

"ACHIL", A TACKLE FOR SARDINES

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Sardines are normally caught by gill nets and seine nets. Apart from these, several indigenous types of gears have been developed by fishermen to suit local conditions, which, though primitive and crude in appearance, are efficient in their own ways. 'Achil', a type of hand line, is one such gear developed and used to capture the lesser sardines and the rainbow sardines along the south-west coast of India between Varkkala and Cape Comorin. Since good results are obtained for the small cost (Rs. 3.50 per unit) and the little effort (one man-day only) the gear is used extensively by fishermen since 1972 in this stretch of the coast.

The Achil (Fig. 1A), consists of a main line (*Kankoose* or *trolle*) of about 2.5 to 4 m in length and a number of hooks, usually 25 to 45, tied to the main line at equal intervals of about 9 cm, is connected to a long (40 to 60 m), 2 mm thick hand rope. The length of the snood line connecting the hook to the main line is about 9 cm so that the two adjacent hooks do not get tangled at the time of operation. A conical iron weight weighing about 175 g is attached to the far end of the main line to enable the unit to sink in the water when released. The size of the hook used varies from No. 18 to 10 (35 to 70 mm length), depending upon the type and size of fish to be caught. Each hook is covered with an artificial bait (*minusum*) made of silk fibres of a particular colour (Fig. 1B). Normally blue, yellow, white, green and red are the colours used one after the other. For sardines (*Sardinella* spp. and *Dussumieria* spp.) green and white are preferred. Since red colour is said to attract unwanted forms like the puffer fishes, it is mostly avoided. Normally the hooks are replaced after 7 days of fishing and the baits after 3 days of fishing.

One to three units of Achil are generally operated from a catamaran or a small canoe; each line being operated by a single person. At a suitable site the achil is lowered to the depth where there is a probable concentration of fish. When the depth is reached the lowering stops and the rope is kept on shaking by jerks. The amount of fish caught on the Achil is felt by the tension on the rope while jerking. As soon as the fish are hooked the unit is hauled up into the boat very quickly allowing little time for the fish to escape. If many fish

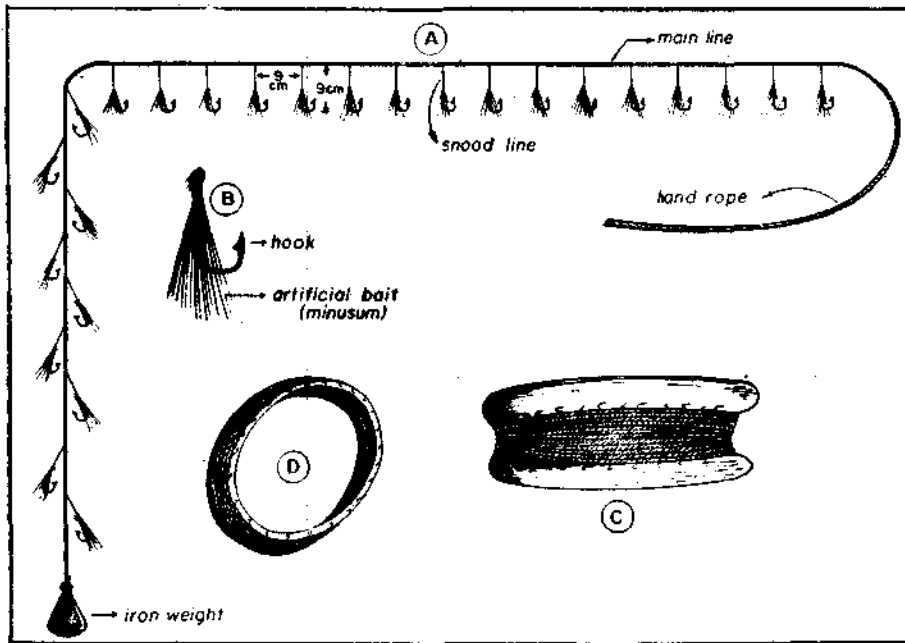


FIG. 1A. An *achil* unit showing the hook arrangement. B. A hook with the artificial bait. C. A piece of wood (*madayam*) in which the hooks are pinned. D. A circular frame made out of coconut leaf-stalk in which the line is wound by pinning the hooks.

are caught in a single haul the fish are removed starting from the distal most hook so that while removing the catch itself the unit can go on being released for the next haul. Like this up to 50 hauls are made per day. It is estimated that, during a good season, each unit brings on an average of 12 kg of sardine. The landings of sardines (lesser sardines and rainbow sardines) by Achil for the years 1972-77 at Vizhinjam are given by Luther et al (1982).

When the operation is over the line is wound round a circular frame of about 25 cm in diameter (Fig. 1D) made of coconut leaf-stalk in such a way the hooks do not interfere with the threads (see fig.). In some places it is wound on a soft rectangular *chillai* wood called *madayam* (Fig. 1C) and the hooks are pinned to the wood.

The Achil is operated approximately for six months, from May to October. The operating radius for the Achil is about 10 km from the shore, usually it is operated up to 80 m depth. However, the fishing grounds may shift according to the movements of the shoals. Fishing is conducted mainly during day time. Clear and unturbid water and bright sunlight are ideal conditions for lucrative fishing. Luther et al (1982) have reported the annual average C/E as 10.3 kg and the relative efficiency as 0.16 at Vizhinjam. Apart from the sardine (lesser

sardines and rainbow sardines), which form about 50 percent of its catch, other species such as: *Decapterus dayi*, *Rastrelliger kanagurta*, *Caranx crumnotthalmus*, *Odonus niger*, *Sufflamen capistratus*, *Pseudobalistes fuscus*, *Nemipterus japonicus*, and some perches are also caught by this gear.

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