Troll Line Fishing in India

N. Subramonia Pillai
Central Institute of Fisheries Technology, Cochin - 682 029

Troll line is a popular method practised in the coastal districts of Andhra Pradesh, Tamil Nadu, Kerala and also Lakshadweep. The origin and development of this gear through years and the present status as a low energy fishing in the artisanal sector is discussed in this paper.

Trolling, otherwise called whiffing is employed for the capture of important commercial fishes like, seer, tuna, barracuda etc. In troll lines, hooks hidden in the artificial bait otherwise called jigs are towed behind a moving vessel at a particular speed. The fish is lured towards the moving jig and get hooked while gulping the bait. According to Scaife (1956) and Koyama (1959) troll lines are effective gear for the capture of fast swimming predatory fishes.

Troll line fishing with artificial bait such as coconut kernel, wooden plugs and coir fibres was practised by the fishermen of the southwest coast, Coromandal coast and Laccadives (Hornell, 1937). This fishing was not known to the Indian fishermen and its use came due to the contact with Ceylon fishermen and became popular in the southern part of India and later extended to the Malabar and, Kanara coast up to Goa. This communication deals with the present status of troll line in the artisanal sector and strategies for further development.

Catamaran is the most suitable craft for the troll line fishing. Plank built canoes are also used in some places particularly Lakshadweep islands. The size of the catamaran ranges from 4.0 to 7.0 m in length and 0.7 to 1.4 m width, built either with three logs or five logs. According to Jayaraj (1985) there are about 73,390 catamarans in India of which about 50% are engaged in hook and line fishing including trolling.

Fishing operation

The catamaran attains the maximum cruising speed of 4 to 5 knots which is required for the fishing. The lines with the hooks are released on reaching the ground. Usually three lines each with a length of 30 to 40 m are released. When the fish is hooked, the line is hauled up. The fish is removed and the line is again released. Normally fishing starts early in the morning and extends up to 3 p.m. The fishing season commences in early September and continues up to March with a peak during October to December.

Over the last few decades there has been marked development in the troll line fishing in the artisanal sector. With the introduction of outboard engines most of the catamarans are fitted with engine which enables fishermen to go to the distant fishing ground and return back with ease. The cotton line is replaced by monofilament of 1.5 mm diameter and jigs are made with lead, covered with coloured silk or synthetic fibres. A double hook instead of the single hook is also used to reduce the escape of the fish.
There are separate troll lines for seer and tuna fishing. While the troll line for seer consists of only one double hook, a series of ten hooks covered with silk fibres are attached at regular intervals for tuna. Hook No.3 & 4 are used for seer and 6 and 7 for tuna. Some of the catamarans are provided with a small outrigger which enables to operate 3 to 4 lines at a time. The troll line fishing has emerged as an important commercial fishing in the southwest and southeast coast of India.

The Central Institute of Fisheries Technology also contributed to the improvement of the troll line gear and method through extensive investigations conducted between 1964 to 1969. The line was made of hard twisted nylon rope of 3 mm diameter and brass swivel with snap was also attached at the end of the line. A jig with a short snood wire was inserted into the snap of the swivel. New type trolling jigs made of Buffalo horn, lead with feather, stainless steel and coloured plastic were introduced and the catch efficiency was also increased. Panicker & Sivan (1969) studied the selectivity of these jigs. Subramonia Pillai et al. (1970 & 1972) proposed favourable conditions for a successful troll line fishing and standardised different jigs.

**Troll line fishing in Lakshadweep**

Trolling is a very popular fishing method in the Lakshadweep islands for the capture of seer, tuna, barracuda etc. Both mechanised boats and local country craft with outboard engines are engaged for this fishing. The gear consists of 30 m long cotton rope (6 mm) and 20 m long (1.5 mm dia) monofilament twine. A jig is attached to the end of this monofilament twine through a short steel snood wire. The jig is made of lead and attached with coloured synthetic fibres or fibres of fresh coconut leaves. A single hook of the size no.2 or 3 is used. During the fishing operations a piece of fish is also attached with the hook to have more luring effect. Three to four such lines are operated at a time. Both surface and depth trolling are carried out depending on the availability of fish and period of operation. Trial fishing with troll lines employing double rig arrangements and new type jigs were introduced recently resulting in increased catch. Now the local fishermen come forward to operate these new jigs from their vessels.

**Strategies for future development**

Trolling is an important and well established fishing method in the artisanal sector. The efficiency of this method can be increased by adopting improved technique. The line is to be made of twisted nylon twine instead of monofilament so that the hauling of the line during the fishing will be easy. The line is to be provided with a brass swivel to avoid twisting of the lines during the operation. New type of jigs with welded double hooks developed at this Institute are to be popularised among the fishermen. More number of lines are to be operated from the catamaran by providing suitable outrigger system. The possibility of introducing the new jigs for trolling from catamaran at important fishing centres is being explored. The use of outboard engine is an added advantage for trolling. More over, trolling is an inexpensive fishing method, with good return.

**References**

Hornell, J. (1937) Fishing methods of Madras Presidency Report, 1, p.40
Jayaraj. M.(1985) in Harvest and post harvest Technology of Fish, p.105, Society of Fisheries Technologists (India), Cochin
Scofield, W.L. (1956) Fish.Bull. 103, Dept.of Fish and Game State of California
Subramonia Pillai, N. Manoharakodoss, R.S. & Sulochanan, P. (1972) Fish. Technol. 9, 68