UNIVERSITY OF THE PHILIPPINES VISAYAS
College of Arts and Sciences
Division of Biological Sciences
Miagao, Iloilo

Influence of Sediments of Varying Grain Size Composition on Growth, Survival and Burrowing Activity of the Ball Sea Cucumber, *Phyllophorus proteus* (Bell, 1884) Juveniles

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JAZRIEL ANN A. AMUENDA
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ABSTRACT

Phyllophorus proteus is a high value sea cucumber species in Philippines but is also one of the most exploited. Hatchery produced juveniles are used for stock enhancement as a means of restoring depleted population however biology of *P. proteus* have not yet been studied on. Burrowing incidence of ball sea cucumber *P. proteus* (Echinodermata: Holothuroidea) juveniles (4-5 length x ≤1mm width), growth, survival and their associated daily behaviour were compared in 3 different substrate collected from Sagay, Negros Occ. (A-mostly coarse), Panobolon, Guimaras (B-intermediate) and Carles, Iloilo (C-mostly fine). This was to establish the most suitable type of substrate to use in the culture system for this high value sea cucumber. The highest incidence of burrowing was observed in sediment profile C but the difference in the mean number of burrowing individuals between treatments was statistically insignificant ($p>0.05$). After 4 weeks, growth of *P. proteus* juveniles was significantly higher ($p<0.05$) when reared on profile C (growth rate: 0.79±.13mm %d-1) than either profile B ($p=0.009$) (0.34±0.14 mm %d-1) or profile A ($p=0.030$) (0.21±0.11mm %d-1). Survival is highest in profile B (S=100%), intermediate in profile C and lowest in profile A although the difference is insignificant ($p>0.05$) Very fine-fine grained sediments is the most preferred by ball sea cucumber juveniles while coarse sand seems to be unsuitable.