

# ICAR-CMFRI Achieves Successful Captive Breeding of High-Value Marine Fish 'Golden Trevally'



In a significant advancement in mariculture development in India, the ICAR- CMFRI (Central Marine Fisheries Research Institute), Kochi has successfully developed seed production technology for golden trevally (*Gnathanodon speciosus*), a valuable marine fish species. This breakthrough is anticipated to create a new pathway for sustainable seafood production and expand the range of viable species suitable for mariculture. The achievement of successful bloodstock

development, captive breeding, and larval rearing of the golden trevally followed five years of research at ICAR-CMFRI's Visakhapatnam Regional Centre.

## Market Potential and Aquarist Appeal of Golden Trevally

The golden trevally, also known as golden kingfish, holds promise as a marine aquaculture species due to its rapid growth rates, high-quality meat, and strong market demand for consumption and ornamental purposes. In the local market, this fish commands a price of Rs 400-500 per kilogram. Recognized for its distinctive yellow belly, scattered black patches, yellow fins, and black tail, the golden trevally is favored for aquariums due to its appealing appearance. Juvenile golden trevally often acts as companions for sharks, and their silver-grey coloration and golden juveniles make them attractive to aquarium enthusiasts. The fish typically sells for Rs 150-250 per piece.

The golden trevally is commonly found in reef areas off the coasts of Tamil Nadu, Puducherry, Kerala, Karnataka, and Gujarat, with total fish landings estimated at 1106, 1626, 933, 327, and 375 tonnes respectively over the past five years, particularly from districts such as Ramanathapuram, Nagapattinam, Chennai, Pudukottai, Trivandrum, Ernakulam, Tirunelveli, Tanjavur, Tuticorin, Udipi, and Gir Somnath.

Dr. A Gopalakrishnan, Director of ICAR-CMFRI, highlighted the significant milestone achieved in Indian mariculture, emphasizing that the golden trevally is an excellent candidate for mariculture owing to its desirable characteristics. Given the declining trend in its natural population, the success in captive breeding of this fish holds greater significance as it provides opportunities for sustainable fish farming through mariculture practices, including sea cage farming. Dr. Gopalakrishnan also noted that this technology will contribute to efforts to restore wild stocks through sea-ranching initiatives.

Under the leadership of Dr. Ritesh Ranjan, Senior Scientist at the Visakhapatnam Regional Centre of ICAR-CMFRI, a team of scientists initiated research efforts on seed production of this fish in 2019. Juveniles weighing 40-50 grams collected from the wild were reared in CMFRI's research cage farm facility off the Visakhapatnam coast. These fish were raised in cages for 3-4 years until reaching maturity (3.5-4.5 kilograms).

Subsequently, mature males and females were transferred to a land-based tank system (Recirculating Aquaculture System - RAS) with a capacity of 40 cubic meters. Natural spawning occurred within the RAS on February 9, 2024. After 51 days of rearing post-hatch, the early fry reached an average size of 3 centimeters and weighed 450 milligrams, demonstrating a very good survival rate.