Artificial breeding and larval rearing of *Pseudocolochirus violaceus* (Sea apple cucumber) in Sri Lanka

P.A.D. Ajith Kumara*, J.S. Jayanatha, J. Pushpkumara and D.C.T. Dissanayake
National Aquatic Resources Research and Development Agency (NARA), Crow Island, Colombo 15, Sri Lanka.

Pseudocolochirus violaceus (Sea apple cucumber) is a very colourful sea cucumber species restricted to the Indian and western part of the Pacific Oceans. In Sri Lanka, this species can be found off the northern and eastern coasts associated with hard surfaces at a depth around 30 – 40 m. *P. violaceus* is listed as a protected species under the Fauna and Flora Protection Ordinance in Sri Lanka. However, this is widely used in the marine aquarium industry in other countries. Twenty wild collected *P. violaceus* brooders were induced through the application of several methods. A combination of thermal stimulation and addition of increased quantities of microalgae was found to be the most successful method. Two successful artificial breeding trials were carried out in April and May 2012 and around 0.52 and 0.09 million eggs were produced in each trial respectively. *P. violaceus* has separate sexes and the larval development stages seem to be much similar to the development stages of other sea cucumber species. After fertilization, the cleavage starts and it is complete and holoblastic. The blastula stage occurs within an hour after fertilization and develops to a typical gastrula stage after one day. Non-feeding doliolaria stage appears around 13-14 days and they attained an average length of 1 cm after four months. Feeding of the larvae was started two days after fertilization and the larval stages as well as juveniles were fed with microalgae including *Chaetoceros spp.* High mortality rates were observed at the end of the larval rearing process and the percentage survival ranged from 3-5%. This is an important initiation to restore the wild population. However, more research needs to be done to develop this process, as this is the first attempt of artificial breeding and larval rearing of *P. violaceus* in Sri Lanka.

Keywords: *Pseudocolochirus violaceus,* artificial breeding, larvae

*Corresponding author e –mail: padajithkumara@yahoo.com