

# INTENSIVE TILAPIA HATCHERY TECHNOLOGY

**Aqua Farming Tech, Inc.  
Thermal California, USA**



THERMAL FARM IN THE COACHELLA VALLEY, CA

## I. CONDITIONING OF BREEDERS

- Done by stocking the male and female breeders in separate compartment/fishponds
- Breeders were given supplemental feed with high crude protein content (40%)
- Aqua Farming Tech, Inc is formulating feed based on breeder requirement to ensure high production

## II. PREPARATION OF THE BREEDING POND

- Fishpond is allowed to completely drain first so that all the previous stocks are collected
- Pond bottom is tilled using a tractor
- If necessary, hydrated lime is applied all over the pond bottom.
- Breeding pond is prepared in such a way that the pond bottom is soft and leveled for ease of the male breeders in building their nest.
- Pond is filled with water to a depth of 0.75 to 1.0 meter thus completing the pond preparation.

### III. SELECTION AND STOCKING OF BREEDERS

- Hatchery operators and hatchery workers must have skills in selecting healthy female breeders that are ready to spawn and male breeders that are ready to mate.
- A ready to spawn female breeder has swollen papillae and distended abdomen, while a ready to mate has protruding reddish urogenital papillae.
- The average weight of breeders to be stocked in the breeding pond is about 500g or more

## IV. HATCHERY FACILITY AND PARAPHERNALIAS

- Facilities and paraphernalias should be prepared first before collection of eggs from female breeders in the breeding pond
- Facilities and Paraphernalias needed:
  - ✓ Seine nets
  - ✓ Pails
  - ✓ Breeders bed
  - ✓ Scoop net
  - ✓ Hauling unit
  - ✓ Set up of artificial incubation system
    - Incubation jars
    - Aeration system
    - Fry troughs
    - Water supply
    - Paint brush
  - graders
  - funnel
  - beaker (500 ml)
  - stainless mug (500 ml)
  - transport unit



**Breeders bed and seine net**



**Transport Unit**



**Stainless mug, beaker and Funnel**









**EGG GRADER**



**Fry Grader**





**Hatchery paraphernalia on the wall**



**Incubation jars**



**Hatchery Set up**



**Aerated water supply**



## V. COLLECTION OF EGGS FROM BREEDING PONDS

**Collection will commence seven to ten days after stocking of ready to spawn and ready to mate breeders.**



**Breeders will be seined towards the area where the “baklad” is installed.**



**Breeders will be trapped where they will be scooped and put into the breeders bed**



**Eggs in the mouth of female breeders will be collected and will be transferred to pails**



**Eggs will be immediately transported to the hatchery**



**Breeding Pond**



**Seining of breeders**



**Preparing the breeders bed**



**Enclosing the seined breeders with "baklad"**



**Scooping of breeders**



**Checking female's mouth for presence of eggs**



**Collecting eggs from females  
mouth**



**Transport of eggs to the hatchery**

MONDAY TUESDAY WEDNESDAY THURSDAY FRIDAY SATURDAY SUNDAY

SPAWNING DATE

AMOUNT OF EGGS IN (ML)

EGGS/ML

TOTAL

3-2-16	S-2 6,000 ML	151.8/ML	6,000 x 151 = 910,800
3-9-16	S-2 3,400 ML S-1 950 ML		3,400 + 950 x 150 = 645,000 - 4,350
3-16-16	S-2 4,100 ML	165/ML	4,100 x 150 = 615,000
3-17-16	S-1 800 ML S-1 500 ML } 1,300		1,300 x 165 = 214,500
3-23-16	S-1 S-1		500,000
3-30-16	S-2 4,100 ML		2,384,800 MICELIUM
4-6-16	S-1 1,000 ML		615,000
4-13-16	S-2 1,500 ML	150/ML	375,000
4-20-16	S-2 - 1,800 ML 1,700 ML 200 ML	150/ML	450,000
	3,500 ML		
10-27-16	S-1 1,800 ML 3,200 ML	150/ml	750,000
11-3-16	5,500 ML 3,500 ML of eggs	220 eggs/ml	770,000 eggs SABEL



## VI. CLEANING OF EGGS, ESTIMATION AND TRANSFERRING TO INCUBATION JARS

Collected eggs in fry troughs will be cleaned in flowing water separating dirt from the eggs



Quantity of eggs will be estimated by putting them in a 500ml stainless mug



Based on Aqua Farming Tech, Inc. 1 ml:120-165 pcs eggs



Eggs will be transferred to a 500 ml beaker for easy transferring to incubation jars



Eggs will be passed through a funnel directing it to the incubating jars



**Cleaning of eggs**





## Estimation of Eggs







**Sampling/Counting of eggs**



**Transferring of eggs to incubation jar**

## VII. EGG INCUBATION, HATCHING OF EGGS AND GRADING OF SWIM-UP FRY

**Eggs will stay in incubation system for three days or until all eggs are hatch to swim up fry.**



**Swim up fry will be graded before transferring to fry troughs for further rearing**



**without direct contact to the fry, it will be released in the pail that is placed at the bottom of the outlet of the fry trough by opening the outlet hole of the fry trough**



**To completely collect the fry, let the water flow and push the remaining fry towards the outlet using paint brush**

**Put collected fry in the grader**



**The remaining fry in the grader will be set aside by putting the fry to another pail**



**Continue activity everyday until all the eggs are fully hatch to swim up fry.**



**Eggs in the incubation jar**



**Newly hatch fry from incubation jar**



**Collecting all newly hatched fry**



**Collection of fry for transferring to rearing fry trough**



**Prepared fry trough with grader**





**Cleaning of pail**



**Grading of fry**



**Rearing fry troughs**

## VIII. FRY REARING IN FRY TROUGH

**Feeding will be done every four hours  
(level of water in troughs should be lowered before feeding)**



**Simultaneous cleaning of fry trough should be done by brushing  
the walls using a sponge**



**When water is already shallow, saturate the fry with feeds**



**Raise water to desired level**



**Fry will stay in the fry trough for one week before it will be  
transferred in the nursery tanks.**



**Rearing fry troughs**



## IX. TRANSFERRING, REARING AND FEEDING OF FINGERLINGS IN THE STAINLESS NURSERY TANKS

**Transfer fry from hatchery to stainless nursery tanks for further rearing and growing to size until fish is ready to be transferred to large circular/rectangular concrete tanks**



**Fish in nursery tanks is fed four times daily**



**Monitoring of the condition of fish, regular cleaning of the tanks and regular feeding are the activities to be undertaken.**



## Estimation of fry





**Collected fry fro transfer to nursery**





**Stocking of fry to nursery tank**



**Cleaning of nursery tank**



**Feeding of fry in nursery tank**

## X. TANK PREPARATION AND STOCKING OF FINGERLINGS TO CONCRETE CIRCULAR/RECTANGULAR TANKS

**Fingerlings are further grown to juvenile size at concrete tanks**



**Tanks are cleaned by brushing the walls and floorings before being stocked**



**Water will be allowed to enter then after sometime, the water will be washed out**



**Once tank was thoroughly cleaned, feeds will be broadcasted**



**For circular tanks, ring of feeds will be broadcasted by hand one foot apart while in rectangular tank, feeds are broadcasted in a straight line way**



**Application of fry feed**



**Ring of Feeds**



**Filling of water in circular tank**



**Stocking of fingerlings**



