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Culturing Milkfish through Hatchery seed production -

A Milestone in Indian Fishery production

Special Feature
CIBA achievement on hatchery seed production technology for the milkfish

*M.Jacob Abraham **

*Srividhya M.***

The Central Institute of Brackish water Aquaculture(CIBA), Chennai, under the Indian Council of Agriculture Research(ICAR),Govt. of India, has achieved a major breakthrough in artificially breeding and seed production of the Milkfish (Chanos Chanos) , locally known as Paal Kendai or Poo Meen, in captivity, for the first time in the country.

Milkfish is an economically important and widely cultured food fish of the south-east Asia. In India, milkfish farming is dependent on natural seed availability during April to June in the south-west and October to December in the south-east coasts.



The traditional milkfish industry depended totally on an annual restocking of farm ponds with fingerlings reared from wild-caught fry. As a result, the industry suffered from regional, seasonal and annual variations in fry availability. These variations are generally unpredictable, and may be quite large over short periods of time.

CIBA has developed a hatchery seed production technology for the milkfish *Chanos chanos*. Because of the milkfish seed will be available throughout the year. This will lead to the large scale commercial aquaculture of this species and subsequently enhance the fishery production in India

Milkfish has the ability to grow in brackish water, sea water and even adapt to fresh water ponds and lakes. This fish is vegetarian in feeding habits, consumes low protein formulated fish feed and grows up to 500-700 grams size in 5-6 months. This is a boon for small and marginal farmers who can grow the fish at a low cost, especially in poly culture systems with shrimps. Presently Milkfish farming in the country is carried out using milk fish seeds collected from sea, during two months in an year. Hence the development of hatchery technology of the Milkfish, will be a boon for fish farmers who would be able to grow the fish at a low cost of RS 50-60 per Kg while the Milk fish can fetch Rs 120-150/Kg in the domestic market. Milkfish got its name as it has pure white color.



In the fish hatchery of the Experimental Research Station of CIBA located at Muttukadu near Chennai, the male and female adult Milkfish were reared in cement tanks for 6-8 years under captive conditions. While the Milkfish attains natural maturity, breeding and spawning in the open ocean, maintaining the brood stock (parent fishes), inducing them to mature and breed further were technically challenging tasks.

These fish were bred by induced breeding methods through hormonal manipulation, administering standardized doses of permitted hormone. The fertilized eggs obtained were hatched and reared to fingerling stage, which are further suitable for nursery rearing and farming. The CIBA research team, after making eight years tireless efforts, have achieved this for the first time in India. Though Philippines has already perfected the technology for rearing Milkfish, CIBA team has achieved it true to the spirit of MAKE IN INDIA program of Union Government.

Being a low cost fish the Milkfish can cater to the need of common man in Indian domestic markets as suitable source of animal protein and for nutritional requirements of human food in general. The milk fish being a herbivore, with low production cost, can form an ideal alternate species for shrimp farmers. The small Milkfish is also being used as a preferred live bait for tuna fishing industry. Presently, when the cost of

marine fish is ruling at very high in the market , the Milkfish with vegetarian feeding habits , could be grown using low cost supplemental feeds. Milkfish with its ability to grow with other fishes and shrimps and also disease resistant in nature , is an ideal fish suitable for poly culture including pokkali farming practiced in Kerala.

This research breakthrough by CIBA would pave the way for expansion of fish farming, contributing to the blue revolution in the coming years. Representatives from the industry , fish farmers and fisheries scientists have welcomed this achievement.



CIBA established in 1987 served as the nodal agency for brackish water aquaculture in the country .Serving the sector for more than 25 years CIBA stands out as a premier National Institute in brackish water aquaculture research and is engaged in issues related to environment, seed and feed production, farm and hatchery construction, disease diagnosis, monitoring and advocating remedies etc.

Besides production oriented research CIBA also undertakes research to preserve natural resources like land water and energy ,to have more sustainable , eco- friendly and socio economically viable brackish water aquaculture in the country. CIBA being headquartered in Chennai, has a field station in Muttukadu about 30n km south of Chennai and a research centre at Kakadwip in West Bengal. The research activities of the Institutes are diverse in nature ,starting from basic to applied researches which were carried out under 14 in-house and 24 externally funded projects during 2014-15..

* M. Jacob Abraham, Deputy Director (Media and Communications), PIB, Chennai
** Srividhya M, Information Asst, PIB, Chennai