

Successful cage rearing of snubnose pompano *Trachinotus blochii* in coastal waters of Karnataka

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Abstract

Cage rearing of pompano in coastal waters for the first time in Pavanje Estuary, Koluvaile Village, Haleyangady Panchayat, Dakshina Kannada, Karnataka under the Scheduled Caste Sub Plan program (SCSP). Hands-on training on various aspects of the cage culture was imparted to the beneficiaries through participatory mode. The average growth observed during the five months grow out period was 300 g with a FCR of 1.5. The results of this cage rearing programme of the snubnose pompano has proved the rapid growth rate of the species attaining table size in a short span of 5-6 months. Further, after witnessing the success of the farming demonstration and the good market price (₹400/kg) for the cultured snubnose pompano, several aquafarmers have become interested in taking up its farming.

Keywords: Dakshina Kannada, cage culture, grow out, pompano, SCSP program

Introduction

The snubnose pompano, *Trachinotus blochii*, with its rapid growth potential, good meat texture and high market demand, is a preferred farmed fish species among the high-value marine tropical finfishes. Many Asia-Pacific countries, such as Taiwan and Indonesia, have successfully established pompano aquaculture. It is rarely observed in the commercial fishery in India and therefore its supply in the market is also limited. Successful induced breeding and larval rearing of this candidate species was achieved by ICAR-CMFRI in 2011 (Gopakumar *et al.*, 2012) and thereafter, the rearing of this species in ponds and cages was demonstrated by ICAR-CMFRI in different parts of the country. In Karnataka, the farming of pompano in cages installed in open waters were done for the first time in Pavanje Estuary, Koluvaile Village, Haleyangady, Dakshina Kannada District under the Scheduled Caste Sub Plan (SCSP) program.

Selection of prospective farmers

The selection of farmers belonging to the Scheduled Caste was done in consultation with Panchayat Development

Officer (PDO), President and members of Haleyangady Panchayat. Accordingly, 12 members from four families of the Mundala Community residing close to the Pavanje Estuary were selected as beneficiaries of the SCSP programme implemented by the Mangalore Regional Centre of ICAR-CMFRI. They were provided hands-on training on several aspects including selection of suitable sites for farming, cage fabrication, maintenance of the cages, candidate species that could be considered for culture, feeding protocols, etc. through a participatory mode.

Site selection

A preliminary survey was conducted before installation of the cages and important water quality and other parameters such as requirement of a minimum water depth of 2.5 m at lowest low tide, tidal flux, distance from navigational channel, closeness to beneficiaries' residence, ease of accessibility, etc. were taken into account. Pompanos are sensitive to changes in water quality especially to turbidity and salinity changes (Gopakumar *et al.*, 2012; Kalidas *et al.*, 2012) therefore, need for maintaining good



Demonstration of cage fabrication

water quality conditions throughout the culture duration was important.

Cage fabrication

Customised cage (6m x 2m x 2m, with water holding capacity of approximately 24 tonnes) was fabricated (Dineshbabu *et al.*, 2019). The bi-layered cage had an outer layer of netlon material and inner layer of nylon. The netlon structure protected the inner net from predators and other materials drifting in the water that could possibly cause damage to the net structure. In addition, it aided in holding the shape of the cage even during strong water currents without compromising on the water holding capacity.

Seed procurement and stocking density

The snubnose pompano seeds (1-2 cm) produced at the marine finfish hatchery of the Vizhinjam Regional Centre of ICAR-CMFRI was procured and reared to stockable size (~15 g) in the rearing facility at the Karwar Regional Station of ICAR-CMFRI. The reared seeds (900 numbers) weighing on an average of 14 g per seed was

transported from Karwar to Haleyangadi and stocked in the fabricated cage on 17th December 2021. The seeds were acclimatised to the local condition before they were released into the cage. As the farming of the snubnose pompano was being done for the first time a lower stocking density than normal (40-50 fishes /m³) was followed for this programme.

