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COLLEGE OF ARTS AND SCIENCES
Division of Biological Sciences
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**EFFECTS OF pH AND SALINITY ON GROWTH AND SURVIVAL OF
JUVENILE SEA CUCUMBER *Holothuria scabra* (JAEGER, 1833)**

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CHRISTIAN MALABUYOC ABAGAT

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Holothuria scabra (Jaeger, 1833)**

ABSTRACT

Sea cucumber aquaculture could provide a solution to both enhance declining wild sea cucumber populations through restocking, and provide sufficient *beche-de-mer* product to satisfy the increasing Asian market demand. The growth and survival of hatchery-reared *Holothuria scabra* juveniles at different pH-salinity levels were investigated. Juveniles were exposed for 14 days in six pH-salinity levels: Trt 1 (pH 6.5 – 6.7, 26-28 ‰), Trt 2 (pH 6.5 – 6.7, normal salinity), Trt 3 (pH 7.0 – 7.2, 26-28 ‰), Trt 4 (pH 7.0 – 7.2, normal salinity), Trt 5 (normal pH , 26-28 ‰) and Trt 6 (normal pH , normal salinity) as the control. Multivariate analysis of variance (MANOVA) with repeated measurements revealed that pH and salinity had a significant effect on growth (length, width and weight) and survival of *H. scabra* juveniles. Slight seawater desalination combined with high acidification (pH: 6.5-6.7) had lethal effects on *H. scabra* juveniles. While *H. scabra* juveniles could be reared in seawater with pH $\geq$ 7.0-7.2 and salinity $\geq$ 26-28 ‰, ambient seawater conditions remained the most suitable in rearing *H. scabra* juveniles for optimum growth and survival.

Keywords *Holothuria scabra* • Sea cucumber • pH • Acidification • Salinity • Desalination • Growth • Survival