

Nastiti Intan Permata Sari, 2015. Perbandingan Biologi Reproduksi Teripang *Paracaudina australis* dari Selat Madura Pada Periode Bulan Februari-April 2013 dengan Februari 2012-Januari 2013. Skripsi ini di bawah bimbingan Dr. Dwi Winarni, M.Si dan Sugiharto, S.Si, M.Si Departemen Biologi, Fakultas Sains dan Teknologi, Universitas Airlangga, Surabaya.

ABSTRAK

Penelitian ini bertujuan untuk mengetahui beberapa aspek biologi reproduksi teripang *Paracaudina australis*, yaitu aktivitas reproduksi berdasarkan indeks gonad, penentuan puncak pemijahan, pola reproduksi, rasio jenis kelamin, fenomena *undetermined sex*, dan pengaruh kondisi lingkungan terhadap aktivitas reproduksi. Sampel teripang diambil dari Selat Madura 07°15'36,40" - 07°30'21,98" LS, dan di antara 113°6'29,86" - 112°54'17,65" BT tiap bulan pada bulan Februari, Maret, dan April 2013 masing-masing sebanyak 25 sampel sehingga diperoleh total 75 sampel. Sampel *Paracaudina australis* dibedah dan ditiriskan kemudian ditimbang berat dinding tubuh dan berat gonad untuk memperoleh data indeks gonad (IG). Gonad difiksasi dalam *neutral buffered formalin* dan diproses menjadi sediaan histologi dengan metode parafin dengan pewarnaan Hematoxylin-Eosin. Tahap kematangan gonad dan rasio jenis kelamin ditentukan berdasarkan pengamatan histologi. Data indeks gonad bulan Februari-April 2013, Februari-April 2012, dan Februari 2012-April 2013 diuji dengan Anava searah. Hubungan antara berat dinding tubuh dan berat gonad pada teripang *undetermined sex*, serta antara kondisi lingkungan (suhu dan curah hujan) dianalisis dengan uji korelasi Pearson. Uji statistik dilakukan pada $\alpha=0,05$. Hasil penelitian menunjukkan bahwa tidak ada perbedaan yang bermakna indeks gonad selama 3 bulan pengamatan (Februari, Maret, dan April 2013), dan hasil yang sama terhadap indeks gonad bulan yang sama di tahun 2012. Tidak ditemukan adanya puncak pemijahan, pemijahan terjadi sepanjang tahun dengan peningkatan aktivitas reproduksi pada bulan kering. Tahap kematangan gonad di tingkat individu adalah sinkron dan tahap kematangan gonad di tingkat populasi adalah asinkron. Rasio jenis kelamin jantan dan betina mendekati 1:1. Adapun fenomena *undetermined sex* terjadi setelah diferensiasi gonad.

Kata kunci: teripang, *Paracaudina australis*, indeks gonad, puncak pemijahan, rasio jenis kelamin, *undetermined sex*, curah hujan

Nastiti Intan Permata Sari, 2015. Reproductive Biology Comparison of *Paracaudina australis* Sea Cucumber from Madura Strait on February-April 2013 period with February 2012-January 2013. This study was under supervision of Dr. Dwi Winarni, M.Si and Sugiharto, S.Si, M.Si Department of Biology, Faculty of Science and Technology, Airlangga University, Surabaya.

ABSTRACT

*This study purposed to study several including reproductive biology aspects of *Paracaudina australis* sea cucumber, including reproductive activity based on gonadal index, determination of reproductive peak, reproductive cycle, sex ratio, undetermined individuals, and effect of area condition to reproductive activity. Sea cucumber samples were taken from Madura strait at 07°15'36,40" - 07°30'21,98" LS, and 113°6'29,86" - 112°54'17,65" BT on February, March, and April 2013. Each month 25 samples were collected, so sample total was 75 individuals. *Paracaudina australis* samples were dissected and leaked, and then body wall and gonad were weighted for gonadal index (IG). Gonad was fixated on neutral buffered formalin and processed into histological slide using paraffin method which then stained with Hematoxylin-Eosin. Gonadal maturation phase and sex ratio was determined based on histological observation. Gonadal index at February-April 2013, February-April 2012, and Februari 2012-April 2013 were tested statistically with One Way Anova. Correlation of body wall and gonad weight on undetermined individuals, and areal conditions (rainfall) were analyzed using Pearson correlation test. All of statistic test were done at $\alpha=0.05$. Result of this research refers no significant difference of gonadal index on three observation month (February, March, and April 2013), and the result was the same with gonadal index on the same observation month at previous year. Reproductive peak was not found within observation period, reproductive activity happened all year long with increased activity occurring at dry month. Gonadal maturity phase on individual level was synchronous and on population level was asynchronous. Sex ratio of male and female were approaching 1:1. Undetermined sex occurred after gonad differentiated.*

Keywords: *sea cucumber, *Paracaudina australis*, gonadal index, reproductive peak, ratio sex, undetermined sex, rainfall*