Preliminary Investigations with Improved Stake Nets Around Kakinada, Andhra pradesh

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Stake nets operated in Kakinada region with small meshed cod ends proved to be destructive. Use of cotton twines necessitates frequent preservative treatment. With a view to avoiding such undesirable conditions, new nets were designed and tested. The paper describes the design, operation and results of these investigations.

Stake nets operated in Kakinada region with small size cod ends were found to be destructive by catching small sized fish and prawns.

Amongst the traditional fishing gear employed in the brackish and backwaters, the stake nets form an important component perhaps second only to drift nets. (Hornell, 1925). These nets are set against the tidal currents for the capture of prawns and small demersal fishes. Detailed investigations on these nets have shown the need to develop a suitable new design of stake net for improving their operational efficiency and longevity resulting in increased returns. The results of a study on the stake net for development of small scale fisheries through improvements, modification and innovations to the existing traditional gear, are incorporated in this communication.

Materials and Methods

The net has wide mouth tapering to a narrow cod end. The net is fabricated in about 8 segments (Fig.1). The mesh size ranges from 15 cm at the mouth and 1 cm at the cod end. The webbing is made using twisted cotton yarn 10 count. The life of the stake net is increased by periodical treatment with preservatives such as tree bark solution and soaking the net in rice water (local name, Ganji). The quadrangular shape of the mouth is achieved by joining together many meshes at the four corners and tying them up to the bamboo or casuarina poles at the sides above and below the water surface. The cod end of the net is fixed to another pole behind with a rope.

The net is set against the current at the commencement of low tide and operated for 3-4 hours. At regular intervals the bag at the end is emptied of the catches.

A new design of stake net was worked out and fabricated with PE twisted monofilament with four panels (Fig.2). It has a total length of 20 m including a cod end and there is gradual reduction of mesh size from 15 cm to 1.5 cm at the cod end.

![Fig. 1 Indigenous stake net](image-url)
The presence of side panels effectively avoid the clubbing together of large number of meshes at the mouth and keeping the net open without collapse.

The net was operated in the Upputeru drain at Matlapalem village during the period July to September 1981 side by side with the indigenous stake net. The net was set against the tidal current during low tide for 4-8 hours. The operations were also done in the Upputeru channel at Kakinada.

Results and Discussion.

The experimental fishing with the improved stake net has shown that this net gave the better catch rate of fish and prawns. (Table 1). It can be seen (Table 2) that the catch of smaller size fish and prawns being more or less same in both nets, the experimental net collected more quantities of relatively larger size fish and prawns which resulted in better dividends to the fishermen. This concurs with observations made elsewhere (George et al., 1974).

The experimental net was observed to withstand the strong tidal flow and damage was minimal. The net needed no treatment with preservatives as in the case of the local cotton stake net.

The stake net in vogue in the village of Matlapalem and other regions have been observed to have a number of disadvantages. The newly designed stake net made of monofilament promoted conservation of juveniles of fish and prawns, yielding better returns, to the fishermen.

References
Hornell, J. (1925) Madras Fish. Bull. 18, 59