Leopard coral groper larval rearing at Nha Trang

ISHIBASHI norihisa, JICA Expert

Nguyen Thi Thu Hien, MRDC-RIA3

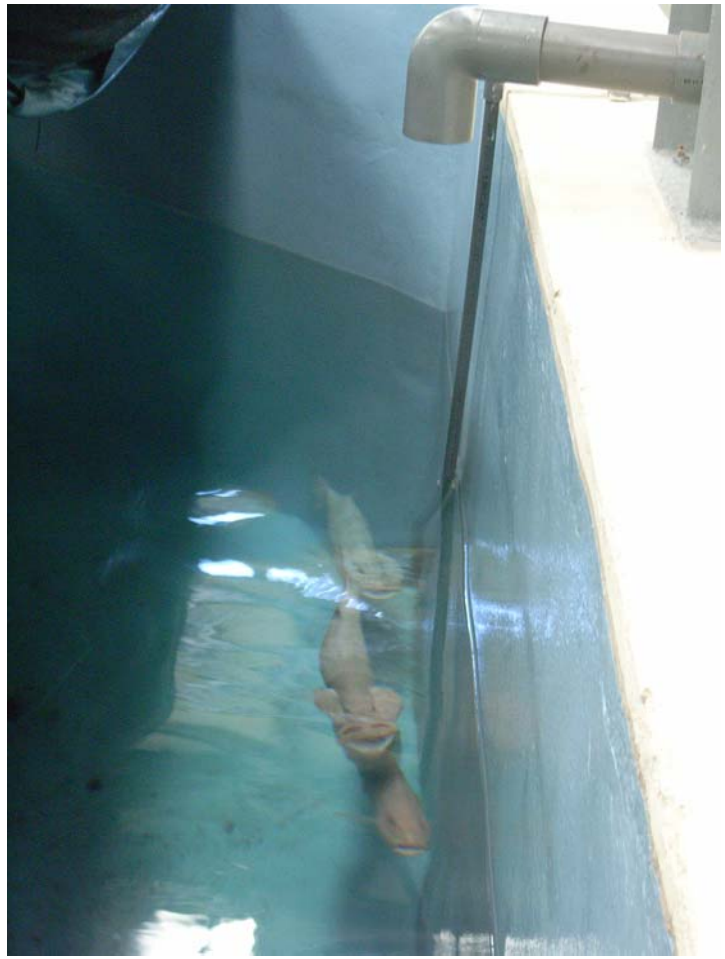
Leopard coral grouper、 *Plectropomus leopardus*

Mariculture Research and Development Center of Research Institute for Aquaculture No3, Nha Trang

Mariculture Research and Development Center of Research Institute for Aquaculture No3, Nha Trang

Mariculture Research and Development Center of Research Institute for Aquaculture No3, Nha Trang

Broodstocks rearing tank,100kl



Broodstocks

Broodstocks of cultured Leopards coral trout at MRDC

2007/1/31	Sex	No.	BW (kg)	T.L (cm)
	♀	4ind.	2.4-3.5	55-57
	♂	2	4.9-5.8	68-76
	?	7	2.2-4.0	55-63
2007/3/22	Sex	No.	BW (kg)	T.L (cm)
	♀	6ind.	2.6-3.4	54-59
	♂	2	5.6-5.8	65-76
	?	5	2.3-3.8	54-66
2007/7/5	Sex	No.	BW (kg)	T.L (cm)
	♀	2ind.	3.0-3.1	58-60
	♂	2	4.5-5.3	67-75
	?	5	2.2-3.7	55-63

Spawning of cultured Leopardd coral grouper at MRDC

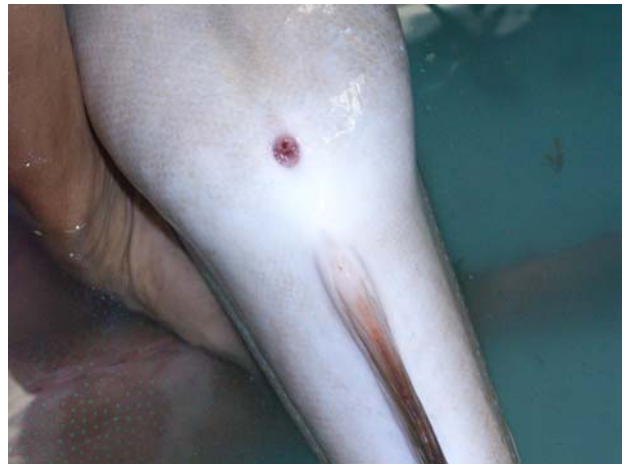
period	times	no. of egg	floating egg	sinking egg	fertilization rate
2007/2/11 ~ 6/14	32	$6{,}924X10^3$	$3{,}165X10^3$	$3{,}759X10^3$	46%

