

Characteristics of population growth and mortality of windu shrimp (*Penaeus monodon*) in the Juata water of Tarakan City, Indonesia

ABSTRACT

The windu shrimp (*Penaeus monodon*) is an economically important fishery species in the waters of Tarakan. The shrimp is highly demanded for frozen seafood industry that makes its market price range attractive from Rp. 50,000 (USD 3.37) to Rp. 70,000 (USD 4.72)/kg. This can cause the species to be potentially exploited. However, due to lack of data, the exploitation status of the windu shrimp is unknown. Hence, the present study was carried out to determine the absolute growth, mortality, and exploitation level of the windu shrimp in Juata waters of Tarakan. Sampling of the shrimp using experimental trawling net was conducted four times between June and August 2020 in the waters of Tarakan. Morphometric data of the windu shrimps including sex, total length, carapace length, and total weight were recorded and analyzed. The results showed that the sex ratio of male and female tiger prawns was 1:1.08. The maximum growth of male and female shrimps was estimated at 26.875 and 21.435 cm respectively. The size of the male shrimps caught during the sampling ranged between 8.7 and 22.5 cm, and was estimated to be at 13 to 67 days old respectively. Maximum growth of male shrimp was estimated at 26.875 cm that could be achieved within 411 days. The size of female shrimp caught during the sampling ranged from 9.8 to 19.3 cm with an estimated age of 21 to 87 days respectively. The maximum growth for female shrimp was estimated at 21.435 cm, and achievable within 377 days. The mortality of male and female shrimps was not significantly different at 110.3% and 110.1% respectively. The fishing mortality for male and female shrimps was recorded at 19% and 22.5% respectively. The level of exploitation of male and female shrimps was slightly different at 17.2% and 20.5%, respectively. Finally, the natural mortality for male and female shrimps was estimated at 91.3% and 87.5%, respectively.