

# DOMESTICATION, GENERATION AND DEVELOPMENT OF GIANT BARB (*Catlocarpio siamensis* BOULENLER 1898)



# INTRODUCTION

- Belonged to common carp family of Cyprinidae, distributed in the Mekong river. The fish is of big size, with flesh of good taste preferred by many people.
- In the past, giant barb was farmed together with other species, e.g. tra catfish, silver barb, Tilapia. However, the farming ratio was very low due to scarce availability in the wild. The fish can reach a weight of 2 – 3 kg/individual after 1 year.



# INTRODUCTION

- Scarce availability in the wild.
- Fishermen turned to other species.



# BROODSTOCK DOMESTICATION

- After being collected, giant barbs are raised together with Tilapia, silver barb, common carp, etc. in order to get used with artificial feeds.
- Home-made feeds, or pellet feeds with protein ratio of 25 – 28%, portion of 2 – 3% BW, added with 0.1 – 0.2% of kawa fruit and vitamin C, E 0.1%.

# BROODSTOCK GROWING I

- Average weight of broodstock: 8kg
- Pellet feed with 26 – 30% protein
- Portion 2 -3%, added with 0.1 – 0.2% of kawa and 0.1% vitamin C, E.
- Water change is carried out in every 2 week for 20 – 30% of water volume.



# INDUCED ARTIFICIAL BREEDING

Year	Stimulator	Preliminary dose/kg		Decisive dose/kg	
		Female fish	Male fish	Female fish	Male fish
2006	PG (mg) LH-RHa ( $\mu$ g) DOM (mg)	1.5 – 2.5		1.5 -3 150 – 180 15 – 18	0.75 75 – 90 7.5 – 9
	PG (mg) HCG (UI)	1 500		3.5 2,000	1.75 1,000
2007	PG (mg) LH-RHa ( $\mu$ g) DOM (mg)	1.5 – 2.5		1.5 -3 150 – 180 15 – 18	1.5 -3 150 – 180 15 – 18
	PG (mg) HCG (UI)	1 – 2.5 500		3.5 – 4 2,000 – 4,000	1.75 – 2 1,000 – 2,000
2008	PG (mg) HCG (UI)	2 – 2.5 500		4 4,000	2 2,000



Stimulator injection



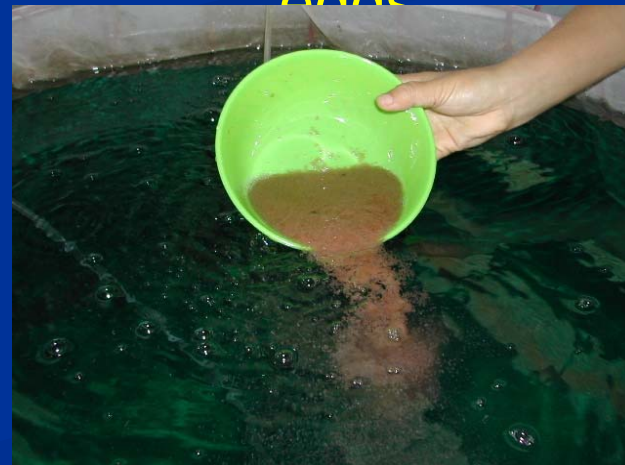
Collection of male fish's sperm



Collection of female fish's eggs



Artificial fertilization



Egg incubation



# FRY NURSING

## 2-stage method:

- Stage 1: from 1 – 30 days of age, nurse in tanks with density of 200, 400 – 500 and 1,000 individuals/m<sup>2</sup>
- Stage 2: from 31 – 60 days of age, nurse in earthen ponds with density of 50-200 individuals/m<sup>2</sup>

Direct nursing in pond



# BREEDING CRITERIA

Criteria	
Maturation rate in 2005 (%)	Male fish: 25, female fish: 18
Maturation rate in 2006 (%)	Male fish: 74, female fish: 79
Maturation rate in 2007 (%)	90,6
Maturation rate in 2008 (%)	Male fish: 80, female fish: 87,6
Time for re-maturation (days)	30 – 60
Broodstock size in 2008 (kg)	9 – 28
Maturation coefficient (%)	1.6-5.2
Relative breeding capacity (egg/kg)	20,000
Egg diameter (mm)	$1.17 \pm 0.09$

# BREEDING RESULTS IN 2005, 2006, 2007, 2008

Year	Number of female fish (individual)	Average actual breeding capacity (egg/kg)	Fertilization rate (%)	Hatching rate (%)
2005	6	14,099	54.7	38.7
2006	9	21,048	40.8	64.6
2007	35	8,868	33	66.9
2008	34	18,417	39.7	55.18

# RESULTS OF FRY NURSING (2-stage method)

Year	Average survival rate (%)			
	From 1 – 30 days of age		From 31 – 60 days of age	
	Composite tank	Cement tank	Composite tank	Cement tank
2005	11.13 ± 9.79		6.96 ± 5.78	
2006	46.92 ± 25.07	37.74 ± 19.25	64.13 ± 19.3	30.69 ± 21.33
2007	57.32 ± 16.67	43.44 ± 9.51	66.70 ± 20.49	53.32 ± 25.01
2008		86.58 ± 8.17		63.96 ± 10.00

# RESULTS OF FRY NURSING (direct nursing in ponds)

Year	Average survival rate (%)
2005	1.27
2006	13.96
2007	15.18
2008	54.8 ± 17.7

# FRY GROWTH (2-stage method)

Growth rate			Survival rate (%)
Day	Weight (g)	Length (cm)	
10	0.05 ± 0.01	2.1 ± 0.16	
20	0.12 ± 0.02	2.8 ± 0.14	
30	0.2 ± 0.05	3.0 ± 0.21	86.58 ± 8.18
40	0.7 ± 0.03	4.09 ± 0.62	
50	0.8 ± 0.02	4.5 ± 0.85	
60	1.02 ± 0.04	4.9 ± 0.68	63.96 ± 10.00

## FRY GROWTH (direct nursing in ponds)

Growth rate			Survival rate (%)
Day	Weight (g)	Length (cm)	
10	0.16 ± 0.18	2.66 ± 0.12	
20	0.32 ± 0.07	3.8 ± 0.22	
30	0.57 ± 0.13	3.51 ± 0.31	
40	0.86 ± 0.28	4.80 ± 0.40	
50	1.53 ± 0.63	5.8 ± 0.62	
60	2.18 ± 0.47	6.18 ± 0.72	54.8 ±
			17.70



**THANK YOU VERY MUCH!**