Brief Communication

Ranching for resilience and sustainability: Enhancing the Yellow-foot clam fishery in Ashtamudi Lake

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Captive broodstock maturation and hatchery seed production of Yellow-foot clam has been standardized in ICAR-CMFRI. Broodstock of *Paphia malabarica* collected from the Ashtamudi Lake matured under controlled hatchery environment. After two months of rearing in the hatchery, the clams spawned volitionally. Larvae were reared in FRP tanks with optimal water quality conditions (30-35 ppt salinity, 7.8-8.2 pH, and 28-31°C temperature). The larvae settled as spat on the 11th day post-hatch and were transferred to a micro-nursery system for further growth. After 50 days, the clam seeds reached a size of 3-5 mm and were oxygen-packed for transportation to the Ashtamudi Lake for ranching.

In October 2024, resource mapping surveys conducted by ICAR-CMFRI identified the spat fall of *P. malabarica* in Ashtamudi Lake, signalling a natural replenishment of the clam population. The spat fall was predominantly observed in the high-salinity zones of the Lake. To augment this natural process,3 million clam seeds were ranched on 17th December, 2024, by releasing the hatchery-produced clam seed of *P. malabarica* into the Lake. To facilitate the growth and survival of the clam seed, it was ranched during the closed season of clam fishing. The event demonstrated a collaborative effort among key stakeholders in the sector, fishermen of the area and members of scientific community and state fisheries officials. Dr. K. K. Appukuttan (Retd) who formerly headed the Molluscan Fisheries Division in ICAR-CMFRI was present for the clam-ranching programme in Ashtamudi Lake.

This initiative was designed to enhance natural clam stock in the estuary and ensure sustainability, reflecting the collective commitment of fishery managers and scientific communities to the conservation and enhancement of molluscan resources.The ranching program is a technology

demonstration to explore the feasibility of large-scale implementation. While releasing 3 million seeds may not significantly impact overall production, it demonstrates the potential of ranching in closed or semi-enclosed systems like lakes, rivers, and backwaters, where such practices have shown success in the past. The initiative also highlights ICAR-CMFRI's capability to scale up seed production to 100 million or more, encompassing oysters, clams, and mussels. This effort underscores the importance of stakeholder collaboration and scientific intervention in supporting sustainable fisheries to significantly enhance economic opportunities for local communities.