International Journal of Fisheries and Aquaculture Research
Vol.10, No.2, pp.51-56, 2024
Print ISSN: ISSN 2397-7507,
Online ISSN: ISSN 2397-776
Website: https://www.eajournals.org/
Publication of the European Centre for Research Training and Development-UK

How Can You Reduce FCR for Fish Culture?

Bibhas Manna

doi: https://doi.org/10.37745/ijfar.15/vol10n25156 Published December 31, 2024

Citation: Manna B. (2024) How Can You Reduce FCR for Fish Culture? *International Journal of Fisheries and Aquaculture Research*, Vol.10, No.2, pp.1-13

Abstract: *In fish culture, FCR is one of the main things about a profitable business. FCR can define the water parameters & ecosystem for the pond environment. Nowadays, water pollution is increasing because of all kinds of environmental conditions & social waste removal. The polluting waters do not support a proper way for fish culture; FCR will be high in this bad condition. Properly formulated balanced nutrient floating feed monitoring knowledge can reduce FCR. Now I point out here that some procedures have a good impact on business & reduce the FCR of fish culture.*

Keywords: reduce FCR, fish, culture

INTRODUCTION

Stocking Density
Stocking density is one of the main factors for better production as well as reducing FCR.
I will discuss here, the total species stocking density is 0.4 to 0.5 pcs/m^2 for better production.
Some farmers have total pieces stocked divided into Catla: Rohu: Mrigal -20: 60: 20
Some farmers have total pieces stocked, divided into Catla: Rohu: Mrigal -10: 70: 20
Some farmers have total pieces stocked divided into Catla: Rohu: Mrigal- 5: 65: 30 (Bad Pond bottom condition). Comparatively, I study here, the maximum category species is Rohu fish's culture in culture ponds. When rohu fish's growths are not better that's time FCR will high.

ADG & stocking size is vital for better production-
We monitor ADG for better production-
The ADG of catla is 2% of ABW
The ADG of rohu is 1.5% of ABW
The ADG of mrigal is 1% of ABW
Here, the stock size is approx. 300 gm, vital for faster growth & better production.
Species wise food habit, habitant & artificial feed require-

Catla are mainly zooplankton feeders. They consume artificial feed, zooplankton & naturally stay in the surface layer of pond's water.
Rohu are mainly omnivorous feeders. They consume artificial feed, zooplankton, and phytoplankton & naturally stay in the middle layer of pond's water.

Mrigal are mainly detrivorous feeder. They are consuming only debris matter, not take artificial feed & naturally stay in the bottom layer of ponds.

Now I find that artificial feed is required for Catla & rohu. FCR can affect catla & Rouhu's growth. Rohu has a huge maximum quantity in the ponds.

Here I discuss how rohu can improve better growth in the ponds.

Challenging to focus on Rohu culture for better FCR-

1. Good quality seed
2. Digestible protein is a required formulated feed.
3. Proper feed management
4. Focus on environmental conditions
5. Sample check & sampling on a regular basis
6. Use of raking or drag netting before using lime
7. Focus on stocking density with stocking size
8. Focus on disease
9. Focus on water & soil parameters.
10. Focus on water depth, aeration system facility
11. Water exchange on a regular basis.
12. Focus on phytoplankton & zooplankton population
13. Use juice & probiotics on a regular basis
14. Focus on carrying capacity.
15.

Imbalance feed ingredients hampering fish's growth platform-

Protein Deficiency Symptom-

Fat Deficiency-

Properly not support source of energy levels & reduce the body temperature.

Carbohydrate Deficiency-

Lack of proper digestible problem

Vitamin Deficiency Symptom-

Minerals Deficiency-

Macro minerals do not promote the proper physical growth & minor minerals do not promote disease resistance power.

