When these mesh cages are used in crab infested areas, they can be protected by covering the same using old fish nets (20 mm mesh size) or HDPE net (Fig.5).

Fig.5 Old fish net covering to protect micron-meshed cages from crab attack

Fig.6. Mussel seed - 60th day of nursery rearing

About 0.1 million spat can be nursery reared to seed size (8-12 mm) in a micron meshed nursery-cage within 45 days and 17-20 mm on 60 days (Fig.6). On the other hand, spat reared in hatchery shows only limited growth. Seed grown in the nursery cages can either be used for seeding ropes or sown directly to the field for on-bottom culture.

Economics

A micron-meshed cage may cost about Rs. 500/ per unit- which can be used to rear up to 1.0 lakh spat and can be used for seeding 30 - 40 m ropes (1 m each). A farm unit of 100 ropes can be seeded using 2.0 lakhs seed which could be produced from 5-6 numbers of micron - meshed cages. A production of 0.8 ton can be achieved in a farming cycle of 8-10 months, realizing a net profit of Rs.1.65 lakhs.

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PRODUCTION OF GREEN MUSSEL SEED USING MICRON-MESHED CAGES FOR SPAT REARING

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Vizhinjam Research Centre of ICAR-CMFRI has developed a cost effective nursery rearing technique for growing green mussel, spat to seed size suitable for mussel, farming using micron meshed cages. This will bring livelihood security for thousands of mussel farmers and fishermen in coastal areas of India.

- It is a simple, cost effective and farmer friendly nursery rearing system which can be adopted easily by farmers.
- Present technique reduces the cost of seed production in the hatchery substantially as the spat can be reared to seed size in the field.
- In micron meshed cages, spat with initial size of 2 mm reaches 8 - 12 mm in 45 days and 20 mm in 60 days of culture period whereas in the traditional tank rearing, it grows only to 3.5 mm and 7 mm respectively.

Preamble

The Asian green mussel, *Perna viridis* (Linnaeus,1758) is a major resource of the Indian coast, as they are one of the most preferred edible bivalves. Recent years have witnessed a high demand for mussel seed. Use of micron meshed cages for the nursery rearing of hatchery produced *P.viridis* spat will ensure large scale production of green mussel at affordable price.

Micron - meshed cage

Ripe green mussel, *P.viridis* is induced spawn by thermal stimulation in the hatchery. Fertilized egg passes through morula, D-veliger, umbo, eye-spot, pediveliger and plantigrade stages before settling as spat (Fig.1 (a to l)).

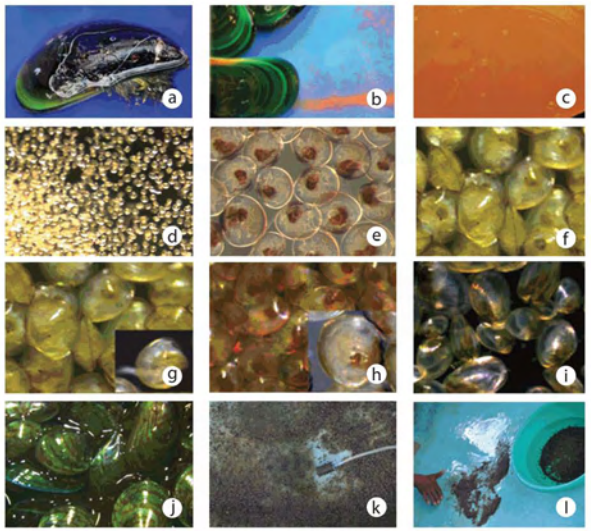

Fig. 1 (a- l)

a: Spawning of male, b: Spawning of female, c: Fertilized eggs, d: D - veliger stage , e: Umbo stage, f: Eye-spot stage, g: Pediveliger stage, h: Plantigrade stage, i: Spat (21st day) settlement, j: 42 days old spat, k: settled spat, l: Harvesting of mussel spat

In 40-42 days, the *P.viridis* spats can be harvested from the rearing tanks (Fig. 2) and subjected to further nursery rearing trials in sea/brackish water in micron - meshed cages. At the time of stocking spat should have an average size of 2.5 mm anterio-posteriorly (APM).

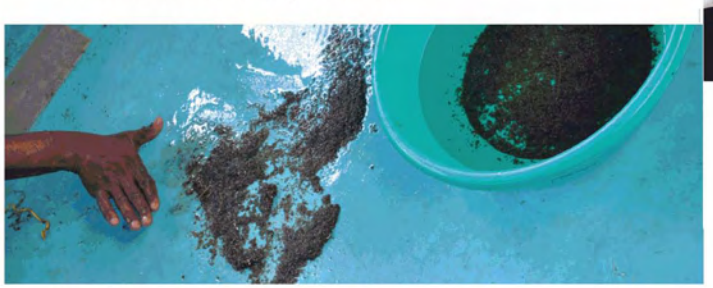

Fig.2 Harvested P.viridis spats for nursery rearing

For nursery rearing, micron meshed cages with a sieve size of 1 mm x 1 mm of 50 cm or 1 m length with 10 cm diameter can be used and it can accommodate 50,000 and 100,000 spat respectively. Stocked cages are kept in the rearing tank itself for a day, so that smaller spat less than 1 mm will pass out through the mesh net (Fig. 3).

Fig.3 Micron-meshed cages

Fig.4 Stocking in micron-meshed cages

Cage has a zip lock to close the mesh bag and it can be hung from the raft system in the sea or in the brackish water. To retain the cylindrical shape, cut PVC pipe rings are kept inside the mesh cage (Fig. 4).