Number of spawning eggs per one time

Number of spawning eggs	spawning tims
eggs>1000,000	1
1000,000>eggs>100,000	12
100,000>eggs	19

Max : 1,045,000 Min : 38,000

Maturation check test with silicon tube



Spawning core of Ripe female

Egg collector

Measure of eggs

Collecting eggs

Put eggs to separate tank

Collecting fertilized eggs by hand net

Larval rearing tank、5ｋｌ

Air supply from center

Water surface cleaner

Supply Nanochloropsis

Air supply with wall

Harvest larvae at 40days after hatching

2.5 kl rearing tank from 40days after hatching

Juveniles in rearing tank

Table 2. Some environment factors during rearing.

Date (old day)	Temperature (^{0}C)	DO (mg/L)	pH
28/03-06/04 (1-10)	$\frac{26,9 - 27,5}{27,15}$	4,38 – 5,5	7,7 – 8,1
02/04-16/04 (11-20)	$\frac{27,2 - 27,8}{27,42}$	4,39 – 5,3	7,6 – 8,0
17/04-26/04 (21-30)	$\frac{27,9 - 28,2}{28,01}$	4,42 – 5,3	7,7 – 7,9
27/04-05/05 (31-40)	$\frac{27,5 - 28,5}{27,97}$	4,39 – 5,4	7,7 – 8,0
06/05-15/05 (41-50)	$\frac{28 - 28,5}{28,2}$	4,48 – 5,38	7,6 – 7,9
16/05-20/05 (51-55)	$\frac{28 - 28,8}{28,44}$	4,5 – 5,4	7,7 – 7,9
	salnility (ppt)	34 - 35	

