

SATELLITE NURSERY FOR SEABASS FISH

AN INNOVATIVE APPROACH

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Introduction

Karnataka, with a 320 km coastline is endowed with vast marine and brackish water resources in all the three of its coastal districts; Uttara Kannada, Udupi and Dakshina Kannada. Most of the rivers originating in the western ghats flow into the Arabian sea, forming huge estuarine areas. The estimated potential brackishwater area for aquaculture in Karnataka is about 8000 Ha of which more than 80% falls in the Uttara Kannada district. In recent years, most of the farmers diversified their farming system to cage culture of high value species like Asian Seabass due to high market demand and availability of seeds from CIBA and RGCA. More than 600 cages were registered for farming of Asian seabass in Karnataka.

Need of the innovative practice/ technology

As cage culture of Asian Seabass is gaining in popularity and increasing in the state, consistent and timely availability of appropriate stockable sized fingerlings for cage farming is the major constraint. A majority of the farmers depend on Andhra Pradesh for supply of wild seabass fingerlings or nursery reared (but not weaned to feed) fingerlings. These are not only expensive owing to its high transportation cost, but also do not accept artificial pellet feed as the fingerlings are not weaned. Therefore, farmers rely on feeding trash fish to the stocks during culture that increases the cost of production. To overcome this issue, it is necessary to produce and stock weaned/



Flow-through based Seabass Nursery System

advanced fingerlings in the grow-out system to ensure better growth and survival. A satellite "seabass nursery rearing technology" developed by ICAR-CIBA, came to the rescue of farmers as they now could obtain inputs spawn, larvae or fry from the CIBA breeding unit and operate the Seabass nursery on their own with technical assistance from CIBA.

The innovation

Under the guidance of CIBA scientists, young entrepreneurs from Kundapur taluk, Udupi district, Karnataka developed a tank-based flow through system to carry out nursery rearing of Asian seabass. This nursery system consists of 8 tanks (made up of HDPE



Seabass fingerling

sheet with GI pipe support) of 12-ton capacity each out of which 4 tanks were utilized for nursery rearing of fry and the rest for water storage. CIBA supplied around 38000 numbers of (16-25-day old, total length 0.5-0.8 cm) of hatchery reared seeds in 3 successive batches to these entrepreneurs to carry out nursery rearing.

In the first trial, 10,000 no's seeds of 0.5-0.8 cm were procured from CIBA @ Rs 2.5/fry and stocked in the

12-ton HDPE tanks @ 3000 nos./tank. It was reared for a period of 65 days by providing formulated feed @ 5-10 % of body weight daily. During this period, regular grading every four days, was practiced. Seabass fry attained fingerling size (7.5-10 cm) in 65 days of rearing with a survival rate of 60%. The fingerlings were sold to cage culture farmers of Kundapura @ Rs 45/piece and youths were able to generate substantial total income of Rs 2.7 lakhs through this exercise.

Sl.no	Date	Total seeds supplied from ICAR -CIBA (in batches)	Size of early fry stocked (16-25 day old)	Length of Seabass fingerlings (55 -65 days)	Survival rate (%)	Revenue generated from Seabass fingerling sale
1.	23.10.19	10,000	0.5-0.8 cm	7.5 -10 cm	60 %	Rs. 2,70,000
2.	06.12.19	10,000		7.5 -10 cm	80 %	Rs.3,60,000
3.	25.12.19	18,000		7.5 -10 cm	80 %	Rs. 6,48,000
Total		38,000				Rs.12.78 Lakhs

Summary of the three trials carried out by the entrepreneur

In the second trial also 10,000 nos. of seabass fry were sourced and stocked. The HDPE tanks equipped with inlet and outlets provided a continuous flow of water from overhead tanks all through the rearing period. At the end of two months rearing, the fry attained fingerling sizes of 7.5 – 10 cm at a survival rate of 80% (8000 fingerlings produced) which generated an income of Rs 3.60 lakhs.

Similarly, in the third trial, 18000 nos. seabass fry were stocked, this time @ 4500 nos. /tank. The growth and survival rate obtain in this cycle was similar to that of the second trial and the entrepreneurs were able to sell around 14,400 fingerlings, generating an income of Rs. 6.48 Lakhs.

Advantages of the nursery system

- Seabass nursery rearing can be easily adopted by any farmer/entrepreneur either in a hapa or in the tank system
- Huge demand for stockable size seabass fingerlings provides a ready market and can generate income within a in a short period of two months.
- The complete technology package of seabass readily available with CIBA in terms of hatchery produced seeds to feed (from nursery to grow-out feed).
- Satellite nursery rearing model helps to raise the fingerlings in west coast of India and minimize the dependence on wild collection.
- Provides a steady supply of seeds to farmers assisting in expansion of farming area in the region.
- The weaned fingerlings supplied by the nursery helps in reducing production cost and the dependence on trash fish.

Economics

The entrepreneurs were able to produce 28,400 Asian seabass fingerlings from 3 successive trails at an average survival rate 74 %. A profit of Rs 6.45 lakhs was generated with a benefit cost ratio (BCR) OF 2.01 (Rs 12.78 lakh return/Rs 6.33 lakh production cost). Fingerlings were sold at Rs 45/piece.



Young entrepreneurs - Kaushik, Sachin and Karthik Gowda

Profile of the entrepreneurs

Kaushik A.H, Sachin S.V. and Karthik Gowda V. S are the 3 young graduates who completed Fisheries Science (B. F. Sc) from the College of Fisheries, Mangalore. Soon after their graduation in 2019, they ventured into this innovative startup: "Flow through based nursery rearing of Asian Seabass" in a 1.5-acre land under the technical support from ICAR – CIBA. They now own a company KKS Aquaculture in Kundapura taluk of Karnataka. The main objective of KKS aquaculture is to supply Asian seabass fingerlings/juveniles to cage culture farmers of the west coast. Recently, they supplied seabass fingerlings to 30 – 35 cage farmers along the west coast of India to augment brackishwater aquaculture development in the area.

Contact details of the farmer

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