

Abundance and reproductive seasonality of *Stomopneustes voriolaris* (Black sea urchin) in East and South coasts of Sri Lanka

D.G.T.C. Balawardhana, H.B.U.G.M. Wimalasiri* and S.S.K. Haputhantri

National Aquatic Resources Research and Development Agency (NARA), Crow Island, Colombo 15, Sri Lanka

Sea urchins are one of the most common macro-grazers found in rocky shore systems. The gonads of the sea urchins known as roe are a culinary delicacy prized in many countries. To study spatial distribution, abundance and biology of edible sea urchins found in Sri Lanka, a study was conducted from February to December 2018 in the East (Pulmudei and Trincomalee) and South (Midigama, Kottegoda, and Nilwella) coasts. The study was carried out using random transect sampling method and transects were laid vertical to shoreline with the length varying from 5 m - 20 m. At the field, a quadrat of 0.5 m x 0.5 m was laid along transects and all the sea urchins were counted within the plot. A total of 13 sea urchin species belonging to six families were identified in this survey and among these species, black sea urchin (*Stomopneustes voriolaris*) was identified as the most abundant species in both these regions. The highest black sea urchin abundance was recorded at Midigama (20 individuals/m²) and the lowest was recorded at Sallikovila (Trincomalee) (8 individuals/m²). Total body wet weight and gonad wet weight were recorded. Gonado Somatic Index (GSI) was calculated to identify the spawning seasonality. The GSI of black sea urchins was found to vary periodically suggesting an annual cycle of reproduction. But they have peaks in November to December in Matara and April and August in Trincomalee. This type of variation could be due to the difference of populations of the same species and environmental variability. Length-weight relationship of black sea urchin shows a negative allometric growth. Exploitation of the wild stock of black sea urchin could be attempted while ensuring the sustainability of the resources. Results of the present study could be utilized for formulating a sound management plan while developing the fishery.

Keywords: sea urchin, GSI, Sri Lanka

*Corresponding author- email: udeshikawimalasiri@nara.ac.lk