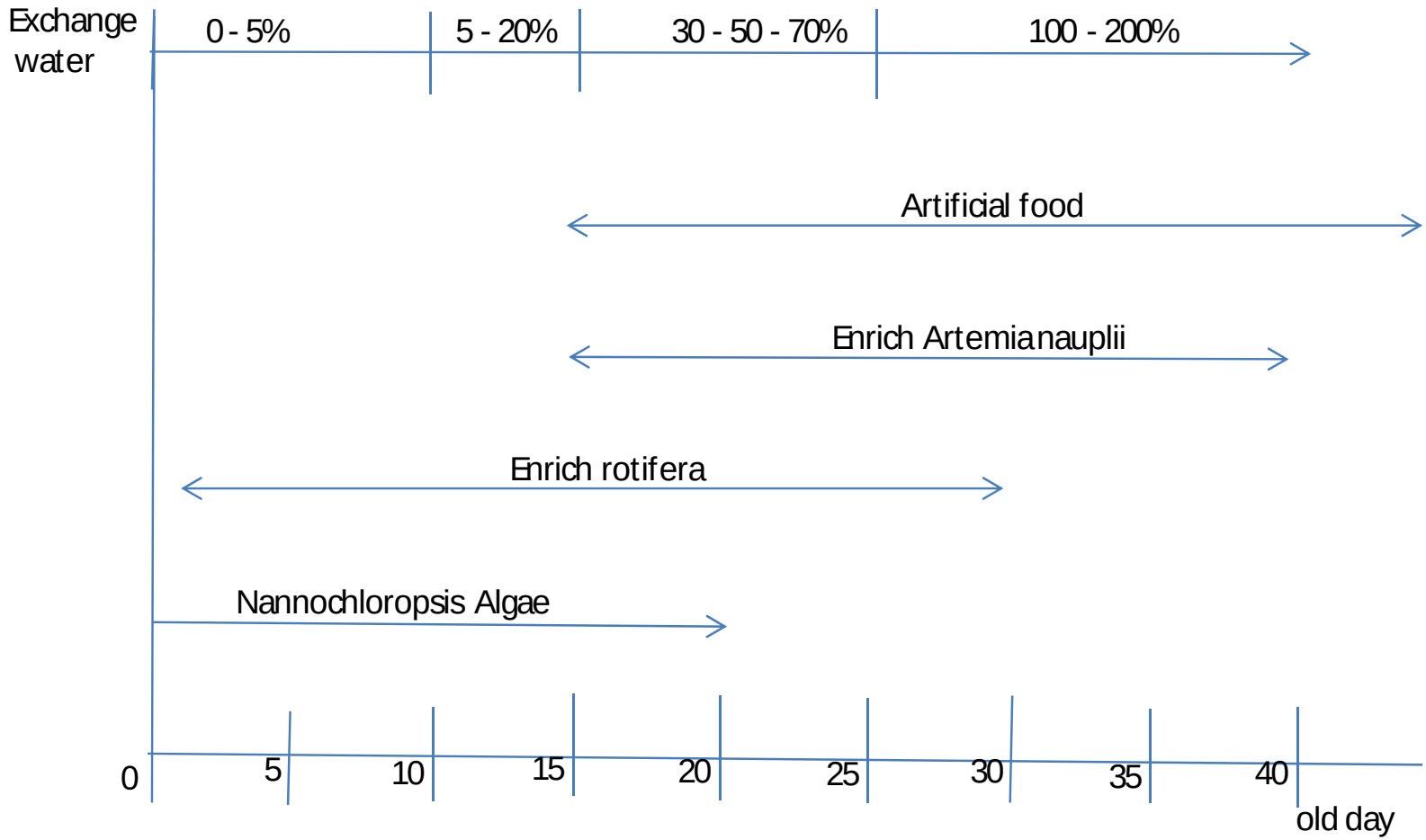
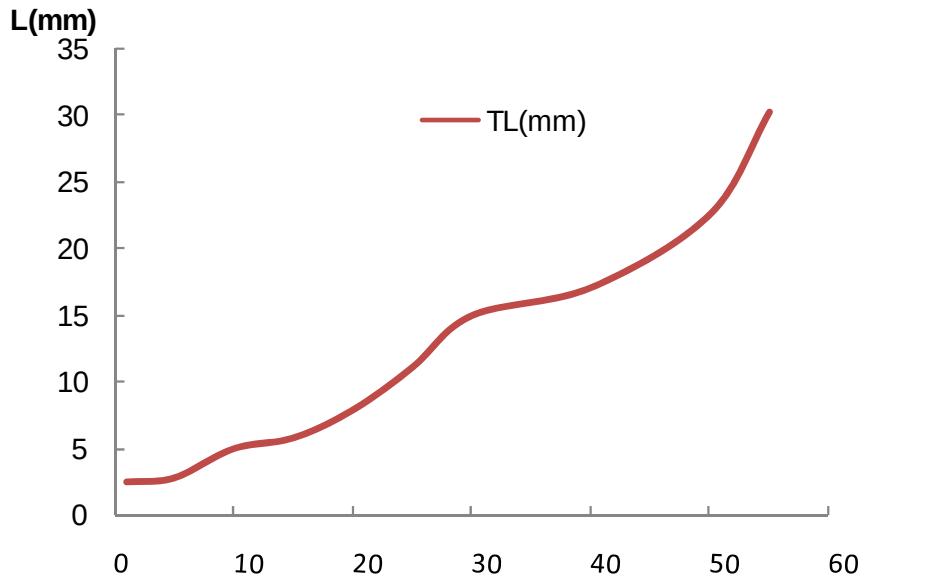


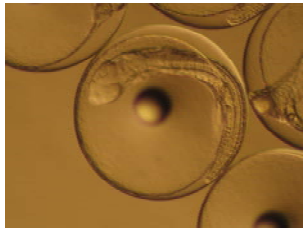
Fig1. Abstract Process rearing of *Plectropomus leopardus* at MRDC.

