

SOME ASPECTS OF PROCESSING AND QUALITY CONTROL OF *BECHE-DE-MER* FOR EXPORT

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ABSTRACT

This paper deals with some aspects of processing of *beche-de-mer* which will improve the quality and specification for export.

INTRODUCTION

There are about ten species of commercially important holothurians in the seas around India, but *Holothuria scabra* is the only species commercially exploited at present. Further the fishery is restricted to small pockets along Palk Bay and the Gulf of Mannar. James (1986) wrote on the factors that improve the quality of *beche-de-mer*. Eys (1986) and Sachithanathan (1986) gave good accounts of *beche-de-mer*.

Sea-cucumber is considered as a delicacy in most southeast Asian countries where ethnic Chinese communities exist. The markets for dried sea-cucumber are concentrated in Asia with Hongkong and Singapore as major import and re-export countries. In general, there appears to be renewed interest during the last decade. The FOB value of export of *beche-de-mer* rose steadily from Rs. 1.1 million during 1982-83 to Rs. 7.8 million during 1987-88. Quantity-wise, the export of *beche-de-mer* increased from 19 to 50 tonnes during the same period. This interest can be attributed to : 1. The need for an increase in foreign exchange income, 2. Entering of more number of small scale fishermen into processing of sea-cucumber, 3. Improved transport facilities, 4. Growing demand from major overseas markets, 5. Improved processing and marketing information flow; and 6. Enforcement of quality control inspection by Govt. of India from 1978.

SPECIFICATION FOR DRIED *BECHE-DE-MER*

Beche-de-mer is prepared from *Holothuria scabra*. The material should be properly dried until they have a moisture content 8 to 10%. The colour of the material shall be dark brown to black on the dorsal side and pale white on the ventral side. The dried *beche-de-mer* shall have characteristic shape and odour of the species and shall be free from any off odour.

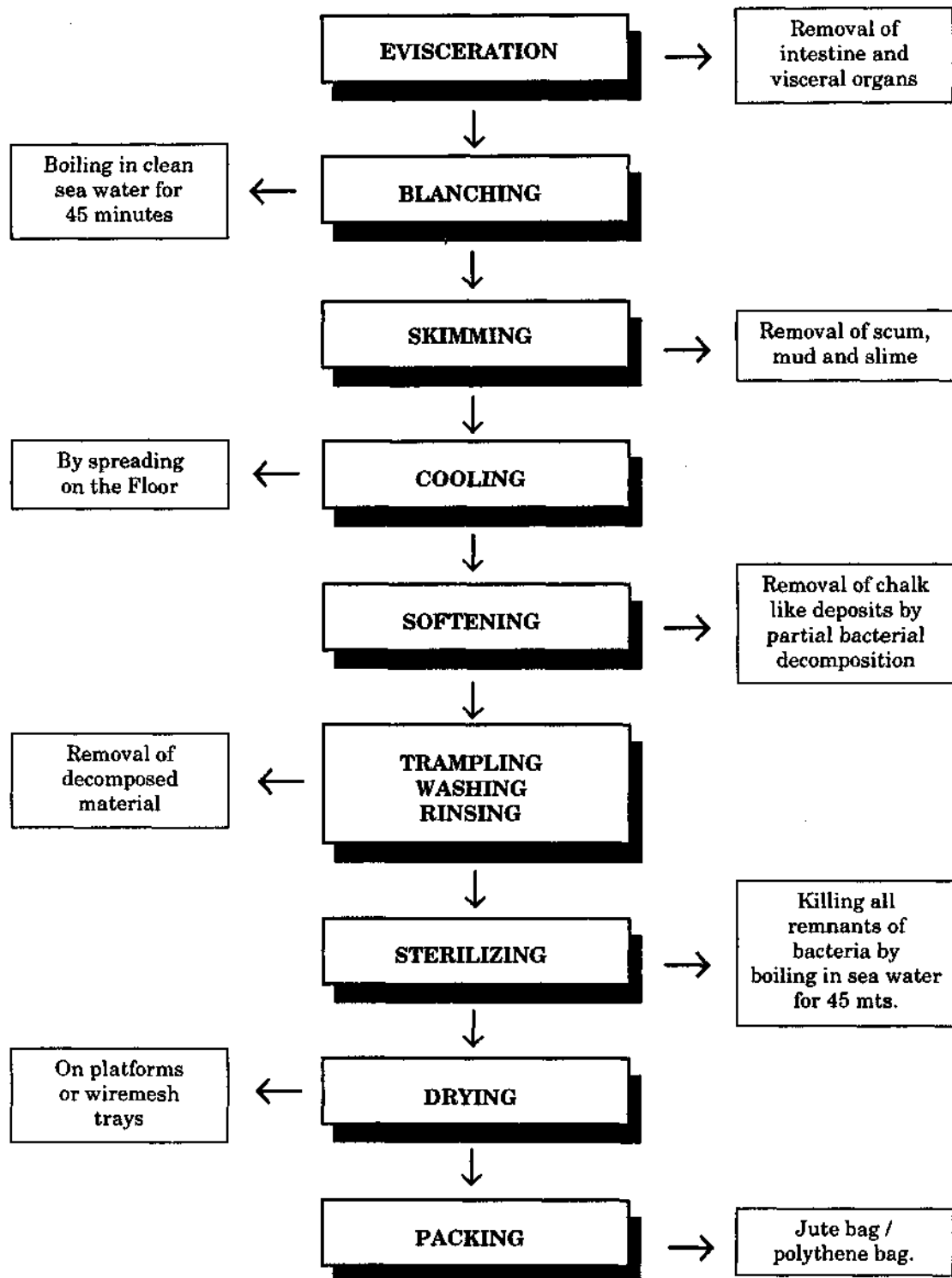
The ventral surface of the *beche-de-mer* is pigmented and has chalk like deposits - which should be removed to improve its market value. As such there should not be too much white pigment on the ventral side.

