

Marcia opima (Gmelin, 1791)

Biji Xavier

IDENTIFICATION

Order	: Venerida
Family	: Veneridae
Common/FAO Name (English)	: Venus shell



Local names: Njavala kakka (Malayalam)

MORPHOLOGICAL DESCRIPTION

Marcia opima has a small, glossy, puffed-up shell which ranges from a creamish-brown to grey colour. There are radial dark markings on the shell running from the umbo to the shell margin. Inner surface of the shell is white. Hinge has three teeth and a long ligament. Anterior lateral teeth is absent in left valve, but corresponding depression is present on the right valve.



PROFILE

GEOGRAPHICAL DISTRIBUTION

The species is distributed in Indo-Pacific region from northwest Indian Ocean and the Aden Gulf to Indonesia. *Marcia opima* is abundantly present along the estuaries and backwaters of South India. It prefers river-mouths and is found burrowing in the mudflats of Gulf of Mannar, Ashtamudi and Kayamkulam Lakes, Ratnagiri, north Kanara, Bombay and Chennai coasts.

HABITAT AND BIOLOGY

It is found in muddy-sandy substratum at depths of 1 m. It prefers high salinity and is mostly seen near barmouths. Size at first maturity is 18-20 mm. Two spawning peaks are recorded, one in November-January and the other in May-June. Maximum shell length recorded is 58 mm. It grows to 26-33.8 mm in one year and life span is about 3 years. Sexual maturity is observed at size of 11-12 mm, when it is 3 months old.

BREEDING IN CAPTIVE CONDITIONS

The broodstock development, breeding and larval rearing of *Marcia opima* was carried out on an experimental basis at Tuticorin R. C. of CMFRI. Shells of 30-48 mm length collected from wild were used as brooders. They were fed with *Isochrysis galbana* and *Chaetoceros* sp. They were induced to spawn by raising the temperature to 32 °C for about half an hour. Diameter of the fertilized eggs ranged from 43 to 59 µm. The fertilized eggs and morula were collected in a 40 µm sieve and transferred to larval rearing tanks (1,000 l capacity), after passing through a 100 µm sieve for removing the debris.

LARVAL REARING

Larvae ('D' shape) were stocked at densities varying from 0.2-1.2 larvae/ml. Larvae were fed with *Isochrysis galbana* at concentration of 5,000 cells/larva/day. The early and late umbo stages were reached on 5th and 7th day, respectively. Subsequently, feeding was increased to 8,000 cells/larvae/day. Settlement started on day 9 and 10 post-fertilization. Settlement was completed by 11th day, when the larvae measured 273 x 260 µm. At settlement, feeding was increased to 10,000 cells/spat/day. On 18th and 20th day, feeding was gradually increased to 12,000 and 20,000 cells/spat/day, respectively. On day 45, the juvenile size varied from 1.7 mm to 3.4 mm.

NURSERY REARING

Information not available

GROW OUT

Information not available

FOOD AND FEEDING

It is a filter feeder, feeding mostly on marine phytoplankton.

GROWTH RATE

Information not available

DISEASES AND CONTROL MEASURES

Information not available

PRODUCTION

Information not available

MARKET AND TRADE

Good export market for frozen clam meat exists for *Marcia opima*. The shells are utilized for calcium carbide industry.

CHALLENGES TO MARICULTURE

Standardisation of seed production technology for mass scale propagation is a challenge. The main researchable issues, which have to be sorted out for this species in India, are (i) Larval rearing protocol: standardization of larval rearing by environmental and nutritional manipulation (ii) Nursery rearing protocols and (iii) Suitable farming methods.

FUTURE PROSPECTS

The species is having good local market demand as well as export value. However breeding and seed production as well as farming technology needs to be popularized further. Popularizing the technology already developed by CMFRI among fish farmers can go a long way in ensuring their livelihood security.

SUGGESTED READING

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