

Freshwater Designed Pearl Culture Technology

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Abstract

India has a vast coastal line .Pearl culture is quite common along with coastal line as a love biological jewel. In freshwater landlocked states, plenty of water is available in the lakes reservoirs and rivers. There normally two species namely Lamellidens marginalis and Lamellidens. corrianus are available. In these water bodies or in constructed ponds pearl culture is possible Farmers can adopt the tested technology of implantation of designed nucleus grats or both in mussels . The value of a designed pearl is very high in comparison to the expenditure on this process This venture is a million dollar affair A complete Technology of pearl culture has been described in the paper .

Keywords: *Lamellidens, pearl, cuttene, technology.*

Introduction

A pearl is a hard, rounded object produced by certain bivalve animals, primarily mollusks such as oysters (marine Hornel, 1992) in Gulf of Manner and Palk bay and fresh water *Lamellidens marginalis* for fresh water pearl culture in Uttarakhand. Pearl industry alone is a multimillion dollar business. If we consider whole mollusks they hold an exceptional feed use for human consumption buttons, food, lime industry, medicine, decorative and have religious value. Pearls can be used in jewelry and also crushed in cosmetics or paint formulations. Pearls is valued as a gem stone and is cultivated and harvested for jewelry. Astrologically, pearl symbolises the moon so that effects the peace,, traditionally and deal in life and mind It brings changes in physiology, psychology, and personality. Amita Saxena 2005 So, pearls are in great demand. An effective pearl culture technology was developed. Public was motivated and trained through lectures and demonstrations of

effective strategy for fresh water pearl culture in Uttarakhand,INDIA. In fishers occupation, shellfishes also got its good place and importance. The awareness motivation and cultivation about their values and importance are deadly needed in near future specially in landlocked states to reach high level in the economy.

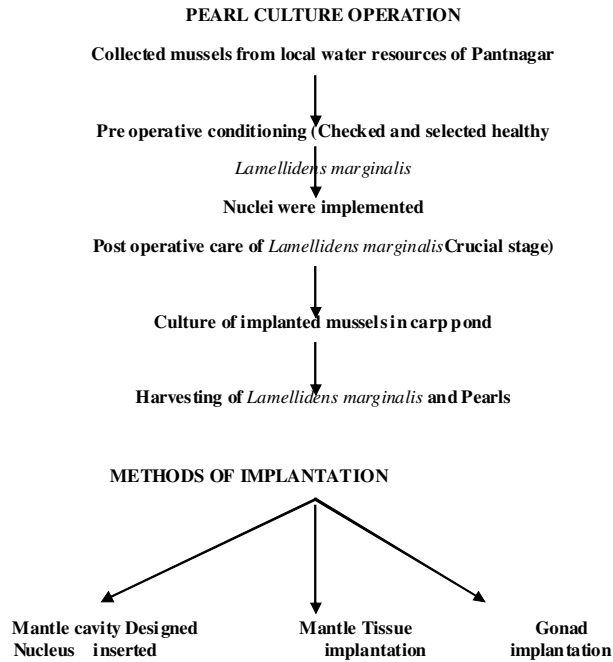
Materials and Methods

Preparation of Nucleus

Materials —Commercially available shell beads were purchased

Properties of important shell beads before using any nucleus, we should see the following qualities: should be Composed of Calcium carbonate, should be biocompatible should have hardness of about 3.5 in moh's scale. specific gravity (2.1) should be drillable. All the nuclei which used were having above qualities. The collected *Lamellidens marginalis*. were checked for health and size Designed nucleus were implanted in **Mantle cavity, Mantle Tissue and gonad of animal.**

Amita Saxena (2007).



AFTER operation the animals were put in six inches net bags in inverted positions, all net bags were hanged in a rectangular tubs for ten days. the animals which were implanted well and holding the nucleus were transferred to carp pond in which carps were already present.

Result and Discussion

GBPUAT PANTNAGAR, INDIA has big 16 ha area for aquaculture and carp culture is going on as a regular practice. To complete a life cycle, the presence of carps have special place because glochidium larvae of Pearloyster survive on fishes Secondly, for pearl culture carp ponds are very suitable because same environment is required.

