Setting baselines for large scale hatchery production of high value tropical sea cucumber *Holothuria scabra* (Jaeger 1833) in Zanzibar, Tanzania

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Abstract:

Artificial propagation of *Holothuria scabra* has become relevance in Tanzania since the wild stock has already dwindled and no significant improvement has been reported after more than a decade of total moratorium. The first successful spawning induction of *H.scabra* is reported in Tanzania and baseline information is provided. Broodstocks purchased from Pemba Island were significantly bigger than those from Unguja with an average weight of 479.554±13.693g (SE) and 249.107±4.366g (SE) respectively. Packing one individual in 1L plastic bag or several (up to 35) in 50L plastic bag worked well during transportation of brooders. A combination of thermal shock, food stimulation and dry treatment was more efficient in inducing spawning than thermal shock alone. The finding shows *H.scabra* can be induced to spawn throughout the year in Tanzania which will insure the availability of seed all year around. Embryonic development and larvae rearing was achieved at 26-30 salinity and larval development was short when rearing temperature was 25-28^{0} and initial algal concentration was 20000cell/ml. Non-feeding larvae stage was attained 10 days post fertilization and juvenile reached 35mm in less than two months. The average hatching rate was 58.8% and average survival rate from auricularia to 1-10mm juvenile was 2.2%.

Key Words

Sea cucumber, *Holothuria scabra*, Hatchery, Auricularia, Doliolaria, Pentactula, Micro-algae and Benthic diatom.