Reproductive biology of the sergestid shrimp Acetes indicus (Decapoda: Sergestidae) in coastal waters of Malacca, Peninsular Malaysia

ABSTRACT

The sex ratio, maturity, and spawning season of the sergestid shrimp Acetes indicus were determined by analyzing samples collected from coastal waters of Klebang Besar, Malacca between Apr. 2006 and Mar. 2007. The overall annual sex ratio of A. indicus was found to be 1: 2.10 (males: females). The annual variation in the gonadosomatic index (GSI) showed continuous breeding of A. indicus throughout the year. The size at sexual maturity of female A. indicus was 23 mm TL. No females with spent ovaries were found among the samples during the study period. The estimated mean fecundity of A. indicus was 1666.30 ± 262.10 (range, 1135-2235) eggs. The mean monthly GSI in females showed positive and significant ($p < 0.05$) correlations with conductivity ($r = 0.67$), salinity ($r = 0.65$), and total suspended solids ($r = 0.59$). However, no significant correlation ($p > 0.05$) was found for the mean monthly GSI with temperature or dissolved oxygen. This suggests that A. indicus may be adapted to a wide range of conditions in tropical and subtropical regions.

Keyword: Acetes indicus; Maturity; Spawning season