

A Study on Evaluation of Feeding Performance and Rearing of Medium Carp, *Osteobrama belangeri* Found in Manipur

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Abstract

The present study the food utilization efficiency of different diets by *Osteobrama belangeri* showed variation. PER of diets containing 5% cp aquatic weeds are not statistically different except the diets of 5% cp *Salvinia*. The best percentage of growth daily weight gain and food conversion ratio (PER) were observed at the 25% of plant ingredient in diets (De Silva and Guneskar, 1989), Fagbenro (1988) observed high food conversion ratio 5.12 and 2.30 when deflated cocoa cake and fish meal were fed directly in the monosex culture of *Tilapia gutinosis*. No beneficial effect on fish growth and feed utilization efficiency were observed by Tacon *et al.* (1954) when solvent extracted sunflower seed meal used in diets for Rainbow trout fingerlings. However, sunflower seed meal increased from 0% to 22% obtained no adverse effect on overall growth performance and feed utilization.

Keywords: Climate, Pleasant, Aquaculture, Utilization, Farming

The climatic condition in Manipur is very pleasant to this aquaculture. The areas with water which are unsuitable for agriculture can be taken up for such aquaculture systems," said Dr. Basudhara Devi, a fishery scientist.

Life has changed dramatically for Laghachandra after he started fish farming. His fish business flourished furthermore after he met the officials of the Indian Council of Agricultural Research (ICAR), Government of India who provided him various technical know-how and inputs related to the fishery. Under the guidance of Scientist of the Indian Council of Agricultural Research (ICAR) as an experimental trial, a species of freshwater *Eutroplichthys vacha* (Hamilton) Ngahei of 8,000 fingerlings were reared at the Khabi Mamang Leikai pond and has spent around 4.5 lakhs for fish feeds and maintenance.

My aim as a fish farmer is to excel in technology. I feel that the advice from the researchers and scholars is very important here. When I started farming initially, I contacted the ICAR [Indian Council of Agricultural Research] team, without them, I would have not able to handle this farm," said Singh.

DISCUSSION

According to ICAR, the state has the potential to produce 56,500 tons of fish per annum. With the growth of the population, the demand for fish has risen rapidly in Manipur. Energetic and

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hardworking, farmers like Laghachandra have not only generated employment. Opportunities but have helped in the conservation of the rare species of fishes by increasing the aqua system culture of the region.

This story has not been edited by Business Standard staff and is auto-generated from a syndicated feed. Manipur, home to more than 200 fish species, has seven endemic fishes among the 15 endangered freshwater fish species, mentioned in the Red list of the International Union for Conservation of Nature's threatened species report on the status and distribution of freshwater biodiversity in Eastern Himalaya.

Manipur is northeast India's largest freshwater body, a sub-basin of the Chindwin Irrawaddy river of Myanmar and a Ramsar Wetlands of International Importance site. Of at least 200 species of indigenous fish in Manipur, Imphal, Manipur harbours 38 of them, researchers said and Zoological Survey of India blame changes in the hydrology due to the construction of dams, blockage of migratory routes, drying up of wetlands from siltation, eutrophication and water quality deterioration, and overexploitation for declining indigenous fish diversity in the lake.

As many as 16 species of Indigenous fish are believed to have become extinct due to the blocking of water by the Ithai barrage, according to Manipur Governor Najma Heptullah. Capture of indigenous fish for trafficking for their ornamental value and absence of ban periods also add to the mix of conservation challenges.

There was nothing you could not get from the lake," said Mashinga, a former member of the women's social movement "Meira Paibi", or women torch bearer who sells water chestnuts and fermented fish for a living. "What little you get now is in a poor quality and quantity. There isn't any pengba [*Osteobrama belangeri*] in the water."

