Impact of artificial aggregating devices on the production of bigfin reef squid (*Sepioteuthis lessoniana*) in the coastal seas in Northwestern Province of Sri Lanka

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This research was focused on enhancement of export oriented fishery products of squids as they are considered as important food fish to country's social and economic life. Among many exported seafood varieties, the volume contribution by squid is modest at present. Among different squids, bigfin reef squid (*Sepioteuthis lessoniana*) fetches a high price both in local and export markets. Over the recent past, a declining trend in abundance of bigfin reef squid and also destruction of preferred substrates for spawning in the coastal waters has been noted by the local fishermen. Traditional fisheries in some parts of the country affix deployed clusters of mangrove twigs and submerging them at sea for three to five days as squid aggregation devices for them to mate and spawn and thereby improve the abundance of squids for jigging. But, submerging mangrove twigs is considered as an environmentally destructive fishing practice. The present study was conducted by deploying artificial aggregated structures made of iron for fish aggregation and squid eggs attachment. Study was conducted from November 2016 to May 2017 in the coastal sea off Sinnapaduwa. The artificial aggregating devices were set up at three different water depths (10 m, 15 m and 20 m) in twelve locations. Squid egg attachment on aggregator devices and also other species associated with the devices deployed at three different depths were visually monitored by employing SCUBA divers. Monitoring results show that, presence of squid eggs in nine locations and results of analysis showed that presence of squid eggs were significantly different between 10 to 15 m ($p<0.05$) depth and 10 to 20 m ($p<0.05$) depth while there was no significant difference in the presence of squid eggs between 15 to 20 m depth ($p>0.05$). Therefore, depths of the attractor from water surface have a significant effect on squid egg attachment in attractor.

Keywords: spawning, bigfin squids, artificial aggregating devices, squid eggs

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