling was done by measuring 200-250 nos. of each species per month. The probability of capture for each length interval was found out using the following equation.

$$\text{Probability of capture} = C / C+E$$

Where C = Catch retained by the large mesh ring seine

E = Escapees from the large mesh ring seine

C can be taken as the catch obtained in each class interval in the large mesh net and C+E can be taken as the catch obtained in the corresponding class interval in the small meshed ring seine operated in the same fishing ground at the same time. Both values were expressed as percentage to bring them to the same scale. The probabilities of capture were plotted against class intervals of length for different species. Typical sigmoid selection curves were obtained for mackerel and rainbow sardine (Fig. 1 and 2). The L25, L50 and L75 for mackerel were 13.5cm, 14.5-15.5cm and 15.5-16.5cm. The selection factor for mackerel was 7.5cm. Similarly the L25, L50 and L75 for rainbow sardine was 11.5-12.5cm, 12.5-13.5cm and 13.5-14.5cm. The selection range was between 11.5cm and 14.5 cm. The selection factor for rainbow sardine was 6. This is primarily because small meshes are used to

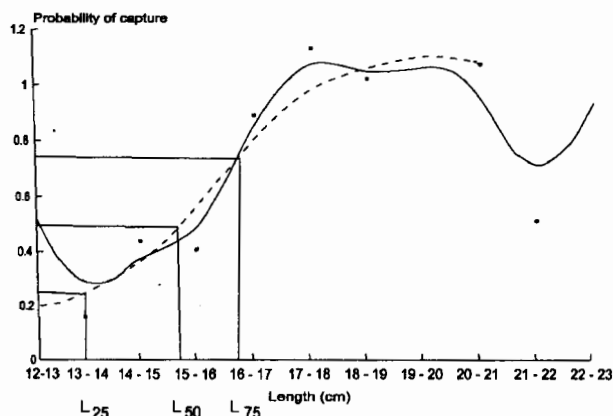


Fig. 1. Selectivity curve of mackerel

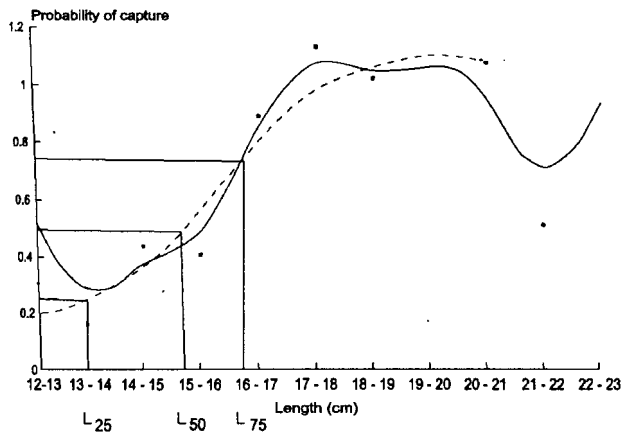


Fig. 2. Selectivity curve of rainbow sardine

catch the target species. Secondly there is an operational pre selection for preferred species.

The escape of small pelagics can be made possible through the large meshes near the bunt where sometimes gilling of the fish are observed. On many occasions during operation of the large mesh ring seine, the glossy perchlet or *Ambassis sp.* of size below 60 mm got entangled within meshes causing much difficulty to the fishermen. This is a typical example of post pursuing selectivity (Ali, 1995; Anon., 1995). Since there is a likelihood of fish surviving if released from a purse seine than from a trawl net cod end, larger meshes and filter panels can be used to allow the unwanted fish to escape. The observations made during the study show that there exists a selection after pursuing in the large mesh ring seines used on the Kerala coast.

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