

# Pearl spot - the State Fish of Kerala:

## Mass seed production to cage culture - A glance



2 m diameter HDPE cage

Pearl spot has been in the limelight in Kerala for the past one year, since it has been declared as the state fish by the Government of Kerala in 2010. The demand for this fish is increasing day by day and thus the aquaculture prospects too. CMFRI has first done an experimental farming of Pearlsport in open backwater HDPE cage. During the process it was unable to get adequate number of seeds. The supply was restricted with 50-100 numbers at a time and that too totally unreliable. However, with a dedicated attempt we could obtain 2000 wild collected juveniles in the year 2010 and a successful run of cage culture could be attempted. In this context CMFRI has taken up a short term target for mass production of Pearl spot seed in captive conditions. For this purpose earthen ponds at Narakkal, Cochin were developed and 1000 brood fish pairs were stocked. By providing artificial substrates all along the pond natural breeding and egg laying of the fish were enhanced. The fertilized eggs were collected and transferred for hatching and further rearing under controlled conditions. Under the conditions provided we could obtain 95% hatching and 85-90% survival for the larvae (30 days). Nursery rearing was done in HDPE hapas of varying dimensions fixed in earthen ponds till it reached stockable size (4-6 cm).



Pearl spot seed in hatchery

The total brackish-water area including backwaters of Kerala is about 1,43,696 ha. If 50% of the total area can be utilized, about 71,000 ha are available for aquaculture purpose including cage culture. In Kerala there are nine coastal districts with potential for pearl spot culture.

However, if at least 33% area is to be stocked (based on the above table) one lakh pairs of broodstock is sufficient to meet the entire seed requirement. Since the entire process of pearl spot seed production is without any complicated technologies, it can be popularised all over the coastal districts of Kerala. The input cost for seed production is also the minimum compared to the revenue that can be generated (₹5-7/seed).

### Cage culture of *Etroplus suratensis*

Two 2 m diameter HDPE cages were used for grow out culture of pearl spot in open backwater at Cochin. The effective volume of the net bag used in the culture was 6.28m<sup>3</sup>. About 2000 juvenile pearl spot *E. suratensis* weighing 10- 50 g collected locally were used for stocking in the cages. Feed was given *ad libitum*, thrice

a day using commercial low protein pellet feed and a wet mixture of rice bran and groundnut oil cake (1:1) along with cooked rice which is preferred by pearl spot. Feeding trays were used for feeding. The cleaning of the nets was done periodically for net exchanging. Regular water quality monitoring was also carried out. After 6 months of rearing in the cages the pearl spot has reached an average size of 175 g. A total of 225 kg was harvested from each cage and the survival was 62%. A FCR of 2.7 was worked out with a specific growth rate of 1.42%. Approximate feed requirement for 6 months was 250 kg/ cage. Total expenditure incurred was about ₹48,000 and the revenue generated was ₹78,750. The advantage of cage culture of pearl spot is that it will not spawn in cage due to the absence of firm substrate for egg attachment. This has enhanced the growth of fish compared to that in ponds where it spawns even at a size of 110 g. However, almost all the fish caught from cages were having well developed gonads and it was observed that for broodstock development also cage culture can be practiced.

Prospective farmers may contact CMFRI for technical expertise in broodstock development, seed production and cage culture of pearl spot.

### Pearl spot seed production details by CMFRI using 1000 pairs

Area occupied for broodstock rearing	- 0.265 ha
Egg (@4000Nos/pair)	- 4 million
Larvae (95% hatching)	- 3.8 million
Juveniles (@60% survival)	- 2.28 million
Area that can be stocked (@10,000Nos/ha)	- 228 ha
Harvest (@75% retrieval)	- 1.71 million fish
Production (@mean 200g size)	- 342 tonnes/year
Total revenue (@ ₹150/ kg fish)	- ₹ 51.3 million



Pearl spot harvested from cage

(Mariculture Division)