Balanced Feeds ingredients-

Ingredients	**Require (gm/ml) in 1 kg feed**	**Purpose for use**
Fish Meal	175	Source of protein
Fish Oil	80	Essential fatty acid
Soya bean	175	Veg. Protein source
Grain Flour	278	Source of pellet & carbohydrate
Rice Bran	278	Excellent Binder & Energy source
Premix Vitamin	3	Vitamin source
Premix Mineral	10	Mineral source

Photo of Jayanti Rohu(good quality seed)-

International Journal of Fisheries and Aquaculture Research
Vol.10, No.2, pp.51-56, 2024
Print ISSN: ISSN 2397-7507,
Online ISSN: ISSN 2397-776
Website: https://www.eajournals.org/
Publication of the European Centre for Research Training and Development-UK

Protein & Lipid requires a different stage of rohu culture-

Stage of Rohu	Require Protein%	Require Lipid %
Larvae	35-42	7-15
Fry	35-40	7-15
Fingerling	30-40	5-12
Juvenile	30-35	5-10
Grower	26-30	5-8
Brood stock	25-30	4-5

Require benefit of feeding-

Feed Size (mm)	**Protein %**	**Fat %**	**Moisture%**	**ABW (gm)**	**TDF (KG/ 1000PC)**	**Feed %**
4-6	30-28	5	12	300-1000	6-10	2-1

The Successful Culture depend on some aspect-

1. **Good quality seed-** Genetically improved seed is Jayanti rohu. It is more active than other general rohu. There is a higher survival rate, more disease resistance power, approx. 15-17% extra growth than other normal rohu.
2. Digestible protein- As per ABW wise, protein is a required stage. From juvenile to adult stage, protein requires from 35 to 28%. It is more effective for growth & disease resistance ability.
3. Proper Feed Management- As per schedule, floating feed is the best for proper monitoring process due to the uneaten feed is removed by scoop net & develops the pond's environment condition. Increased amount of feeding & time are good support for a proper digestion system. Multiple feeding places are required as per pond size. Otherwise results do not support better FCR.
4. Environmental condition-It is most vital which time is cultured in the ponds. FCR depends on various seasons, like summer crop, rainy crop & winter crop.
5. Stocking Density & stocking size-Stocking density & size is vital for more profitable business. The preferred stocking density is 0.4 to 0.5 pc/m2 & the stocking size is approx 300 gm.
6. Disease- Conesus about various fish diseases & treatment procedures. Otherwise, it will take more time in the proper growth platform.
7. Water & soil parameters- Periodically lab check for water & soil parameters. It will help by better production & lesser chance of disease with outbreaks of fish.
8. Water depth & aeration system-In the summer, crop water depth is 5.5-6.5 ft for better production due to water depth helps to reduce temperature in the water body as per stratification. In the rainy crop, aeration facilities are helped for better production due to lack of oxygen facility for bad photosynthesis process in the pond's environment. Always maintain the oxygen level is >5 ppm in the pond. Also help with carrying the capacity of fishponds.
9. Water Exchange-The water exchange has supported a successful culture. When any kinds of fish suffer any moribund condition, they will be affected by severe disease. Water exchange can reduce the concentration of toxic substances & fish will be free from stress.
10. Phytoplankton & zooplankton population-In the fish culture, phytoplankton & zooplankton have been supporting a good ecological system in the pond's environment. The phytoplankton has supported oxygen facilities & veg protein. Also, zooplanktons consume extra phytoplankton from ponds & they will support fish's levels of animal protein. The ideal phytoplankton population is 30-45 cm. The Phytoplankton: zooplankton=15:1 population has been providing extra sources for food & reducing FCR levels.
11. Use of juice & probiotics-We always apply organic juice in ponds to maintain a C:N ratio, plankton stability, stable alkalinity & mainly works for prebiotic. Probiotics can degrade the toxic substances in the pond's environment. Organic juice can assist with probiotic activities.
12. Sample check & sampling-On a regular basis, sample check is mandatory for fish's health development purposes. Sampling procedures can help growth level monitoring as per species wise in the present condition.
13. Uses of lime before raking or dragging netting-Use of lime every 20–30 days before the raking or dragging netting is mandatory for the pond's environment as well as reduces the fish's mucus & develop the fish's health condition.

14. Carrying capacity-It is the final & main thing for better FCR. When reaching 2-2.5 mt per acre, biomass is optimum for the carrying capacity of fishponds. Farmers are thinking about multiple stocking and multiple harvesting processes.

CONCLUSION

Here all ponds layers of consumable food are cultured. All the stocking size, stocking density & all parameters of soil & water when in good condition that's time better FCR are founding here. Practically, I found that approx. 300 gm of fishes reaches to 1kg of fishes of any species with a better FCR is below 1.2-1.3 by formulated balance Nutrient pellet feed.