Experimental cage culture of Nile Tilapia (*Oreochromis niloticus*) and Red Tilapia (*Oreochromis* spp.) in Sri Lanka

M.H.S Ariyaratne

National Aquatic Resources Research & Development Agency (NARA)

Sri Lanka

Tilapia is very popular in Sri Lanka

Common reasons

- It is an hardy fish
- It is an opportunistic feeder
- It could bear wide salinity range
- It has parental care and mouth breeding pattern
- It’s reproduction rate is very high

Specific reason

- No commercially valid endemic lacustrine fish in reservoirs

Introduction

- Cage culture is commonly practiced world wide in both freshwater and marine environments

- It also used in seed rearing of Carp and Tilapia in Sri Lanka

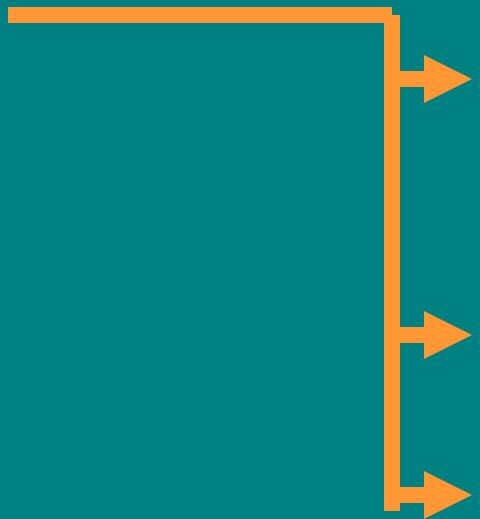
- The perennial reservoirs have been used to install cages in Sri Lanka

Cont….

- It is a simple methodology that could be applied by the fishers themselves
- Tilapia is the main stay of our reservoirs

Objectives

- To produce fingerlings of tilapia by the fisheries(community involvement) to stock



In Perennial reservoirs

In seasonal tanks

Other aquaculture practices such as pond culture,cage culture

Cont….

- To test a low –cost farmer made aqua feed for the seed rearing of Tilapia

- It is an urgent need to prepare a low cost farmer made feed for the rearing of tilapia

Materials and Method

Trials were carried out in Kiri-Ibbanwewa, a perennial reservoir in Moneragala District in Dry zone of Sri Lanka

Three Different types of feed were used

Rb (Rice bran)

Cf (Commercial feed)

Mf (Man made Aqua feed)

Nf (Natural feed as the supplementary feed

Mf = Rb+Fm (Locally prepared) + boiled casava tubes

The size of cage = 15m^3 (2x4x2.5m)

Cage material = HDPE , 4mm, Knotless

8 Floating cages were set up at once.

Coir were used for cage setting (community involved in cage setting process), kuralon, nylon ropes & plastic cans

Table.1Stocking Density of Tilapia & Rearing period in cages

Fish species	Stocking density	Rearing period
RT	150 fry/m^3	51 days
NT	150 fry/m^3	40 days

Feeding

- Twice per day at a rate of 10% of body weight
- Respective feed types were mixed with hot water and prepared as dough
- Feed dough was provided using feeding trays
- The amount of feed were determined through the sampling that was carried out biweekly

Preparation of fish meal

- Small indigenous fish species were used (not exploited by the commercial fishery)
- Sun dried for 3 days
- Wrapped in paper and hung in a fire place for further drying 5-7days
- Powdered using mortar and pestle/sieved with a sieve of 2mm

Community Involvement

Cage cleaning, cage setting, feed preparation and feeding, harvesting and fish transportation were done by the community

Special attention was made to prepare fish meal

Take care throughout the rearing period

Data Analysis

- SGR-L
- SGR-W
- ADG

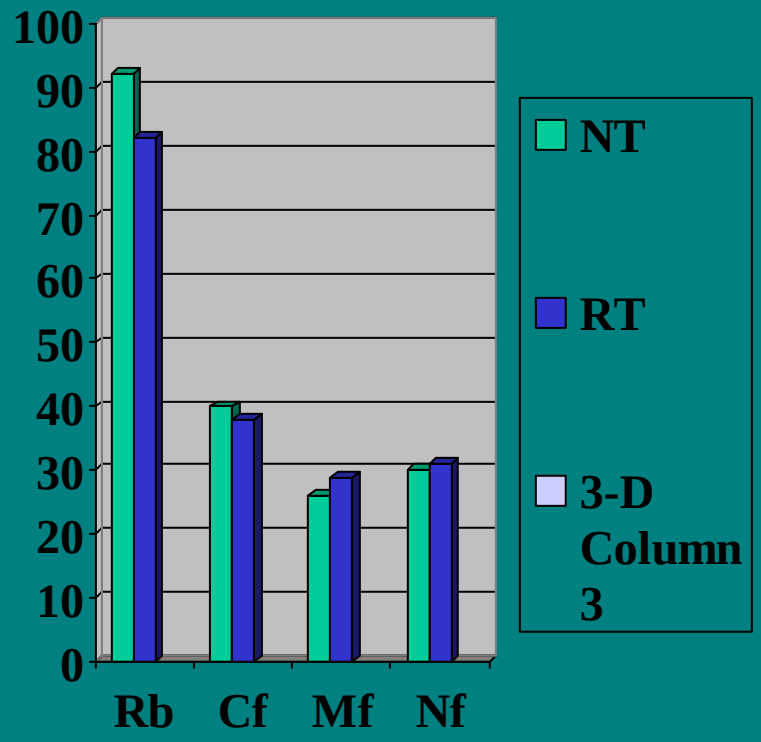
Calculated above factors and % survival was determined

Results

Table 1. Specific growth rate in length (SGR-L±sd), Specific growth rate in weight (SGR-W± sd), Average daily growth (ADG± sd) and % survival of Red tilapia(RT) and Nile tilapia(NT) fry in cage culture trials when fed with different types of feed.

Tilapia Variety	Culture method	Sto: density	Feed type	SGR_L	SGR-W	ADG	% survival
RT	Fry-fingerling	150	Rb	2.73±0.007	5.27±0.192	2.5±0.219	82
			Cf	3.18 ±0.127	6.69±0.104	8.4 ±0.375	38
			Mf	2.61 ±0.656	6.51±0.642	7.9 ±2.167	29
			Nf	2.50 ±0.285	6.12±0.592	7.28 ±1.749	31
NT	Fry-fingerling	150	Rb	2.06 ±0.046	4.02±0.626	2.15 ±0.807	92
			Cf	1.72 ±0.094	5..21±0.78	4.72 ±2.762	40
			Mf	1.60 ±0.125	4.76 ±0.96	4.66 ±2.728	26
			Nf	1.49 ±0.25	4.66 ±0.56	4.81±1.507	30

% Survival of RT & NT in cages with different feed types



- Both NT & RT have showed high % survival with Rb Feed type

Conclusion

- The fry of NT & RT could be reared successfully in the cages in perennial reservoirs in Sri Lanka

- Community could be engaged in this activity since no advanced technology is required

Cont….

- **Rb could be recommended for seed rearing of RT and NT**
- **However the amount of Rb should be reduced by preparing a suitable aqua feed as the high demand for Rb in poultry farming**
- **Selection of perennial reservoirs for extensive cage culture of NT &RT, the amount of available natural food could be considered**

Acknowledgement

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Thank you