According to Government of Manipur the criteria for a successful fish feed are (i) ready acceptability, (ii) easy digestibility, (iii) high conversion value, (iv) easy transportability, (v) abundant availability, (vi) high keeping quality and (vii) low cost. When artificial feed is the only source of feed, it should be a balanced diet in its protein, fat, carbohydrate, vitamin and mineral contents. Hephher

and Chervinski (1965) and Hephher *et al.* (1971) tried to determine the effect of the dietary protein concentration of fish production by using artificial feed such as fish meal and soybean meal in their experiments. Various workers tried several practical diets on different fish species. A silkworm pupa is extensively used in carp diets in China and Japan (Hora and Pillay, 1962). Waston (1985) studied processed piggery waste as a feed material and compared to a diet of soybean meal and fish meal for mirror carp fingerlings.

Efforts have been made by several workers to utilize protein of plant origin in various forms in fish feed, (Edwards *et al.* 1985; Basudha and Vishwanath 1993; Nose 1960; Hajra and Tripathi, 1981). The use of powdered algae and aquatic weeds as feed has also been suggested. There are reports on the utilization of green algae (Gupta and Almied 1966; Singh 1970; Singh and Bhanot, 1970 and Singh *et al.* 1979). Patnaik and Das (1969) used fresh and dried leaves of *Spirodela polyrhiza* and *Nymphoides cristatum* which contains 14.12% and attained by feeding rice bran and ground nut oil cake. Feeding trials were conducted by De Silva and Guneskera (1989) on young *Oreochromis niloticus* fry by using different levels of protein and amount of plant ingredient in corporate into the diets. Fagbenro (1988) used defatted cocoa cake as direct feed in the monosex culture of *Tilapia* genesis.

Hephher *et al.* (1971) observed that in all the protein rich diets tested, the utilization of protein for growth was poor. The conversion ratio of dietary protein to body protein was higher than the biological value of the dietary proteins. The conversion ratios increase with the increase in the amount of feed (Jhingaran, 1975). The food conversion rate has been termed as 'food quotient', 'food coefficient', 'growth coefficient' etc. which is expressed as a ratio between food consumed and increased per unit weight gained by fish body. The conversion rate of feeds depend upon (a) its nutrient contents'; (b) methods of presentation of food to fish, (c) environment factors such as temperature, oxygen concentration etc; (d) size of fish, (e) stocking density, (f) sexual maturity of the fish etc.

In the present study the food utilization efficiency of different diets by *Osteobrama belangeri* showed variation. PER of diets containing 5% cp aquatic weeds are not statistically different except the diets

of 5% cp *Salvinia*. The best percentage of growth daily weight gain and food conversion ratio (PER) were observed at the 25% of plant ingredient in diets (De Silva and Guneskar, 1989), Fagbenro (1988) observed high food conversion ratio 5.12 and 2.30 when deflated cocoa cake and fish meal were fed directly in the monosex culture of *Tilapia gutinosis*. No beneficial effect on fish growth and feed utilization efficiency were observed by Tacon *et al.* (1954) when solventextracted sunflower seed meal used is diets for Rainbow trout fingerlings. However, sunflower seed meal increased from 0% to 22% obtained no adverse effect on overall growth performance and feed utilization.

The muscle protein deposition of the fish fed with different dietary protein levels in this study was similar to those reported by De Silva and Guneskar (1989) levels in this study was similar to those reported by De Silva and Guneskar (1989). The muscle protein content was higher with higher protein level in diet and there was no effect of inclusion of aquatic weed or plant protein in diet.

CONCLUSION

The potential for the utilization of aquatic carp meal would therefore depend on the cost of harvesting and preparing the meal relative to the cost of other plant protein sources of similar nutritional value (Ng and Wee 1986). In the resent study, it is impossible to raise the protein content to more

than 20% as (i) the weed has below 20% CP and (ii) higher protein has adverse effect on growth. Since the main objective of this study was to evaluate the direct nutritive value of aquatic weeds meal protein, the experiment was carried out in indoor, clear water circulating system However, the importance of the indirect nutritional value of natural food in a outdoor system due to fertilization effects of uneaten feed and fish faces has been pointed out. (Edwards *et al.* 1985).

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