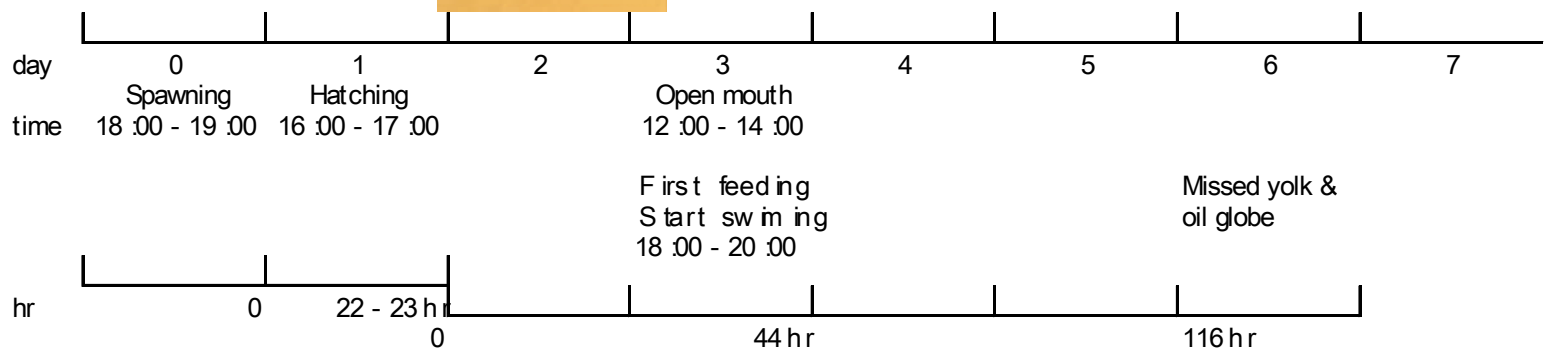
Old day	(mm)	Average length (mm)
1	2,0 – 2,6	2,3 ± 0,2
10	3,5 – 5,7	5,1 ± 0,4
20	6,3 – 10,2	7,9 ± 1,4
30	8,4 – 20,8	11,1 ± 2,3
40	8 – 22	17,1 ± 4,2
50	17 – 32	27,7 ± 3,4
55	19 - 42	30,3 ± 5,5

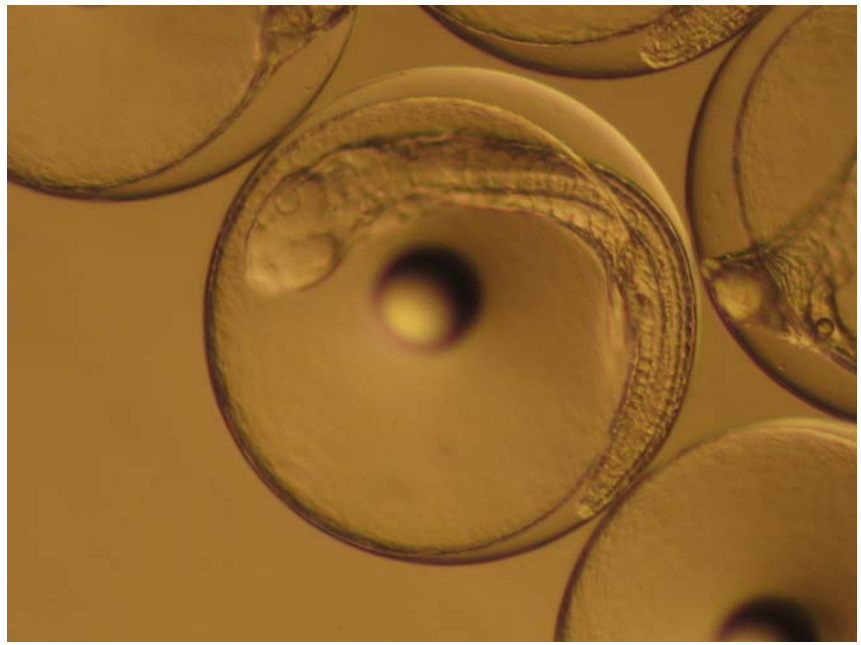


Hinh 3. Su tang truong cua au trung ca mu Plectroponus *leopardus* theo ngay tuoi

