

Reproductive timing of *Neopetrosia compacta* in Bolinao, Northwestern, Philippines

Maxine Stephanie M. Prado*¹, Muhammad Azmi Abdul Wahab² and Maria Vanessa Baria-Rodriguez¹

¹The Marine Science Institute, University of the Philippines, Diliman, Quezon City 1101, Philippines.

²Australian Institute of Marine Science, Indian Ocean Marine Research Centre, University of Western Australia (M096), 35 Stirling Highway, Crawley, WA, 6009, Australia.

Abstract

Reproduction in marine sponges remain poorly understood despite their known significance as melting pot of important biomedical compounds. Particularly in the Indo-Pacific, with noted high sponge diversity, existing studies in sponge reproduction is limited. In this study, sexual reproductive features particularly the onset and timing of gametogenesis in relation to temperature of the cryptic yellow demosponge *Neopetrosia compacta* were investigated. Sponge samples (N=10, minimum) were collected monthly and dissected from November 2020 to March 2022 in Lucero, Bolinao, Pangasinan from tagged and random individuals. Temperature loggers were also deployed over the course of the study to collect for temperature data. Results show that reproductive individuals were detected almost throughout the sampling period with increasing detection as seawater temperature rises. Gametes begin to appear more frequently starting April 2021 with peak of gametogenesis recorded in June 2021 with more than 70% of collected individuals with present reproductive propagules. Coincidentally, this is also the same month with the highest recorded seawater temperature in the site at 30.6°C. Moreover, *N. compacta* most likely exhibit a viviparous mode of reproduction. Learning the timing and patterns as well as determining environmental cues that influence reproduction in sponges will further enhance applications that could facilitate technologies which may increase its biomass for pharmaceutical explorations.

Keywords: cryptic sponge, viviparous, *Neopetrosia compacta*, temperature, gametogenesis

***Corresponding author. Email: maxprado@msi.upd.edu.ph**