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INDUCED BREEDING OF THE INDIAN WHITE PRAWN PENAEUS INDICUS*

A steady supply of spawners is an essential requirement for effective planning of the operations in a penaeid prawn hatchery. Although all the culturable species of penaeid prawns grow in brackish water ponds, the females do not attain sexual maturity in this environment. In nature, the adults migrate from the brackish waters to the sea where they attain sexual maturity and spawn. Hence, the difficulty in obtaining the fully ripe spawners of the desired species from the sea as and when required, and the high cost of fishing and transporting them, are some of the main constraints in the development of hatcheries for large scale culture operations. To overcome this difficulty research is being undertaken in many countries to induce maturation of penaeid prawns under controlled conditions and to domesticate them. One of the techniques employed for the purpose is the ablation of the eye stalk in which the organs that secrete and store the gonad inhibiting hormones are situated. It has been tried with varying degrees of success on the tiger prawn by Alikunhi and his group at Jepara, Indonesia in 1975, Aquacop team at Polynesia in 1975, SEAFDEC at Philippines in 1978 and by Halder in India in 1978. This note reports the successful application of the method for inducing maturation in the Indian white prawn *Penaeus indicus* for the first time. The work was carried out at the Narakkal Prawn Culture Laboratory of the Central Marine Fisheries Research Institute, Cochin.

Pond reared *Penaeus indicus*, 30–38 mm in carapace length were used in the experiments. An electrocautery apparatus was used for eye stalk removal and the females were kept with an equal number of unablated males in 12′ diameter plastic pools fitted with a seawater recirculation system operated by air-lift pumps. They were fed with clam meat and mysids. Bilateral ablation of eyestalk which was tried initially resulted in very rapid maturation of the ovary but the prawns died without releasing the eggs. Then unilateral eye stalk ablation was tried and it proved very effective.

The results of the experiments carried out during the period October, 1978 to June, 1979 are summarised below.

The number of eye stalk ablated females	157
No. that attained full maturity	34
No. that spawned	28
No. of spawnings which gave rise to healthy larvae	22
No. of spawnings which resulted in unfertilized eggs	6

The females attained full maturity usually within 11–14 days after unilateral eye stalk ablation. The hatching rate (egg to nauplius) varied from 16.7 to 97.7%. Out of the 22 successful spawnings, 15 registered more than 60% hatching rate and 10 more than 80%. The number of eggs spawned varied from 10,620 to 1,66,950 per spawner depending on whether the spawning was partial or complete. Two of the eye ablated spawners rematured and spawned (one of them for a second time and the other for a third time). The interval between two successive spawnings was about 20 days. The nauplii that hatched out were grown to the juvenile stage (26–30 mm) in the laboratory; the larvae showed normal growth without any structural deformities.

Penaeus monodon, *Metapenaeus dobsoni* and *Parapenaeopsis stylifera* have also been induced to mature and spawn by the eye ablation technique in our laboratory.

The full details of the experiments reported in this short communication will be presented along with the results of the on-going experiments elsewhere.

*Prepared by M. S. Muthu and A. Laxminarayana, C. M. F. R. I., Cochin.