



Pearl Production in Ponds

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Mussels are (molluscan) found both in fresh water and also in the sea. Micro-organisms found in water like plankton, single cell algae are filtered and fed by these mussels, while intake of water sand, small crystals etc. get into these molluscan mussels accidentally. When they cannot put out these particles to stop the irritation, they secrete a shiny substance for covering them and cover these particles. It is the outermost, greenish-brown, thin, translucent layer made up of an organic substance "Conchiolin". It is secreted by mantle. It serves to protect the underlying layers from harmful effects of weak carbonic acid in water. While the cultured pearls are produced by inducing to deposit *nacre* around a surgically implanted foreign body of a particular shape and size into some identified locations, these become the pearls.

Along the Indian coast, six species of pearl oysters, viz., *Pinctada fucata* (Gould), *div. margaritifera* (Linnaeus), *div. chemnitzii* (Philippi), *div. sugillata* (Reeve), *div. anomioides* (Reeve) and *div. atropurpurea* (Dunker) have been reported to occur. The freshwater pearl producing mussel belongs to genus *Lamellidens* (Family Unionidae) and *Parreysia* (Family Amblemidae).



The *Lamellidens marginalis*, *L. corrianus* and *Parreysia corrugala* are the most important species, which possess good 'mother of pearl' in the shell. The pearl is similar to the inner shining layer of shell called 'mother of pearl-layer' or nacre, constituted by calcium carbonate, organic matrix and water

Gradually these particle covered layers becomes shiny objects called "pearls"

- Earlier to get one pearl several shells were sacrificed to prevent such resources loss now resourceful management and production has been initiated.
- Fresh water mussels are used to produce pearls which will save lot of foreign exchange and saves labour.
- In freshwater there are 52 varieties of fresh water mussels but among them only four are suitable for pearls production viz., *Lamellidens Marginalis*, *Lawcorianus* and *Ferriciyacorugoto*.
- They are found in river and ponds with water throughout the year in February to May months.
- When they are alive both the shells are joined and when dead, they are separated.



Fresh water Mussels and pearl production

- Land, water, living mussels and its inserting particular designs.
- Initial stages this culturing can be practiced in few Sq.m area.

Live Mussel Collection

- Keep the mussels in the box till it is full.
- On the top layer of the hay, sprinkle the water continuously and close; carry it to the culturing place.
- While transporting also sprinkle water on it.
- Next these mussels are to be put in the aerated water, after 1 - 2 days they are to be put in a plankton rich open pond. After removing these mussels from water, clean them in the same water, keep a piece of plastic sheet in a cardboard box and keep the mussels in layer by layer, cover them with hay.
- Small tanks of 1.3 m width and 3/4 m depth can also be used.
- Ponds are to be in the soil as pits or on the cement/stone slabs tanks can be used for rearing.

Pond Preparation

- First day 1000 ltr water to be mixed with 40 g lime in the slurry form and broadcasted on the pond.
- Second day 30 g wet cow dung in slurry form to be filtered, add 10 g groundnut powder and mix into the water.
- Fourth day 15 g cow dung and 5 g groundnut cake powder to be added as specified above, on the water.
- In the pond these natural plankton's serve as feeds for the mussels to grow properly.
- Seventh day all the collected mussels @ 1/ 10 ltr water to be distributed.

Releasing of Mussels in Water

- On a deep plastic tray, tie few closed empty bottle, to both the sides of the tray by a plastic rope.
- Release these trays in to the prepared ponds in which the trays will float.
- Keep these mussels on the trays.
- To assure the continuous density of planktons, once in three days 15 g cow dung, 5 g groundnut cake powder to be added as explained above. In summer, the top of the pond is to be covered by 90% shade net by covering.
- In this pond two-three common carps and 10 cm length 3 - 4 Succors moth fishes to be released.
- Every day early morning at least 15 minutes, examine the tank water level and quality, dead mussels to be thrown out and excess algal growth on top of the plastic tray to be removed and such observations to be noticed daily and repeated.
- Mussels to be reared for around two month's period.



Rearing

- After fifteen days, the survived mussels are released on the plastic tray kept in prepared tank.
- The water quantum and quality etc. to be maintained for nine months.
- When mussel shells are separated and viewed pearl are found behind the shells and it can be opened and removed.
- Designed pearls can be decorated in gold and silver like pendent and other alternate jewellery.

Reference

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