Development of early life stage at 27°C







Embryo stage egg,20hr after spawning,0.85mm in diameter

hatched larva,TL1.8mm

postlarva, 4 days after hatuching,TL2.5mm

postlarrva, 5 dah,TL3.0mm

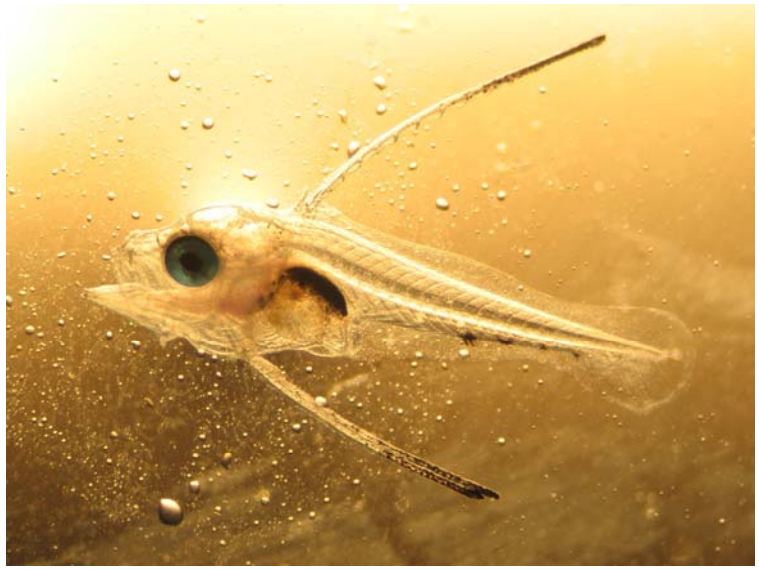
postlarva, 5 dah,TL3.0mm

postlarva, 7dah,TL3mm

postlarva, 7dah,TL3mm,

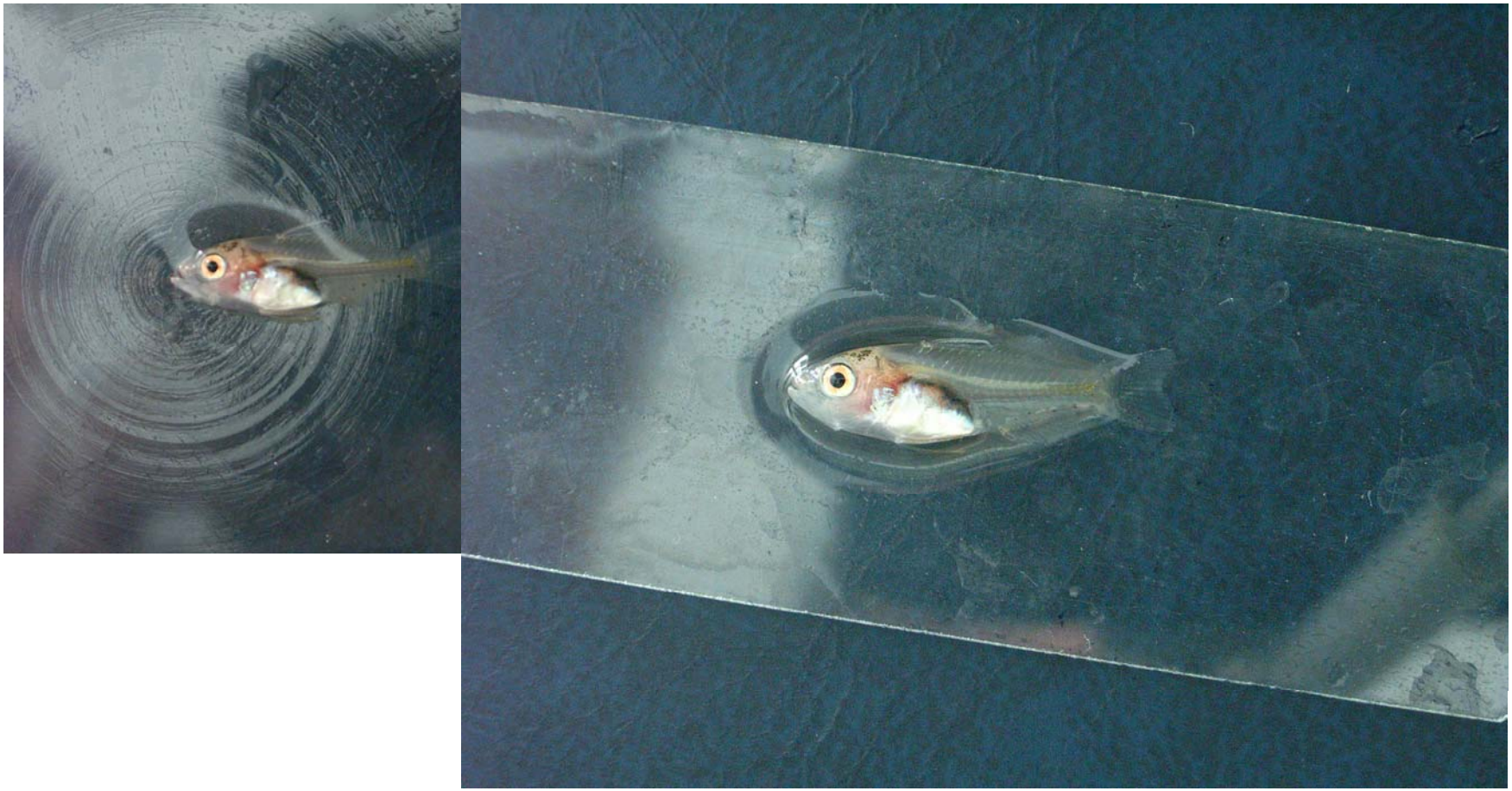
postlarva, 9dah,TL3.5mm,

postlarva, 10dah TL4mm,

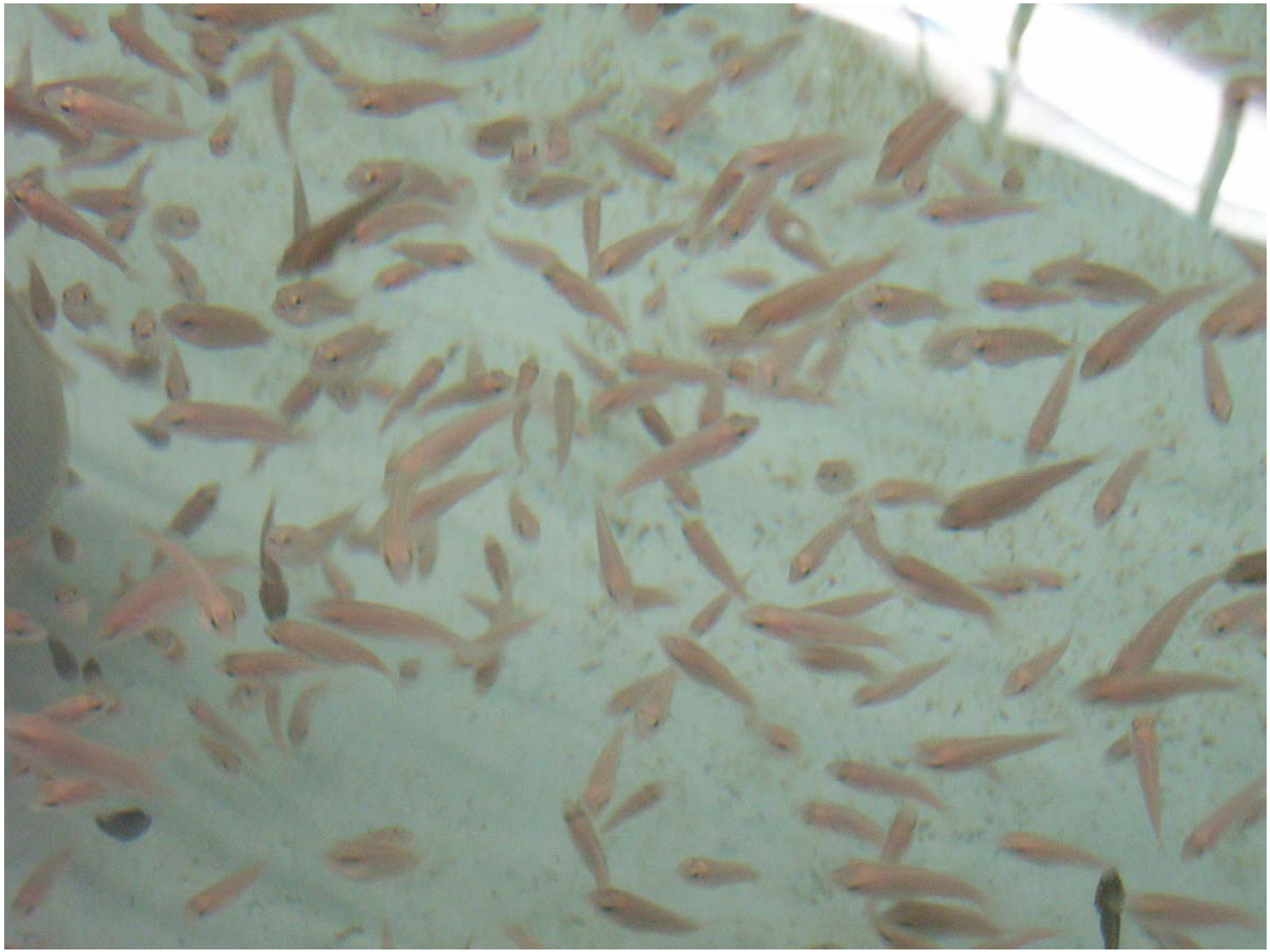


postlarva, 13dah ,TL5mm,

postlarva, 17dha ,TL7mm ,



Juvenile.45dah,19mm



Juvenile,55dah,TL35mm

Tank	Rearing periods	Number of lavae	Stocking density(ind/L)	Number of juvenile	Survival rate (%)
