CLAM CULTURE

(MERETRIX MERETRIX)

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INTRODUCTION

The word ‘clam’ refers to members of several bivalve families which burrow into the substratum with the help of a usually well developed fool.

- A few clam species are also known to attach to hard substrates with byssus threads.
- The clams form subsistence fisheries all along the Indian coast.
- Clam fishing plays an important role in the economy of the coastal fishing villages.
- Clam meat is nutritious and is a cheap source of protein rich sea food.

The world production of clams by aquaculture was estimated at about 5 lakhs tones in 1990. China tops the list with a production of 2,91,348t followed by Korea 97,754t, Malaysia 35,931t and USA 8,213t valued at US 218.88 million dollar.

SOME IMPORTANT SPECIES OF CLAM

- M. meretrix :- It contributes to the clam fisheries in the Kakinada bay. It is also found in Kalinadi and Coondapur estuaries. Life span 7-8 years, max. size 91mm
- M. costa :- It forms fisheries in Goa. It grows upto 55mm in length. It spawns through out the year with 1-3 peaks.
- Anadara granosa :- It attains maxium length of about 72mm. It spawns through out the year & there can be 2-4 reproductive cycle in a year.

- Paphia malabarica :- Commercial catches size is 51 mm It spawms during October – February and September – January.
- Katelysia opima :- Peak season July – November. They found in Kerela, Karnataka and Goa coast. FAMILY – Venaridae

BIOLOGY :- Like oysters and mussels, the clams are filter feeders.

SEED PRODUCTION :- Clam culture in Taiwan began as early as 1925 in Kaohsiung Harbour & gradually spread to other areas along the western coast.

- Season of seed collection was from May – August.
- The size of seeds varied from 700 – 1000/kg
- These tiny clams are about 0.5 mm in length and white in colour.
- They are sold as a mixture of clams and sand.
- One kilogram of this mixture usually contains about 30,000 tiny clams.
- The higher the contents of clam, the higher will be the price of the mixture.

The tiny clams are sold to seed clam growers, who put them in shallow (30-50 cm in depth) brackish water pond.

- It the pond is of sufficient fertility, no application of fertilizer is necessary otherwise fertilization is necessary.
- \ The fertilizers applied are night soil, hog manure, chicken droppling, rice bran etc.
- Generally about one half of the pond water is changed every 3 or 4 days.

- Fertilizers are applied during the change of water stocking density varies according to management practice & environment of the pond.
- Stocking generally ranges from 30-50 millions/ha.
- They are either scattered as evenly as possible over the entire pond or concentrated to cover one half of the bottom.

Bamboo sticks are planted in the different sections to serve as markers indicating the time of stocking and size of the clams.

The tiny clams planted in November May be harvested the following May or June, when some reach a size of 800-1000/kg and are sold to farmers who grow them for the market. The disparity in size is usually great the under size ones are left in the pond for further growth. Usually 50-60% of the tiny clams planted survive and are harvested. Nylon sieves of proper mess size are use to harvest the clams.

NURSERY REARING :- The 2-3mm hatchery produce clam seed are transfer to 40X40X10 cm box type cages. These cages are covered with fine velone screen mess and for additional protection against damage by crabs and fishes, a 10mm mess nylon fish net is stretched over the cage. The cages are suspended from rackes in sallow clam waters. They are periodically cleaned of silt, predators and foulers which enter the cages as larve. In six to eight week the clam grow to about 10mm in length and are ready for planting on the grow out grounds.

After 6 months nursery rearing are harvested and sold for stocking in clam farms. In giant clams, the nursery rearing comprises two phases.

- In the first phase small spat of 0.2mm in shell length are reared in on shore tank for nine months by which time they attain about 20mm in length. In about 3 weeks after fertilization and they become increasingly autotrophic.
- In second phase the juvenile clams are reared in the “ocean nursery” located in the coral reef habitat. In this system servival of 41% is obtained over a period of 19 months and clams grow to over 20cm in length.

GROWING FOR MARKET :-

- Choice of sight:- clams are cultured for the market on any flates, tidel estuaries and the inlet and out-let canals of milk fish ponds along with western coast. When the clams are cultured on sandy flats, the following points are considered
- Elevation :- with 1-2 hours to exposure at each low tide is preferred. Too long an exposure deprives the clams of much of their food and may cause mortality due to long exposure (over 6 hrs) to nthe hot sun.
- Nature of bottom :- the bottom should have a sand content of not less than 50%, Preferably 60-85%. The clams burrow into soft sandy bottom and better growth is obtained.
- Specific gravity of 1.015-1.024.

OTHER CONSIDERATIONS :- Clam beds should be located on bottom of little wave action.

- Bottom with frequent changes of centour & liable to pollution from industrial discharge are not suitable.

EQUIPMENT :- Very little physical equipment is required for clam culture on tidal flats. The clam growers in central Taiwan simply plant bamboo stacks around the beds at a spacing of 1-2cm to prevent the escape the clams.

- Some just plant bamboo stacks at spacing of 1-3m to serve as markers with no provision to prevent escape of the clams.

PLANTING :- Stocking rate varies a great deal in accordance with the personal experience of the farmers as well as his financial status.

- Generally 2000-5000 kg of clam seeds of size 100/kg are planted in a pond of 1 hectare.
- planting may be made any time from March to November in the evening of a cloudy or rainy day, and should be completed just before high tide.
- This will enable the clams to burrow almost immediately into the sand and so increase their chance of survived.
- The clams should be planted over the surface as evenly as possible.

GROWTH :- Growth rate varies with the stocking rate and the environment or the tidal flats or ponds.

- Generally clams seeds of 800/gr in size with reach marketable size of 35/kg in 18 months.
- Best growth rate is obtained from July to September, and there is practically no growth between November and March when the water temp. is low.

HARVESTING :- The survival rate of clams varies a great ideal, as much as 30-75% but 50% is considered satisfactory.

- The common gear used for harvesting the clams on tidal flats is the iron rake behind which a bag of proper mesh size to collect the clams is attached. Spades are also used.
- In pond culture, the clam are collected by hand without draining the pond.
- The clams harvested are put into gunny sacs or plastic bags and transported to the market.

========== THANKS =======