

## Sea Cucumber Pen Culture in the Northern Province of Sri Lanka

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**Abstract:** Worldwide increased demand for *beche-de-mer* encouraged overexploitation of wild stocks of tropical sea cucumbers and it has created motivation to sea cucumber aquaculture. Capture based sea cucumber aquaculture is completely a new experience to Sri Lanka. This research aimed to develop pen culture techniques for sea cucumbers and to familiarize fishing communities on sea cucumber aquaculture in Sri Lanka. Three pens were constructed in Gurunagar and Navanthurai lagoon area and one was constructed in the sea area at Mandaithivu in Jaffna district. Pens were constructed by using PVC net, blue shade net and with coconut planks. The size of each pen was 25m×25m. *Holothuria scabra* juveniles were collected and the net pens were stocked at a density of two individual m<sup>-2</sup>. The water temperature and salinity were measured in weekly intervals. The average water temperature remained in 30<sup>0</sup>C in all three sites. The bottom water salinity in Navanthurai site varied from 38<sup>0</sup>C to 39<sup>0</sup>C and other two sites shown similar salinity variation between 34<sup>0</sup>C to 35<sup>0</sup>C. The organic carbon content in Gurunagar, Navanthurai and in Mandathivu were 1.07%, 1.5% and 2.18% respectively. In the first four months the growth rates of *Holothuria scabra* at Gurunagar, Navanthurai and Mandaitheevu were 0.66gd<sup>-1</sup>, 0.96gd<sup>-1</sup> and 1.23gd<sup>-1</sup>. The highest growth rate shown by juveniles stocked in Mandathivu and lowest growth rate shown in Gurunagar site. In this period the survival rates were 100% at Mandthivu and Navanthurai sites and 68% at Gurunagar site.

**Keywords:** Sea cucumber, Pen Culture, Juveniles