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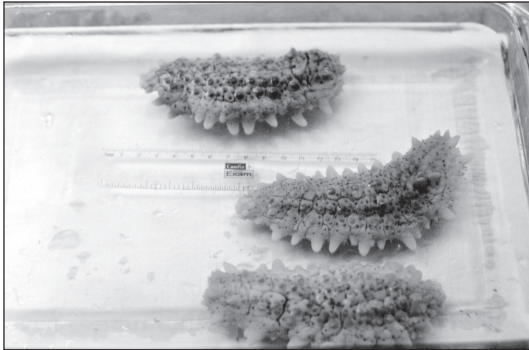
COCHIN, INDIA

(INDIAN COUNCIL OF AGRICULTURAL RESEARCH)

## Seasonal exploitation of the sea cucumber *Stichopus hermanni* (Semper) at Tuticorin

*Stichopus hermanni* earlier known as *S. variegates* is a widely distributed commercial species, popularly called 'pura attai' or 'pavaikya attai' in Tamil. This species, generally with a massive and quadrangular body having a colour which varies from dark

yellow to pale yellow with irregular brown patches and fleshy tubercles projecting along the sides (Fig. 1). This is a common inhabitant of sea grass or algal bed with muddy bottom up to a depth of 10-16 m. The occurrence of young ones of this species (100 - 200 mm) in

Fig. 1 *Stichopus hermanni*

the *Cymadocea* beds of Gulf of Mannar area was reported earlier.

This species is considered to be low valued in the export market due to the tendency of the body wall to fall apart and disintegrate easily, while exposed to air after harvesting and during boiling. It is reported that in the Pacific region, the intestine and gonad from this species are considered as a delicacy among the locals and are eaten raw on the spot or squeezed into bottle and sold at AU\$ 3.00 per bottle. The taste is reported to be slightly metallic, similar to raw oysters.

In Peninsular Malaysia, this species is exploited for its medicinal properties. The raw product is traditionally processed to 'gamat oil' and 'gamat water' and recently as medicated balm, tooth paste and soap used in wound healing treatment of stomach ulcer and as a pain killer. Scientist from the university of Malaya reported on the pain killing, anti

Fig. 2 Drying of processed *Stichopus hermanni*

inflammatory and anti itching properties of this species. The excessive exploitation lead to the depletion of the resource, which is now declared as an endangered species. At present the industry depends on raw materials from other neighbouring countries.

At Tuticorin along the Kalavasal area, huge quantities of this species has been processed since 2004. It is reported that the fishery extends from May to July every year especially during the time of trawl ban as an alternate source of income for the fishermen. On an average, forty country boats are engaged in the fishery of the species every day, each craft with 7-10 skin divers are venturing to the sea in the early morning hours from 3.00 to 11 AM collecting the sea cucumbers at about 9-10 fathoms depth. An average of 500 sea cucumbers are being collected by each diver altogether constituting about 200, 000 sea cucumbers per day which

are stored in barrels and processed batch by batch. The length and weight of the collected specimens ranged from 85-190 mm with a mean of 131 mm and 37-120 g (67.6 g) respectively.

The collected specimens, after thorough washing to remove adhering sand and other extraneous particles are boiled in big aluminium vessels with intermittent stirring for an hour and are dried on coir mat or tarpaulin for 1 hr. The semi dried specimens are immediately salted in cement tanks for 24 hours. The salted specimens are boiled again for 1 hour and finally dried under sunlight for 3 days (Fig.2). The perfectly dried specimens are stored in air tight containers and sent to Keezhakarai for export. The count of the finished product is 250-300 pieces/kg, which amounted Rs. 280-300/- having a marginal profit of 35 paise per piece. The length and dry weight of the beache-de-mer ranged from 50-75mm (63mm) and 7-10 g (9.2g) respectively.

Though this species have already been recorded from Gulf of Mannar, the exploitation in huge quantities were never reported before. The recent development of the fishery of this species along Gulf of Mannar indicated its export potentiality as new resource. In many of the western countries, apart from its food

value as a rich protein diet (55% of dry weight) low in fat, sea cucumbers are valued for its medicinal properties. Recent findings indicated that sea cucumbers are rich in 'mucopolysacchrides' (substances used for building cartilage, hence will be helpful in reducing the arthritic pain) and 'saponins' (have antiinflammatory and anticancer properties) will have greater importance in the biomedical research. Recently the Japanese have patented for an anti H.I.V. drugs from a sea cucumber species. In India few works have been conducted on the biomedical aspects of sea cucumbers. Though the natural resources of sea cucumber are plenty, it has not fetched an acceptability in the domestic market either as a food product or for its medicinal applications. In many countries much of the non edible and commercially low valued species are being exploited for pharmaceutical aspects. The exploitation of commercially low valued *Stichopus hermanni* as a raw material for many medicinal properties is a classical example for our entrepreneurs to focus on this high potential resources.

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