MINI-PRAWN HATCHERY FOR FISHERMEN FAMILIES

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The Central Marine Fisheries Research Institute, Cochin, has developed a totally indigenous technology for prawn seed production using locally available equipment and material. The technology differs from those used in other parts of the world in two main respects: (1) mixed diatom cultures developed by fertilizing raw sea water with plant nutrients are used to feed the larval stages, instead of pure algal cultures and (2) simple particulate feed is used for postlarval stages, instead of brine shrimp nauplii. The larval rearing procedures have been so simplified that even unskilled workers with some training can take up this work.

It is a modular type of hatchery so that the capacity of the hatchery could be increased or decreased by changing the size and number of larval rearing containers to suit the financial resources available. The prawn hatchery technology developed by the CMFRI has been taken up by the maritime States of Kerala and Karnataka to set up large prawn hatcheries at Cannanore and Kumta Bay, respectively. The technical know-how is being provided by the CMFRI for these hatcheries.

The technology developed by the CMFRI is so simple and versatile that while it is being utilised by the maritime States to construct large hatcheries, it has been scaled down to meet the requirements of even fishermen families, by Messers.M.S. Muthu, N.N.Pillai and K.V.George.

Fishermen families living on the shore can make use of the limited facilities available in their houses to produce prawn seed and earn additional income in their leisure time. The fisherman who goes out for fishing everyday can help in bringing the spawners and the women and children in the family can take care of the larvae in their leisure hours. The procedures are so simple that the family members can learn them by attending short training courses at the Krishi Vigyan Kendra of the CMFRI at Narakkal.

INVESTMENTS AND RETURNS

The total investment is only Rs.3000 which could be easily obtained as a loan from nationalised banks. The equipments used are only plastic bins, basins and buckets and small aquarium aerators for aerating the water. These containers can be kept on the varandah of the fishermen's house. There should be electricity available in the house to operate the aerators. Clear seawater with salinity of 28-34 ppt should be available on the beach for atleast 8 months in a year. The seawater for rearing the larvae can be collected in plastic buckets from the beach by the family members. The chemicals used for developing diatom cultures for feeding the larvae are cheap and easily available.

Table-1

a) **PRODUCTION CAPACITY OF A MINI-PRAWN HATCHERY**

1. Nauplii stocked in 4 bins (each 100 litre capacity) @ 7500 nauplii per bin	30,000 nos
2. PL5 obtained after 13-15 days per run (av. survival rate 50%)	15,000 nos
3. In 8 months of operation 15 runs can be made (15,000 x 15)	2.5 lakhs PL5
∴ Capacity of the hatchery per year.....	2.25 lakhs PL5

ECONOMICS OF MINI HATCHERY

Investment:

		Rs.
I.	Capital on hatchery equipments:	
	100 l plastic bin (4 nos for larval rearing and 2 nos for seawater storage) - 6 nos	1,380
ii.	50 l plastic bin (white colour) (for the transportation of spawners and culture of phytoplankton) - 2 nos	210
iii.	25 l plastic bucket/pot (for seawater collection) - 4 nos	120
iv.	Aquarium aerators - 8 nos	440

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v.	Aeration tube (1/2 roll), Aeration stones bolting silk - 2 m, seive for water changing - siphoning tube (3 m)	200
		2,350
II.	Operational: (Spread over 3 years)	
vi.	Chemicals	200
vii.	Artificial feed	30
viii.	Electricity and other miscellaneous items	420
		650
III.	Total investment - Rs. 2350 + 650	3,000
IV.	Annual recurring expenditure	
i.	Depreciation	1,000
ii.	Interest @ 12%	360
		1,360
V. i.	Income	
	(1 run - 15,000 seed @ Rs.15/- per 1000 seed = 225.00)	
	Income from 15 runs in 8 months	3,375
ii.	Net profit per year 3375-1360	2,015
iii.	Profit in percentage on capital investment (Rs.2015/3000) :	68%
iv.	Net income for 3 years : 2015 x 3 :	6,345

The hatchery phase ends at postlarva-5 stage and the fishermen should sell them at this stage. The fishermen cannot keep the postlarvae for a longer period in the small containers. They need more space for good survival.

The fishermen can sell the PL5 to the seed banks being set up by MPEDA in all the maritime states. These seed banks can rear them in their facilities for about 15 days before selling them to the prawn farmers for stocking in ponds.

Alternatively, the fishermen can sell the postlarvae to marginal farmers with small brackishwater pond holdings (less than one acre) where they can be directly stocked. If the ponds are cleared of all unwanted organisms by application of mahua oil cake, crushed seeds of **Croton twiglium** (Neervalam) or ammonia. The PL5 are quite sturdy and can withstand an abrupt change of salinity from 30 to 20 ppt.

Contd. from P.76

of the case, grant a duplicate certificate.

(2) Every such application shall be accompanied by a fee as laid down in Part B of Schedule I:

(3) If the original certificate stated to be mislaid, lost or destroyed, shall at any time after the issue of a duplicate thereof be found, it shall forthwith be delivered to the issuing authority.

11.Returns: Every Registrar shall submit to the Director General of Shipping on or before 15 January and 15 of July of each year a return showing the particulars of certificates issued during the previous half year in form FBIC IV.

12.Production of certificate -- The owner, agent or skipper of every Indian fishing boat shall produce the certificate on demand by a Surveyor, any officer of the Customs, or of the Merchantile Marine Department.