



REPUBLIC OF THE PHILIPPINES
DEPARTMENT OF AGRICULTURE
BUREAU OF FISHERIES AND AQUATIC RESOURCES
REGIONAL OFFICE NO. 5

Culture of Red Tilapia in Freshwater Cages



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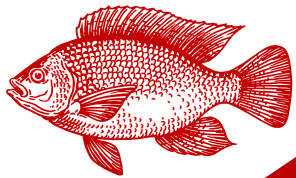
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Produced by:
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(DA-BAR Funded Red Tilapia Project)
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Red Tilapia is now a promising species for pond and cage culture and has created a demand for technology advances. It is considered a high value food fish because of its high demand in high-end restaurants due to its color and taste, emulating other expensive marine species.

Red Tilapia was originally from genetic mutants of *Oreochromis niloticus*, *Oreochromis mossambicus* and *Oreochromis aureus*. The first red tilapia, produced in Taiwan in the late 1960s, was a cross between a mutant reddish-orange female Mozambique tilapia and a normal male Nile tilapia. It was called the Taiwanese red tilapia. Another red strain of red tilapia was developed in Florida in the 1970s by crossing a normal colored female Zanzibar tilapia with red-gold Mozambique tilapia.

A third strain of red tilapia was developed in Israel from a mutant pink Nile tilapia crossed with wild *Oreochromis* species.



Culture Method

Site Selection

The chosen site should have a water depth of at least 2 meters and with adequate spaces. Water source should be clean and free from both domestic and industrial pollution. The site should also be safe from rapid water current and floating debris, and is accessible to fish landing site.

Installation of Bamboo Poles and Fish Cages

The cage size can be 5m x 5m x 1.5m or 5m x 10m x 1.5 m and is made of double C-net or knotted type of similar mesh size. The cage is attached to a bamboo frame secured with bamboo posts at equal intervals around the cage if stationary. In floating type, the cage is attached to a flotation framework to keep the upper part afloat while the bottom portion is attached with sinkers to keep the cage net stretched. The cage framework is attached to a mooring system to keep or secure it in place.

Stocking

The cages are stocked at a rate of 30-35 pieces per cubic meter with size #14 red tilapia fingerlings.

Feeding

Daily feeding of stocks is done at 8am and 4pm with commercial feeds (30-33% CP).

TYPE OF FEEDS	FEEDING RATE	DURATION
STARTER	8%	1 MONTH
CRUMBLE	5%	2 MONTHS
GROWER	3%	2 MONTHS

Monitoring/Maintenance of Fish Cages

Daily monitoring is very important to check for holes and tears that need immediate repair and also to remove floating debris that can damage the nets. It is important to check daily, a) the cage net from damage and mend it immediately, b) any floating debris lodging in the structure should

be removed, and c) the bamboo structure from damage and repair it immediately. Brush the net regularly to remove any fouling organisms that prevent the efficient water exchange in the cage/s.

Harvesting

The stocks are harvested after a 5-month culture period when they reach marketable sizes of 4-5 pc/kg. Never feed the stock at least 24 hours before harvest to prevent bursting of the belly when the fish are displayed in stalls during marketing.

Marketing

The harvested red tilapia are sold in public markets or to other consumers.

SIMPLE COST AND RETURN ANALYSIS FOR FRESHWATER CAGE CULTURE OF RED TILAPIA			
TOTAL PRODUCTION (KG.)	975 KGS		
PRICE PER KILO (P)@ FARM GATE PRICE	P 120.00/KG (FARM GATE PRICE)		
GROSS INCOME (P)	P117,000		
MATERIALS	UNIT	COST PER ITEM	TOTAL COST
FIXED COST (A)	----	----	----
FISH CAGE CAPACITY 112.5 (CU.M)	----	----	----
BAMBOO (FULL LENGTH)	35	P200	P7,000.00
PE ROPE NO. 14	2	P1,800	P3,600.00
PE ROPE NO. 24	15M	P36/M	P540.00
PE NET DOUBLE C	1 ROLL	P8,000	P8,000.00
PE TWINE NO. 2	8 SPOOLS	P50/SPOOL	P400.00
NETTING NEEDLE (SIKWAN)	4 PCS	P5.00/PC	P 20.00
LABOR (35%)			P42,196.00
SUB-TOTAL			P 162,750.00
VARIABLE COST (B)			
RED TILAPIA FINGERLINGS STOCKING DENSITY- 35 PCS /CU M. X 112.5 = 3937.5 PCS FINGERLINGS	4,000 PCS	P0.25	P1,000.00
FEEDS (FCR-2)	8 SACKS STARTER 31 SACKS GROWER 39 SACKS FINISHER	P 1,300 P 1,110 P 1,100	P10,400.00 P34,410.00 P42,900.00
MISCELLANEOUS			P5,000.00
SUB-TOTAL			P93,710.00
NET INCOME			P23,290.00
ROI			24%
TOTAL INVESTMENT COST (A+B)			P256,460.00