ISSN 0254-380 X

MARINE FISHERIES INFORMATION SERVICE

No. 188

April, May, June, 2006

TECHNICAL AND EXTENSION SERIES

CENTRAL MARINE FISHERIES RESEARCH INSTITUTE

COCHIN, INDIA

(INDIAN COUNCIL OF AGRICULTURAL RESEARCH)

1174 Skin ulceration among the broodstock of *Holothuria scabra*

Holothuria scabra commonly called 'sand fish' is one of the most important commercial species. Indiscriminate exploitation and inadequate fishery management caused severe over exploitation of this species to an alarming level. Because of its wide distribution, amenable to mass seed production through hatchery system, it is being considered as one of the candidate species for stock enhancement programme in many countries. The availability of healthy broodstock and their maintenance are vital in determining the

success of holothurian hatchery system.

The hatchery operations of *H. scabra* at Tuticorin Research Centre mainly depend on the broodstock collected from wild, specially during the breeding season. So far, no suitable broodstock management protocol has been developed and the holothurians retained in the hatchery for long time often lose weight and the shrinkage of gonad render it to be unfit for the hatchery purpose.

In the Gulf of Mannar, holothurians are mainly collected by deep sea trawlers, by chanku madi, or thallu madi ie, a non-mechanized country trawler operating for short duration and also by skin diving. The quality, healthiness and liveliness of the specimens are best in the case of specimens collected by skin diving and often yield effective spawning also. Those collected from the trawlers are mostly in stressed condition and hence never used for breeding trials. Though the specimens from the thallumadi are in less stressed condition and not as good as that of skin diving, many times, used for hatchery purpose, as the most dependable source of the brooders. Such brooders often develop skin ulceration disease, which is hightly contagious and often causes mass mortality. Being a fishing method, skin diving is not a reliable source for the brooders all the time. Hence for continuous seed production, broodstock have to be maintained in the hatchery.

The initial symptoms of skin ulceration disease is the appearance of small white dots on the dorsal surface of the body (Fig.1) which expand slowly, causing severe mucous

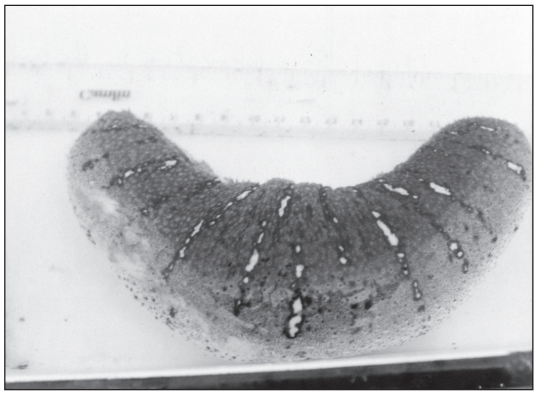

Fig. 1 Skin ulceration in the initial stages

production and leading to the shedding of mucoid and eroded tissues, loss of pigmentation and shrinkage of body etc. (Fig.2). Heavily infected specimen stops movement also. The infected specimens can

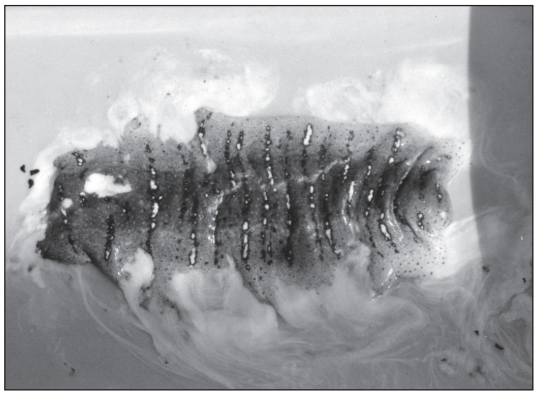

Fig. 2 Heavily infected specimen

be easily identified on the previous day itself from the severe wriggling movement and

shrinkage of the body exhibited by them.

Pathological studies indicated the presence of bacteria, *Streptococcus* sp. (100,000 CFU/ml). Sensitivity test indicated that the bacteria are sensitive to Chloramphenicol and Tobromucin. Observation of the infected tissue smear under the microscope revealed the presence of large fungi with branched hyphae and macrocondia revealed the possibilities of fungus infection too (Fig.3). The application of antibiotic (a mixture of Chloramphenicol and Oxytetracycline, 25 ppm each) is found to be effective for moderately infected specimens with frequent exchange of filtered sea water. Highly infected specimen will seldom respond to antibiotics and have to be discarded, as it is the only way to rescue the remaining ones. Recently in the hatchery such skin lesion disease has also been observed in hatchery produced juveniles of *H.scabra.* Small juveniles less than 5mm size were severely affected causing mass mortality.

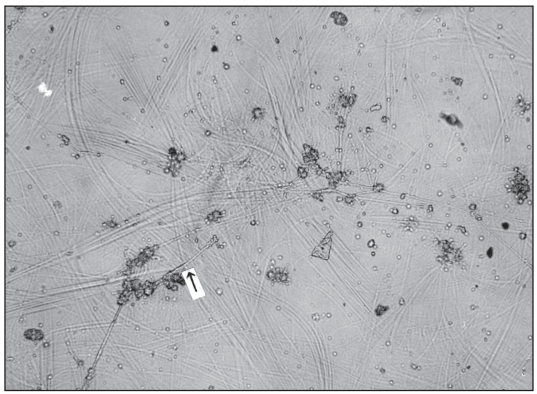

Fig. 3 Fungi with hyphae and macroconidia growing on an infected sea cucumber

So far no information is available on the disease on *H.scabra*, hence detailed epidemiological studies on the etiological agents, morphological, physiological, biochemical and pathological studie have to be conducted in future for effective broodsotck management in the holothurian's hatchery.

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