

# Fry Monosex Production



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# Layout of Kamphaengsaen Fisheries Research Station



**Area=160,000 m<sup>2</sup>**

**Pond=3,200 m<sup>2</sup> (11)**

**Pond=800 m<sup>2</sup> (28)**



# Objectives

- To support learning and training
- To research and develop new technology
- To published and help about aquaculture

คณะประมง  
FACULTY OF FISHERIES  
สถานีวิจัยประมงกำแพงแสน  
KAMPHAENSAEN FISHERIES RESEARCH STATION

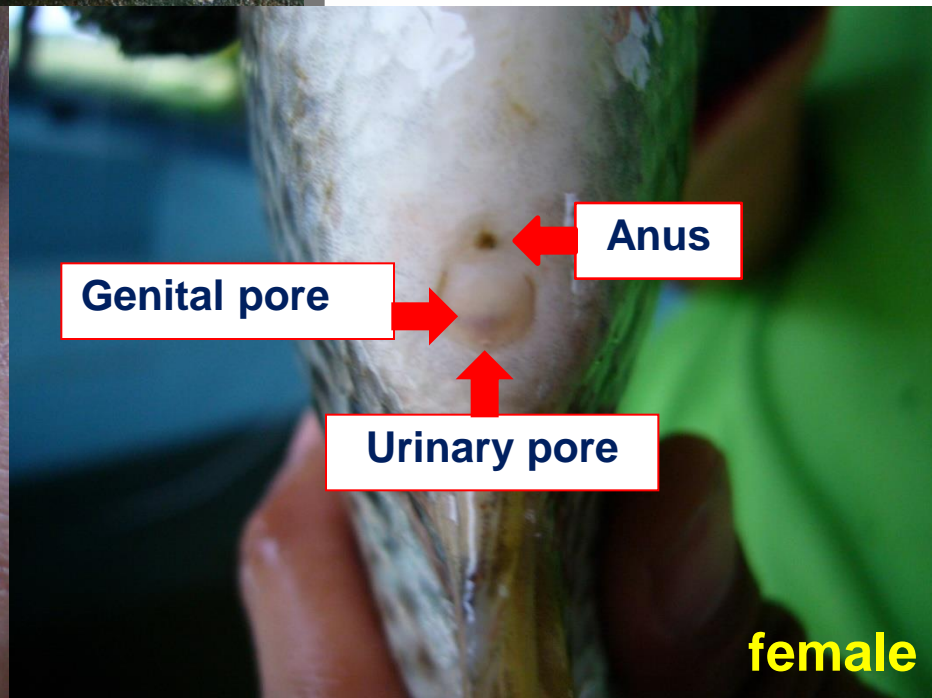
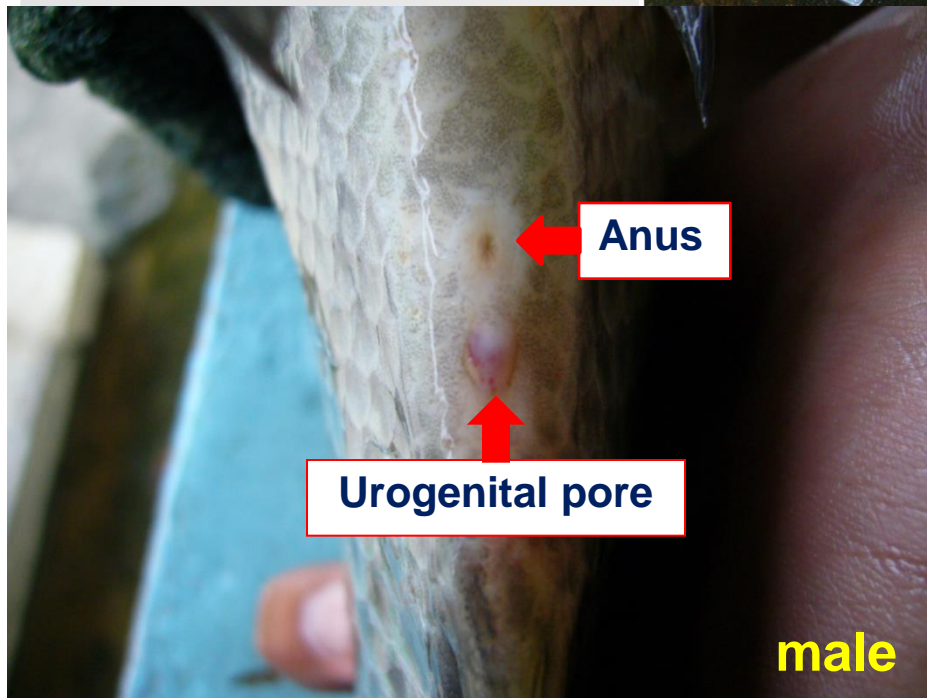