Rearing, feeding protocols and cage maintenance

The stocked fingerlings of the snubnose pompano were reared in the cage for a period of five months and fed twice a day with pelleted floating feed (Nutrilla Growell feed). The feeding ratio was calculated based on the total biomass (Table 1). Cage cleaning was done routinely to remove debris and fouling organisms attached to the outer surface of the cage.

Table 1. Feeding schedule of the cage reared fish stock

| Weight of fish | Feed size | Pellet feed provided per day (%) |
|----------------|-----------|----------------------------------|
| 15-100 g | 1.8 mm | 5 |
| 100-250 g | 3.0 mm | 4 |
| >250 g | 3.0 mm | 3 |

Growth of pompano in cages

Growth of the stocked snubnose pompano was monitored regularly. Fingerlings stocked with an average weight of 14 g attained an average weight of 320 g in a period of 5 months. The growth as well as the specific growth rate of the snubnose pompano stocked in the cage at Haleyangadi is given in Table 2.

Harvest of the fish

The reared snubnose pompano was harvested in May 2022 after a period of 5 months. It was timed before the onset of the southwest monsoon as the rains would result in a sudden decline in salinity and increase in water turbidity, both factors not conducive for growth of the stocked pompano. The average weight of the individual fish was ~300g and a total of 265 kg of pompano was harvested. A high survival

of 96 percent was recorded. The FCR was 1.51. Generally, the FCR for fish production is between 1.2 to 2.2 and the FCR of 1.51 during the present culture programme showed an efficient conversion of feed to biomass (Jayakumar *et al*, 2014). The major portion of the harvest (250 kg) was taken by the Karnataka Fisheries Development Corporation (KFDC), Mangaluru at a farm gate price of ₹400 per kg. The rest of the harvest was sold by the beneficiaries locally at a similar rate. The total of amount ₹1,06,000/- was realized by the beneficiaries from the harvest of cultured snubnose pompano.

The successful rearing of the pompano in cages for the benefit of SC families along the coastal area has opened an avenue for a profitable alternate livelihood option. The active participations and collective effort of the local Panchayat members, the beneficiaries of the SCSP programme along with the dedicated team of personnel from Mangalore Regional Centre ensured this success. It has created interest among

Table 2. Monthly growth increment in length (cm), weight (g) and Specific growth rate (%).

| Growth parameters | Stocking size | | | | | | Survival rate (%) |
|------------------------------|---------------|-------------|------------|-------------|------------|--------------|-------------------|
| | Dec. 21 | Jan 22 | Feb 22 | Mar 22 | Apr 22 | May 22 Final | |
| Length (cm) | 9.7 ± 0.3 | 13.5 ± 0.32 | 19.1 ± 0.3 | 21.5 ± 0.3 | 24.6 ± 0.6 | 27.54 ± 0.2 | 96.2 |
| Weight (g) | 14.1 ± 1.5 | 45.4 ± 3.2 | 879 ± 3.2 | 151.9 ± 6.7 | 258 ± 2.9 | 319.9 ± 4.8 | - |
| Specific Growth Rate (SGR %) | - | 222.0 | 523.4 | 977.3 | 1729.8 | 2168.8 | - |



Harvested pompano after 5 months of rearing

locals, including members of the SC and ST communities to initiate fish farming and local Panchayat and State Fisheries Department officials too have agreed to further the interest of the weaker sections with the proven cage farming technology of ICAR-CMFRI.

The availability of seeds especially good quality seeds of cultivable marine finfish species has always remained a challenge for aquafarmers. Presently, because all the marine finfish hatcheries are located along the east coast, transportation and timely procurement of sufficient number of seeds has deterred the large-scale adoption of finfish farming along Karnataka coast. The successful breeding and the seed production of snubnose pompano at the Vizhinjam Regional Centre, Kerala has to a large extent solved the availability of fin fish farmers along the Karnataka

and Kerala coasts. Finfish farming in coastal Karnataka was mainly focussed in Udupi and Uttara Kannada districts and the present programme done in Dakshina Kannada has ensured the horizontal expansion of the cage farming to the third coastal district. This is also the first-time pompano seeds have been stocked and reared to marketable size in cages for Karnataka which has confirmed the suitability of the species for profitable farming.

Reference

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