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GONADAL MATURATION STAGES OF PINK-FINGERED VINEGAR CRAB, *Episesarma chengtongense* (SERENE AND SOH 1967), FROM CAPIZ, PHILIPPINES

A Special Problem

Presented to

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ABSTRACT

Pink-fingered vinegar crab is a nocturnal, burrow-dwelling, and tree-climbing crab that feed on mangrove leaf litters and foliage. This crab is a growing fishery resource in the Philippines and plays an important role in the nutrient cycling in mangrove areas. To determine the reproductive biology of this species, a one-year study was conducted to monitor the gonadal maturation stages of the pink fingered crab from President Roxas, Capiz. Collection of samples was done every first week of the month from February 2015 to January 2016. The determination of the gonadal maturation stages was done through the visual examination of the gross morphology and microscopic examination of the histological characteristics of the male and female gonads. A total of 425 (263 females, 162 males) crabs were dissected. Five stages of ovarian maturation were identified based on visual examination of ovaries, namely Immature (Stage I) with translucent to white colored gonad; Developing (Stage II) with a yellow colored gonad; Ripe (Stage III) with orange colored gonad; Mature (Stage IV) with two substages, the Early mature (Substage A) with brown colored gonad and Late mature (Substage B) with dark brown colored gonad and; Spent (Stage V) with light brown colored gonad. Microscopic examination of the ovaries revealed that ovary in Stage I is characterized by the presence of germinative zone composed of oogonia and maturation zone composed of previtellogenic oocyte, surrounded by randomly distributed follicle cells. Ovary in Stage II is composed of few oogonia, previtellogenic cells, and few endogenous vitellogenic oocyte on the periphery of the ovarian lobe. Ovary in Stage III is composed of dominant exogenous vitellogenic oocyte located outer the few endogenous vitellogenic oocyte. Ovary in Stage IV-A is composed of nearly mature oocyte while in Stage IV-B is composed of mature oocyte. Ovary in Stage V is composed of all cell types, disarrayed in the entire ovarian lobe. Two stages of male gonadal maturation were identified namely Immature (Stage I) with translucent testes that is composed of spermatogonia and spermatocyte when histologically examined and Mature (Stage II) with white testes that is composed of small, darkly staining spermatids. Size of female crab samples ranged from 26 to 48.1 mm carapace width (CW) while male crabs ranges from 26 to 47 mm CW. The smallest ovigerous female has 29 mm CW and the smallest male with mature gonad has 26 mm CW. Body sizes of ovigerous females were from 29 to 42.3 mm CW. The greatest prevalence of ovigerous females was in the size range of 30 to 34 mm CW. The highest percentage of the mature stage (Stage II) in male was in the size range of 45 to 49 mm. For females, the peak egg bearing season was May (87%) and September (92%). On the other hand, male crabs with mature testes were consistently high (70 to 100%) in all months of the year. The results indicated that the months of May and September should be declared off season in the capture of female crabs ranging in size from 25 to 44 mm CW. Only big females in the size range of 44 to 49 mm CW could be harvested. Likewise, also male crabs in bigger size range of 45 to 49 mm CW could be harvested. This is necessary to protect and conserve the existing population of this crab.