# Characteristic of male and female tilapia



**Size :** Male biggest than female

**Color :** Male more dark than female





# Broodstock

Hapa

Tank



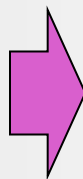


# Natural breeding of Tilapia



**Select mature  
brood stock**

**Age  $\geq$  6 month**



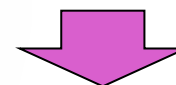
**Weighing and  
measure size**

**Size 200 g**



**Mated male and  
female**

**1 : 3-4**



**Ratio male and female  
1:3 or 1:4**

**Feed 1% body weight**

**Density 6 fishes/m<sup>2</sup>**



**Collect egg  
every week**

# Collecting and Management Egg of Tilapia



Select female fish, open mouth, bring into water bowl to separate eggs by stage



Clean eggs



Select cleaned egg



Weighing

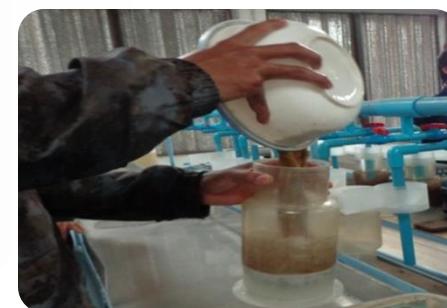
Temperature control 30-32°C



Transfer hatched larvae into nursing tray



Apply water flow



Transfer into incubation jar



# Incubator jar





# Incubator jar





# Tray

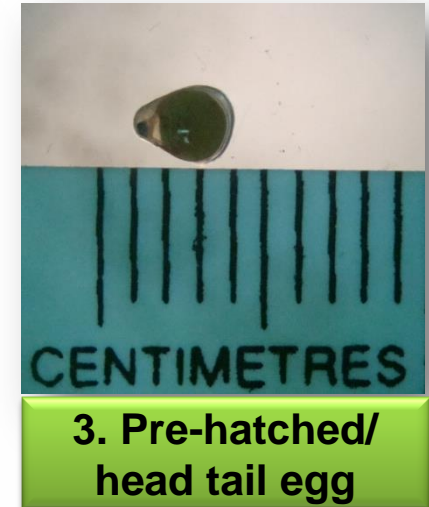




# Tray



# Embryonic Stage of Tilapia





# Nursing of Tilapia



**Fry are stocked at 3,000-4,000/m<sup>2</sup> in hapas.**

# Mixed Feed with Hormone

17 $\alpha$  methyltestosterone, MT



> 40 % protein

Prepare feed (fish meal +rice blend)



