

Cage nursery of high-value fishes in brackishwater ponds

SEABASS, GROUPER, SNAPPER, POMPANO



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OCTOBER 2012

ISSN 0115-5369

Published and printed by:
Southeast Asian Fisheries Development Center
Aquaculture Department
Tigbauan, Iloilo, Philippines

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Aquaculture Department
Tigbauan, Iloilo, Philippines

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FOREWORD

Tasty and popular, reef fishes such as sea bass (*Lates calcarifer*), groupers (*Epinephelus* sp.), snappers (*Lutjanus* sp.), and pompano (*Trachinotus blochii*) have a strong market demand in Southeast Asia that can be supplied through fish farming or aquaculture. Capture fisheries has been in a downward spiral because of overfishing and coral reef destruction.

Marine fishes are part of the economically-important commodities under research-and-development at SEAFDEC/AQD. To ensure sustainability in aquaculture, AQD has taken steps to (1) develop hatchery technologies for the supply of quality seed, thereby minimizing dependence on fry catch from the wild; (2) formulate environment-friendly diets to replace trash fish as feed for the carnivorous reef fishes; and (3) develop and field-test nursery and grow-out culture technologies. This manual describes nursery culture techniques for high-value marine fish species developed at AQD.

The nursery phase of grow-out culture is a technology and a business in itself. Farmers need only source the fry from the hatchery, grow them to fingerling size and sell these to grow-out farmers who in turn will raise and sell the market-sized reef fish. By getting more players into the production chain, the risks in aquaculture production can be spread and fishfarms can earn more with shorter payback periods.

We hope that fishfarmers and other stakeholders would go into this business while we enjoin researchers & students to collaborate with us in further improving this technology in the future.



Felix G. Ayson, D. Sc.

Chief

SEAFDEC Aquaculture Department

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RATIONALE

The intensification in the grow-out culture of high value fish demands large quantities of quality fingerlings. Fingerling production is a component of fish farming and may be operated as a commercial enterprise for fish farmers with limited pond area. Fingerlings are produced from the nursery, where early juveniles (2–5 cm body length, BL) are grown to grow-out size (>10 cm BL) in concrete or canvass tanks, net cages or stocked directly in ponds, the latter being a common practice. However, direct-pond stocking often results to inconsistent survival. Seabass, snappers and groupers are carnivorous fishes and severe sibling cannibalism is observed during the young stages (<10 cm BL; body weight, <20 g) and when uneven sizes are stocked. Cannibalism was reported as the most common problem and the major cause of mortalities and losses during culture of juveniles.

The recent technique of using net cages installed inside a deeper pond to nurse early juveniles has improved survival and growth rates and produced uniformly sized-juveniles. Cage-rearing facilitates size sorting so sibling cannibalism is reduced and allows ease in feeding and handling of the fish. In case of disease infection, stocks are easily treated thus the spread of diseases is immediately prevented.

To feed carnivorous fishes, farmers rely heavily on trashfish which are seasonal in many places. The recent knowledge on the nutritional requirements of marine fishes especially on crude protein and crude fat in the diet resulted in the availability of better and nutritionally complete formulated feeds in the market. Supply of these diets is more stable than trashfish which is also a possible carrier of disease-causing organisms.

The aquaculture of high-value marine fishes continues to develop in Southeast Asia and an improvement in the nursery production technology will soon provide sufficient supply of good quality fingerlings needed for intensive grow-out culture.