

BIOLOGI DAN PENGELOLAAN IKAN JULUNG-JULUNG (*Hemiramphus* spp.) DI PERAIRAN LAUT PULAU BURU BAGIAN UTARA KABUPATEN BURU, MALUKU

Intisari

Penelitian ini bertujuan mengetahui jenis ikan julung-julung secara taksonomi, biologi perikanan, sosial ekonomi nelayan dan pengelolaannya. Identifikasi biologi dilakukan dengan pendekatan morfologis dan molekuler. Karakterisasi morfologis dilakukan dengan metode morfometrik, meristik dan kunci identifikasi ikan Hemiramphidae. Karakterisasi molekuler dengan metode analisis DNA, melalui penyelaraskan hasil sekuensing DNA dengan data serupa di *genbank*. Pohon filogenetik dan jarak genetis diatur dengan *software* MEGA X. Perbedaan jantan dan betina dideterminasi berdasarkan bentuk gonad, hubungan panjang berat berdasarkan persamaan kubik $W = aL^b$ merujuk Le Cren (1951) dan nilai b sebagai kriteria tipe pola pertumbuhan ikan. Faktor kondisi ikan dihitung dengan formula $Kn = W/aL^b$ merujuk Froese (2006). Pengamatan makroskopis gonad menentukan tingkat kematangan gonad. Telur dihitung dengan metode jumlah dan diameter telur menggunakan mikroskop stereo dan *optilab*. Jumlah rata-rata telur gonad kiri dan kanan berbanding berat gonad dinyatakan sebagai fekunditas. Data frekuensi panjang total digunakan untuk pendugaan L_∞ , K , mortalitas total Z , mortalitas alami M , mortalitas penangkapan F dan laju eksploitasi E dengan *softprogram* FISAT 2. Data produksi ikan dari tahun 2015-2021 untuk analisis CPUE dan pendugaan potensi sumber daya ikan. Hasil penelitian menunjukkan sampel ikan julung-julung di lokasi penelitian adalah dari jenis *Hemiramphus lutkei*, dengan proporsi jantan 58,45% dan betina 41,55%, tipe pola pertumbuhan allometrik negatif, dan sebagian besar memiliki kesehatan intrinsik normal. Berdasarkan analisis TKG ditemukan ikan dengan kategori matang gonad (fase 3 dan 4) berturut-turut jantan sebanyak 80%, betina 59%, gabungan jantan betina 71%, dan ikan betina yang telah memijah (fase 5) sebanyak 37% dengan tipe pemijahan *multiple spawning*. Parameter pertumbuhan L_∞ dan K dari jantan 32,00 cm dan $1,2^{-yr}$; betina 34,03 cm dan $1,1^{-yr}$; jantan betina 34,00 cm dan $1,8^{-yr}$. Tingkat pemanfaatan sumber daya ikan telah mencapai eksploitasi penuh ($E=0,83$) oleh karena itu diperlukan tindakan pengelolaan untuk mendorong perikanan julung-julung berkelanjutan. Pengelolaan dilakukan di hulu dan di hilir. Pengelolaan di hulu melalui tindakan teknis penangkapan yang disesuaikan dengan waktu pemijahan *H. lutkei*. Pengelolaan di hilir melalui edukasi dan pemberdayaan kepada *jibu-jibu* untuk dapat memanfaatkan jenis ikan pelagis lainnya yang memiliki potensi ekonomi sebagai bahan baku ikan asap.

Kata kunci: *biologi, hemiramphus, pengelolaan, pulau Buru, Maluku*

THE BIOLOGY AND MANAGEMENT OF JULUNG-JULUNG FISH (*Hemiramphus* spp.) IN THE MARINE ENVIRONMENT OF NORTHERN BURU ISLAND BURU REGENCY, MALUKU

Abstract

This study aims to understand the taxonomic classification of *Hemiramphus* spp., commonly referred to as *julung-julung* fish, fisheries biology, socio-economic conditions of fishermen, and management related to the *Hemiramphus* spp. The research employs both morphological and molecular approaches for biological identification. Morphological characterization was performed using morphometric and meristic methods, along with the identification key for *Hemiramphidae* fish. Molecular characterization was conducted using DNA analysis methods, including aligning DNA sequencing results with similar data from GenBank. Phylogenetic trees and genetic distances were generated using MEGA X software. Male and female differences are determined based on their gonad shape, weight length relationship based on cubic equation $W = aL^b$ referring to Le Cren (1951) and b value as criteria for fish growth pattern type. The condition factor of the fish is calculated by the formula $Kn = W/aL^b$ based on Froese (2006). Macroscopic examination of the gonads was used to assess their maturity stage. Egg counts and measurements of egg diameter were performed using stereo microscopes and optilabs. Fecundity was determined by calculating the average number of eggs in the left and right gonads relative to the gonad weight. Total length frequency data were used for estimation of L^∞ , K , total mortality Z , natural mortality M , fishing mortality F and exploitation rate E with FISAT 2 software. Fish production data from 2015-2021 are used for CPUE analysis and estimation of fish resource potential. The results showed that the samples of *julung-julung* fish at the study site were from the type of *Hemiramphus lutkei*, with a proportion of males 58.45% and females 41.55%, with negative allometric growth pattern types, and most had normal intrinsic health. Based on the analysis of gonadal maturity levels, it was found that fish with gonadal maturity categories (phases 3 and 4) were 80% for males, 59% for females, and 71% cumulative for female-males, with 37% spawning females (phase 5) at multiple spawning types. The L^∞ and K growth parameters of males were 32.00 cm and 1.2^{-yr} ; females 34.03 cm and 1.1^{-yr} ; cumulative males and females at 34.00 cm and 1.8^{-yr} . The utilization rate of fish resources has reached full exploitation ($E=0.83$); therefore, management actions are needed to encourage sustainable fisheries. Management is carried out upstream and downstream. Upstream management involves adaptation of fishing technique to be aligned with *H. lutkei* spawning season, while downstream efforts focus on educating and empowering *jibu-jibu* to utilize other economically valuable pelagic fish as raw materials for smoked products.

Keywords: *biology, Buru Island, hemiramphus, Maluku, management*