Mix with hormone about 0.06g/kg feed

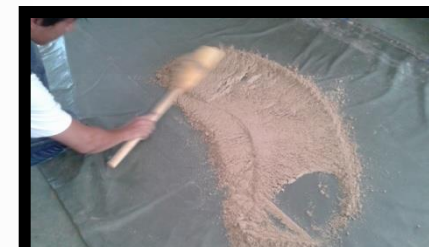


Add 240 ml/kg feed of 95% Ethyl alcohol

MT 0.06 g : Alc 240 ml : Feed 1 kg



Feeding until 23 days



Stored under dark, dry

Dry the feed about 6 hours before feeding



# Feeding hormone

Use powdered feed containing MT, Feed is 5 times/day

30% weight of fish

20% weight of fish

15% weight of fish

Swimmer fry

10 Days

20

23

30 Days



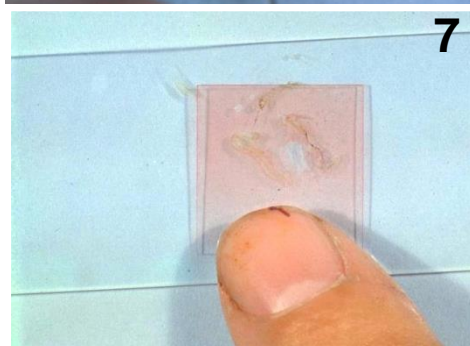
2x2x1.2 m



2x4x1.2 m



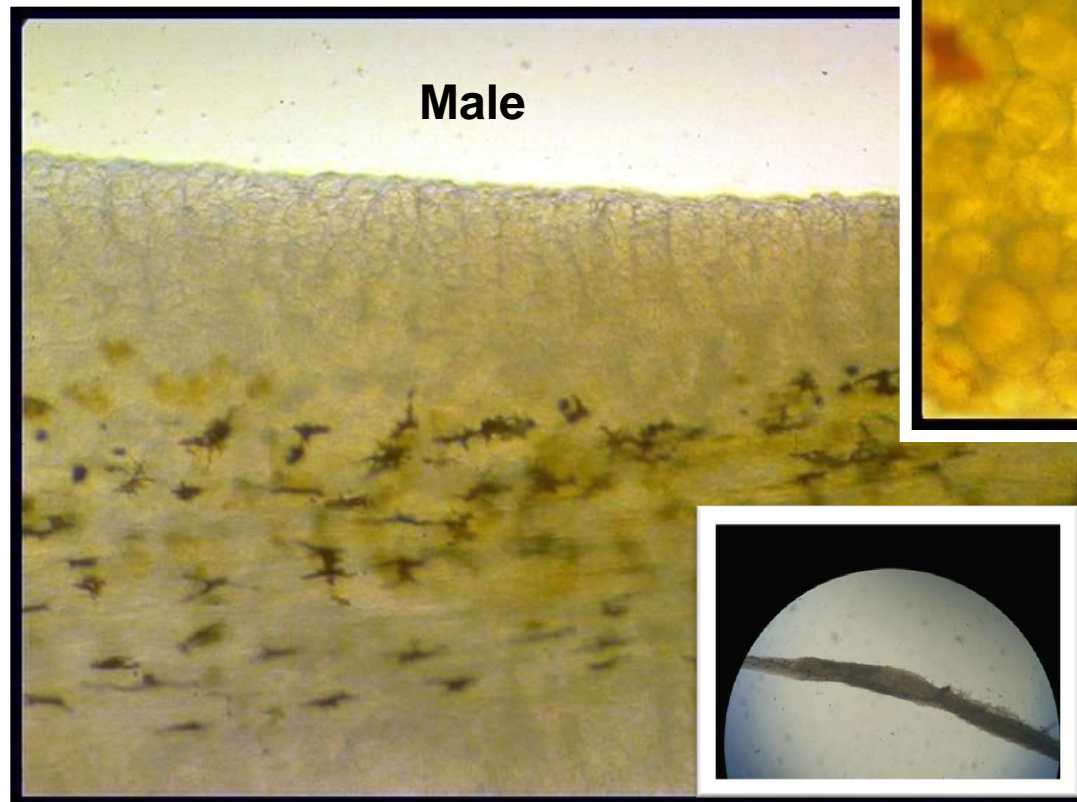
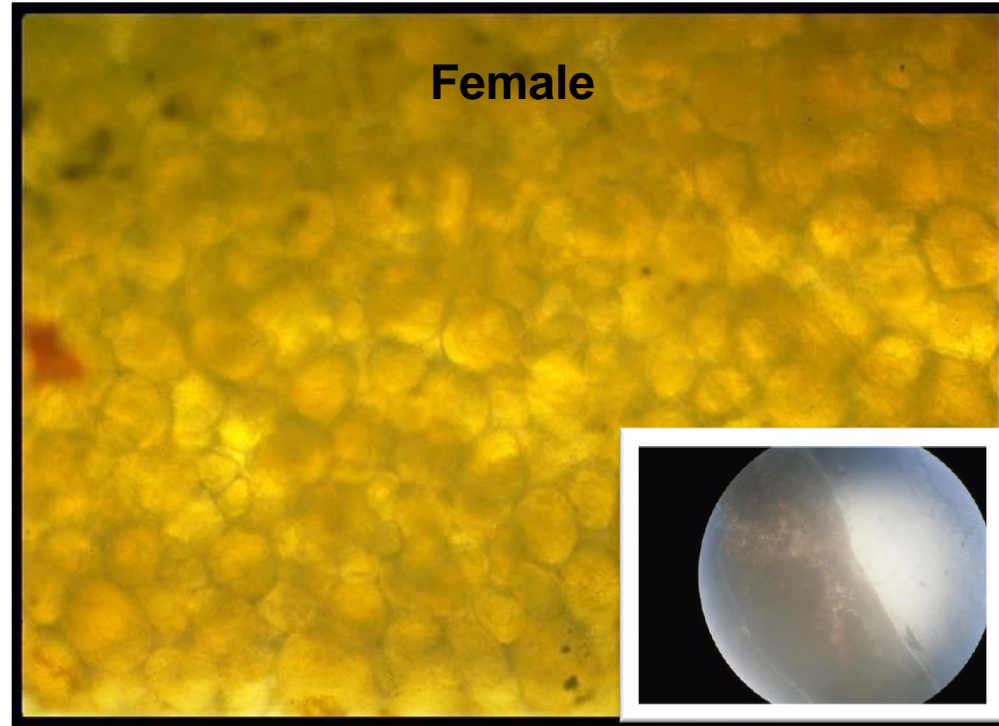
# Identification of gonad





