

# SEED PRODUCTION OF **TILAPIA**



Nile tilapia  
*Oreochromis niloticus*

Known as the “aquatic chicken,” the **TILAPIA** is a poor man’s fish that grows fast and breeds easily in captivity. It is considered as one of the easiest fishes to culture. It is also relatively tolerant to a wide range of salinity & temperature levels. Moreover, farming tilapia requires minimal inputs.

## TECHNOLOGY PROFILE

Tilapia hatcheries are of three types: (1) concrete tanks, (2) netcages in lakes, and (3) ponds. Concrete tanks give the highest production followed by hapa netcages in lakes and ponds. One of the reasons for the difference in seed production is the quality and varying temperature in the rearing water used for spawning. Spawning is observed to be better if water temperature is within 29-31°C. Concrete tanks have the highest seed production since water quality management can be easily done and controlled while water quality in netcages and ponds are easily influenced by climatic changes. Another cause for poor seed production in netcages and ponds is the seedstock harvesting method and the presence of non-tilapia species that prey on the eggs/hatchlings. Putting up tank hatchery facilities, however, requires high initial capital which is too costly for small-scale hatchery investors.

## HATCHERY and NURSERY

### Hatchery in netcages

1. Install 3 x 10 x 0.75 m fine-meshed netcages in ponds or 3 x 10 x 1.5 m fine-meshed netcages in lakes
2. Stock four breeders per square meter (3 females and 1 male)
3. Feed breeders at 3% of total biomass with tilapia feeds containing 40% protein
4. Check for the presence of fry three weeks after stocking the breeders
5. Collect fry and transfer to nursery netcages
6. Place breeders in separate holding facilities and continue feeding them high-protein tilapia feeds for the next breeding cycle

### Nursery in netcages

1. Stock 800-1,000 fry/m<sup>2</sup> in netcage
2. Feed fry with tilapia feeds to avoid or minimize cannibalism
3. Sort fry after two weeks
4. Re-stock fingerlings according to size in separate netcages
5. Transfer fingerlings to grow-out enclosures when total length is 37 mm (size 17) to 46 mm (size 14)

### Financial indicators

Technical assumptions for a small-scale netcage-based hatchery	
No. of broodstock, 1,600 female : 400 male	2,000
Effective female per cycle (%)	0.8
Fry production per female broodstock (pcs)	200
Production per cycle (pcs)	179,200
Number of cycles per month, 42 days	2
Productive months per year	10
Production per month (pcs)	358,400
Recovery after one month (%)	70
Production per year (pcs)	3,584,000
Farm gate fry selling price, size 22 (PhP/pc)	0.45
Costs-and-returns	
Total variable cost (PhP)	436,000
Total fixed cost (PhP)	450,000
Internal rate of return (%)	146
Net income per year (PhP)	1,582,600
Return-on-investment (%)	163
Payback period (years)	0.48



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Female broodstock (*Oreochromis niloticus*) with eggs in its mouth



A fixed cage module



Tilapia fingerlings