23	28/03 – 03/05 (40days)	245000	81	6500	2.65
22	27/03 – 03/05(40days)	392000	130	1500	0.38
20	26/04 – 16/6(51days)	180000	50	750	0.42

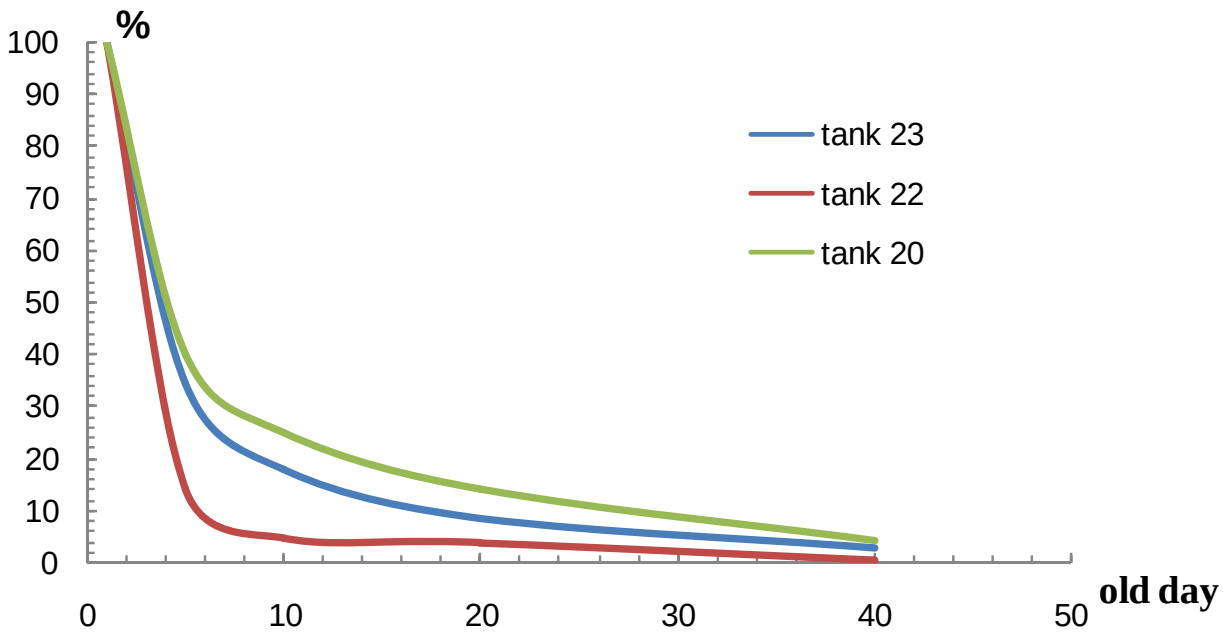


Fig 6. Survival rate during rearing of *Plectropomus leopardus*.

Conclusion

1. Leopardo coral grouper has been spawning from February to June at the indoor tank at MRDC-RIA3 at Nha Trang. The water temperature were from 24 to 29℃.

2. During this periods, there were 32 spawning times and the eggs has spawned from18:00 to19:00. The eggs are hatched out in 23hr after spawning at 27℃。 The larvae opened their mouth at 38hr and started their first feeding at 44hr after hatching .

3.. 9000 larvae (TL30mm) were cultured from eggs on 55days after hatching, their survival rate were 0.4 to 2.6%.

4. Making the water movement has carried the good survival from hatching to first feeding time.

5.Hight density of Rotifer (a first live food of fish larvae) could supplied the baby rotifer to first feeding larvae.

6. It needs to make the study to improvements the early survival by having good quality eggs, studying the optimum environmental rearing conditions, especially the light condition, and studying the disease, especially VNN.