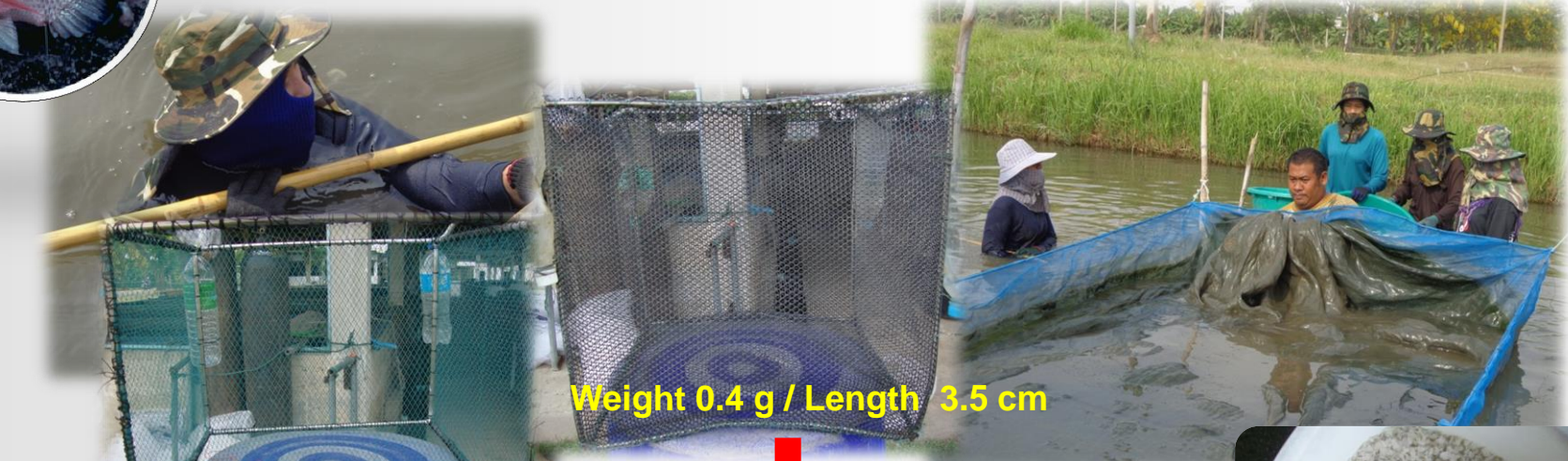
# Sex differentiation

**Male > 98%**

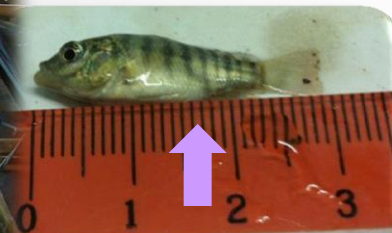




# Fry can sell based on size



Weight 0.4 g / Length 3.5 cm



Weight 0.3 g / Length 3 cm

sizes 1,000 = 0.3g / 3 cm

## Packaging

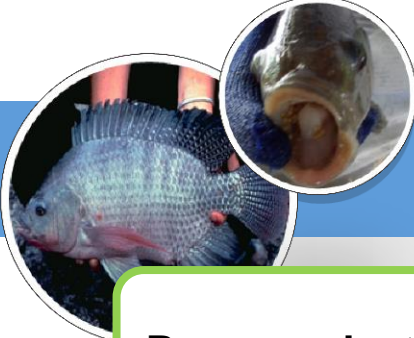




# Selection size



# How to do packaging?



**Prepare plastic bag  
for packaging  
(2 layers of plastic)**

**Prepare water with  
salt about  
3 ppt**

**Put activated  
carbon into plastic  
bag about  
3-5 grams**

**Put acryflavin  
into plastic bag  
about 1 – 2 ppm**

**leave about  
> 24 hr**

**Put water that  
mixed with salt Into  
bag about  
3-4 liter**

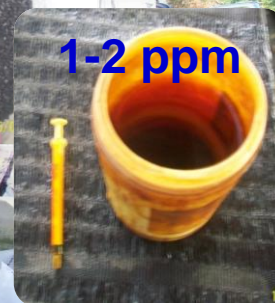
**Put fry:  
Size 800  
Size 1000**

**Tied plastic  
bag and do  
transportation**





# Packing



# Conclusion

- Sexual maturity at 6 month, average 200 g
- The stocking ratio for males to females is 1:3-4, 6 fishes/m<sup>2</sup>
- In hatchery control temperature 30-32°C
- MT is added to powdered feed, containing > 40 %protein
- The sex-reversal > 98% depending on the intensity of management





Thank You For  
Your Attention

