

Southeast Asian Fisheries Development Center

Aquaculture Department

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Pond culture of tilapia

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Pond culture of tilapia

Pond preparation

Ponds are prepared for cropping by drying, levelling, and liming the bottom (if necessary). Fish predators and competitors are eliminated, and the ponds are fertilized to grow natural food.

For extensive fish culture, two types of natural food are grown: *lab-lab* and plankton. In the *lab-lab* method, the pond is fertilized with chicken manure at 1-2 tons/ha and diammonium phosphate (18-46-0) at 1-2 tons/ha. Water depth in the pond is maintained at 30-40 cm. In the plankton method, the pond is fertilized every two weeks with 50 kg/ha of ammonium phosphate (16-20-0) set in submerged platforms or suspended sacks. Water depth is maintained at 0.8-1 m.

Stocking

Monosex or sex-reversed fingerlings of the hybrids of Mozambique tilapia and Nile tilapia are stocked when adequate food (*lab-lab* or plankton) is available, about 1-2 weeks after fertilization. The stocking densities are shown below. Fingerlings are acclimated to pond water salinity and temperature before release.

Culture method	Stocking (fingerlings/ha)
Extensive	
<i>Lab-lab</i>	5000 - 10 000
Plankton	10 000 - 20 000
Semi-intensive	20 000 - 40 000
Intensive	40 000 - 50 000

Pond management

Maintenance of good water quality and adequate food is essential. Water should be kept at the desired depth and fertilization or feeding applied as recommended. In farms entirely dependent on tidal flow, pumping water is necessary during the dry season. Needless to say, polluted water should not be used.

In semi-intensive culture, a 1-m water depth is maintained. Inorganic fertilizer is applied as in the plankton method until the third month of culture. In the fourth month, fine rice bran is given as supplement at 5% of fish body weight daily.

In intensive culture, pond management and feeding are the same as in semi-intensive culture during the first three months. In the fourth month, a complete feed with at least 20% crude protein is given at 3% of biomass per day. Pond water is changed at the rate of 10-20% per week especially during the last month of culture. It is good practice to visually check water quality and condition of the fish at least once a day. Sampling of fish at least once a month enables the culturist to monitor fish growth.

Harvest and marketing

Fish are harvested after three or four months, depending on the size desired for market. Market size ranges 100-200 g/fish.

In partial or selective harvest, bigger fish are caught by cast net or seine. In total harvest, the pond is first partially drained and most of the fish seined. Then, the pond is totally drained to recover the remaining fish. With good management, a survival rate of 80-90% can be expected.

The harvested fish should be properly handled. If the market is nearby, no ice is needed to preserve the freshness and normal color of the fish as long as they are kept cool and moist. For long-distance transport and marketing, fish should be chilled in ice water (4°C) after seining and washing in clean water, and then packed in closed styrofoam boxes with crushed ice interspersed between the layers of fish at a ratio of 1 kg ice to 4 kg fish.

Market price for tilapia varies with season and size of fish. It usually goes up on full-moon days, fiestas, and during the lean fishing months from October to March.

Source: PCAMRD. 1990. *Brackishwater pond culture of tilapia in the Philippines*. Fisheries Technology Manual Series No. 5. Los Baños, Laguna, Phil.: DOST/Phil. Council for Aquatic and Marine Research and Development.