

Seasonal culture of *Pseudapocryptes elongates* (Cuvier, 1816) in West Godavari and Krishna Districts of Andhra Pradesh

Sekar Megarajan¹, Ritesh Ranjan¹, Biji Xavier¹, Loveson Edward¹, Shiva Ponnaganti¹, Imelda Joseph² and Shubhadeep Ghosh¹

¹Visakhapatnam Regional Centre of ICAR-Central Marine Fisheries Research Institute, Visakhapatnam

²ICAR-Central Marine Fisheries Research Institute, Kochi

The gobi, *Pseudapocryptes elongates* (*Ramulu* in telugu) is an air-breathing fish belonging to the family Gobiidae. A bottom dwelling fish, it is mostly observed in canals and creeks of estuaries. Besides India, it is found in countries like Bangladesh, Cambodia, China, Indonesia, Japan, Malaysia, Singapore, Taiwan, China, Thailand and Vietnam. In India, it is mostly distributed along east coast. Life history of the fish is different from other fishes in the family Gobiidae. After it completes its planktonic stage in the coastal waters the larvae enter the intertidal zone, where it metamorphoses into juveniles which enters creeks and mangrove areas. Here, they grow for 8-9 months and become adults. After sexual maturation, the adult fish goes back into the sea for breeding. Highly euryhaline, it can tolerate salinities ranging from 0 to 50 ppt. It is omnivorous and feeds mainly on phytoplankton and invertebrates (epibenthic diatoms, cyanobacteria, filamentous algae, juvenile shrimps and small worms). Important characters like

tolerance to wide salinity, omnivorous feeding behaviour and good local market demand play a major role in selection of this fish for pond culture.

Considered a delicacy in countries like Japan, Taiwan and Vietnam, the market demand is leading to semi-intensive and intensive culture of the fish in these countries using wild collected seeds. In the last few years, culture of this fish is picking up in India, especially in West Godavari and Krishna districts of Andhra Pradesh. Cultured seasonally in shrimp ponds or paddy fields, it is being considered as an alternate to shrimp farming by many small-scale farmers.

Since the West Godavari and Krishna districts have numerous creeks and mangrove areas the juveniles are abundant here, especially during April to June. During low tide, the fingerlings are collected using scoop nets from the water filled mud pits in the mangrove areas. Presently, cultivable area of the fish in both these districts is more than 500 acres. About half of this area is in the paddy fields and the remaining in existing shrimp ponds. Paddy culture commences in January and is harvested in April. After paddy harvest, the lands are ploughed, filled with water to about 2 feet and stocked with the fingerlings collected from the wild. In shrimp ponds, seeds are stocked after the summer harvest of shrimps. Wild collected fingerlings of about 2-5 cm in length are stocked at the rate of around 25 numbers/m². About 6-7 months later, when they become adults having weight around 40g each, they are harvested. Average survival is around



Fig. 1. *Ramulu* seeds collected for stocking

70%. Generally, fishes are harvested during October to November and the fish bearing ripe gonads fetch higher price in the local markets. Inputs like feed and fertilisers are not needed during culture and only water exchange is performed at every 5-6 days intervals. During culture, water salinity generally ranges between 5-10 ppt. At harvest, water is released from the pond and fishes are harvested by hand picking from the burrows made by the fish. These are sold in local markets at Bhimavaram and Machilipatnam while some are transported to Hyderabad also.

The culture is gaining popularity among aquafarmers, especially among small scale shrimp farmers, as no extra inputs are required during the culture. Farmers buy seed at ₹ 1 per piece and the average selling price of the harvested fish is around ₹ 15 per piece, with the minimum selling price being ₹ 10 per piece. Expenses on feed are not incurred as it feeds on naturally available worms and algae in the pond. At harvest, ₹ 1 per piece is paid as labour charges for hand picking of the fish from the



Harvested adult fish

pond bottom. Therefore, seed price and cost incurred at harvest are the only major expenditures. Thus, farmers get a minimum profit of ₹ 4-5 lakhs per acre per year from fish culture, apart from the income earned through paddy culture. Unlike other fishes and shrimps, diseases have not been encountered till date. The magnitude of profit is attracting an increasing number of farmers to venture into culture of *Ramulu* in the last three years. However, scarcity for seeds leading to increasing seed costs, widening of culture area which leads to higher volumes of harvest causing decrease in selling prices are emerging issues.