Parameters for Pearl Culture Pond

Pond size	0.5 ha
Shape	: rectangular
Average Depth	: 1-1.5 meter
Soil	: Suitable for aquaculture
Algae	: Green algae
P ^H of water	: 7.2 to 8.0
Water temperature	: 20-30 ^o c
Dissolved oxygen	: > 5 ppm
Total hardness	: 62 ppm
Calcium in water	: 20-30 ppm
Magnesium in water	: 5-10 ppm
Total alkalinity	: 84ppm
Soil p ^H	: 5.5-6-6

Ponds were fertilized with organic and inorganic manures periodically. The net were knotted on bamboo sticks which were put in pond horizontally in wet condition. After checking the water quality, health and status of designed nuclei in animal for eight months the bivalves were harvested

Harvesting and Value Addition

Operated animals were harvested after 8 months. Depending upon size, no. of nuclei implanted health of animal and condition of pond environment. The harvesting time may be increased. Cleaning of the bivalve from accumulated silt, algae and other fouling unwanted material were performed. Then sacrificed the animal opened the bivalve one by one. Half round, flat bottom and designed shell attached pearls were cut out of the shell valves (Success rate 70 to 80%) implantation in mantle tissue caused the death of animal within ten days and gonad tissue implantation was not successful.

All the dirt and undesirable materials were removed carefully without any damage to the pearl by fine forceps and needles. Then cleaned the surface in Sikakai and Rithafal Juice and bleached with Sodium hypochlorite and bleach powder.

Result and Discussion

The unique luster of pearls depends upon the reflection and refraction, of light from the translucent layers and is finer in proportion as the layers become thinner, and more numerous, the iridescence that some pearls display is caused by the wrapping of

successive layers, which breaks up light falling on the surface.

Change in Reflectivity Due to Colouration

	Eosin	Iodine	AgNO ₃
Initial reflectivity before treatment	18.64-18.74	25.76-25.82	21.2-21.4
Final reflectivity	18.92-18.94	24.53-24.057	23.20-23.40

After harvesting pearls were colored through passing in either eosin, iodine, AgNO₃ solution for pink and black color.

Caring of Pearls

Always wrap the collected pearls in pouch of satin. Keep them away from pearls from vinegar, ammonia, chlorine bleaches, inks Hairsprays, perfumes and cosmetics. Wipe the pearls gently with hot damp towel to remove any perspiration or body oil which may change the color of the pearl. Wash with warm water using mild soap, do not store in an excessively dry place

The quality of the cultured pearls depend upon the thickness of the nacre, iridescences, luster softness color, size, shape and flaws and surface clarity the difference in the crystalline material of calcite and aragonite determine the beauty of pearl. Alagarwami, (1979) and Shiral, (1970), said only gold pearls is chemically and perfectly stable during formation and therefore, totally resistant to change and chemical action and as enduring as above gem..

Pearl culture is a beneficial venture to making a pearl the expenditure is only Rs. 5-8/Ratti/gram. One can do pearl culture separately and as well as with Indian Major Carps and Exotic carps as they are

herbivores. Here the experiments were carried out in polyculture fish pond. They do not harm each other but give a boost to the aquatic business and increase five times income to the aquaculturist /fisher men if they do pearl culture. Government and Banks provide the loans to the farmers. The loans, subsidies are classified according to the prescribed Govt. rules. It is a self employment for unemployed youth/women/retired persons with great value.

Conclusion

Pearl industry alone is a multimillion dollar business. If we consider whole mollusks they hold an exceptional feed use for human consumption jewellery, buttons, food, lime industry, medicine, decorative and have religious value. In fishers occupation, shellfishes also has its place and importance there awareness motivation and cultivation about their values and importance are needed in near future specially in landlocked states to reach high level in the economy.

References

- Algarswami K. (1974). Development of cultured pearls in India. *Current science* **43: 205-206**.
- Hornel, J. (1992). The Indian pearl fishery of the Gulf of Mannar and Palk bay. *Madras Fish Bull*; **8: 11-12**
- Janakiram, K. (2003), Freshwater Pearl Culture Technology Development in India **Vol. 13, Issue 3-4. 341-349**
- Protection Strategies International Conference of Shell Fish Restoration **November 12-16 Weeningen Netherland .**
- Saxena A. (2005) A Text Book of Mollusca : Discovery publication House . New Delhi Amita Saxena (2007) Fresh Water Bivalves
- Saxena A. (2007) Pearl Culture: an alluring million dollar business Souvenir UGC and UPCST Sponsored National Seminar souvenir on “Aling Earth And Health Threats” **December 19-20, Meerut 28-47**
- Shiral, S. (1970), pp. 132. The story of pearls, Japan. Publications Kinc, Jaipur