The material should be also free from any visible contamination, fungal, insects and mite infestation.

Only two grades of *beche-de-mer* are allowed for export i.e. 3" - 4" and 4" - 6". In a sample a tolerance of 5% by weight of the next higher or lower size grade along with broken ones shall be permitted. The material shall be packed in Gunny bags with inner polythene lining.

Export of sizes below 3" is banned from 16 August 1982.

The validity of Inspection Certificate for 60 days is calculated from Inspection date. Inspection fees is 0.5% of FOB value (Minimum Rs. 50/- per consignment).

BECHE-DE-MER PROCESS FLOW CHART

RAW MATERIAL HANDLING AND PROCESSING

It is true that once sea-cucumber is processed and dried, little can be done to alter its quality. Thus examination of dried products only permits acceptance of material reaching the desired standard. Hence efficient handling of raw material which fails to reach this standard. Hence efficient handling of raw material and processing are necessary to reduce losses during processing and improve the market value of the products.

Handling the raw material on board

As soon as the sea-cucumber is hauled up on board, a 2 - 3 cm slit is made near the cloaca. The body wall near the oral region is pressed in order to induce the animal to eviscerate, water is also squeezed out from the body by pressing. Immediately the sea-cucumbers are to be transferred to plastic boxes, with smooth inner surface and without drain holes. To prolong holding time in fish boxes sea water is added to the boxes and the water is to be changed every 12 hours.

Boiling the sea-cucumber

Sea-cucumber should be killed instantly by immersion in boiling sea water, to preserve its wholesomeness. For this purpose a cast iron pan is filled with sea water 2/3 of its height and it is allowed to boil. Then eviscerated sea-cucumbers are transferred to the boiling sea water one by one and heated for 45 minutes with stirring until each piece has attained elasticity like a rubber ball. During the process, scum, mud and slime are removed and the pan is refilled with clean sea water and reheated.

Burying the sea-cucumber

In a clean sandy beach a pit of 10 x 75 x 20 cm is made and cooled sea-cucumbers are arranged in a single layer with ventral side downward. Then the material is covered with a jute hessian sack and water is sprinkled over it and then closed with sand. After 15 - 18 hours the material is removed from the pit and transferred to a basket and partially decomposed outer body wall is washed away by

keeping in baskets in shallow water and trampling with feet. Water is repeatedly poured during the operation. After a final wash, the pieces without white pigment are separated and boiled in sea water for 45 minutes to kill all remnants of bacteria that decomposed the outer layer. The sea-cucumber at this stage is cylindrical in shape, rubber-like wrinkled and ash grey in colour.

Those pieces which may still have patches of white pigment undergo another round of boiling, burying and descumming, etc. The product is then transferred to drying platforms or wire mesh trays for sun drying. Sea-cucumbers should never be dried on sand. During rainy season drying can be done by smoking. However smoked products are not preferred in the export market.

Packing

On completion of processing, the product is graded on the basis of length, appearance, odour, colour and in some cases - pieces per kg. The material may be packed in polythene bags with outer jute sacks.

CONSERVATION

Processors/fishermen who intend to conserve the only exportable species from over exploitation may take note of the following suggestions.

Since juveniles of sea-cucumbers are found near the shore, fishing should be restricted to 2 - 5 m depth. The remarkable property of regeneration of lost organs during evisceration of holothurians can be better utilized by fishermen in conservation of these animals. Eventhough there is ban on the export of *beche-de-mer* below 3" length there is no restriction on the capture of small forms. As such fishermen should be educated to return the smaller animals to the sea.

CONCLUSION

Exporters seeking to improve their foothold in the International market for dried sea-cucumber may note the following suggestions.

Production should be in line with demand and requirements of the specific markets. There should not be mixing of species, different quality products and size grades. In view of the long

transport time involved, packing is important to guarantee high product quality particularly in respect of dryness and shape. Producers should use solar dryers, instead of smoke dryers.

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