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Effect of Stocking Density on the Growth, Survival, and Settlement of Sandfish Sea Cucumber (*Holothuria scabra*)

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ABSTRACT

The US Affiliated Pacific Islands of Micronesia have several commercially important species of sea cucumbers in their water including the sandfish sea cucumbers, *Holothuria scabra*. Due to their commercial importance, they have been widely exploited and are in the danger of being extinct.

The College of Micronesia Land Grant Program has undertaken the development of hatchery-based sandfish sea cucumber farming technology for local community based economic development, future commercialization, and restocking the depleted stocks in the wild.

In this regard, an experiment was conducted to find out the effect of different stocking densities on the growth, survival, and settlement of sandfish sea cucumber larvae. Larvae were stocked at 1000, 500, 250, and 125 larvae in triplicates in 15 liter buckets. The experiment was run for 20 days at the end of which growth, survival, and settlement were tabulated for each treatment. After spawning, the larvae were obtained from the spawning of 45 broodstocks which were retrieved from the wild. The larval rearing was maintained in 15 liter buckets with four replication (15,000, 7,500, 3,750 and 1,875) larvae in three buckets for each treatment. The buckets subsequently changed water after two days and were fed with proportion of algae based on the stocking density. The settlement rate was counted after 5 days when introduced algal plates. The results significantly show that the main factor affecting survival and growth is the stocking density and water environment. Therefore, the experiment should be continued to give evident results for which stocking density is more appropriate.

Key words: Growth, Survival, Settlement, Sandfish Sea Cucumber (*Holothuria scabra*)

50 Effect of Stocking Density on the Growth, Survival, and Settlement of Sandfish Sea Cucumber

Cantero, Nair, and Smith

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