

RECENT TRENDS IN AQUACULTURE

MURREL CULTURE IN PONDS



National Fisheries Development Board

Department of Fisheries

Ministry of Fisheries, Animal Husbandry & Dairying,

Government of India



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MURREL CULTURE IN PONDS (0.2 ha X 5=1 ha)

Introduction

Freshwater aquaculture is an economy generating and rural development tool. Murrel is considered to be the most economical freshwater fish species which can be cultured. They belong to the family “Channidae” and is also called as snake-head fish. Murrel is one of the indigenous air breathing fish; there is a suprabranchial accessory respiratory organ in the murrel head. It can even survive in lower dissolved oxygen levels. This fish is identified by its dark brown colour with light black stripes over the body.

Murrel fish is one of the popular freshwater and tasty fish in India. The fish has a lot of regional preferences. While it is the State fish of Telangana, people prefer murrel over any other fishes



in many States like Andhra Pradesh, Tamil Nadu, Punjab, Haryana and Bihar and North Eastern Region. Andhra Pradesh is the second largest fish farming region in the country with 0.8 million hectares of inland water bodies producing 1.24 MT annually. Murrel is predatory inhabit and feed on variety of fauna present in the water. However, the high demand and high market value and their capacity to withstand in adverse weather conditions make them suitable candidate species for aquaculture. The most important aquaculture species of murrel in India is the striped murrel (*Channa striatus*), the great snakehead murrel (*Channa marulius*) and the spotted snakehead (*Channa punctatus*). The culture technology is standardized for striped murrel. Murrel has high demand and high market value in India. It has a huge potential for murrel culture in freshwater areas when it is cultured with best management practises.

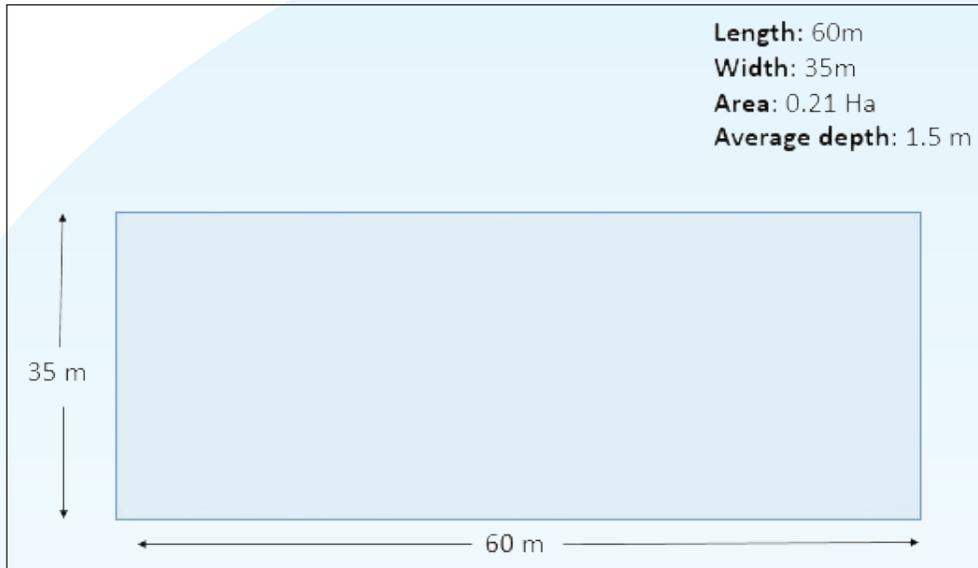
Local names of murrel fish in India

Murrai (Hindi), Korameenu, Koramatta (Telugu), Viral meen (Tamil), Korava, Vatton, Varal (Malayalam), Cheng, Shol (Bengali), Maral (Marathi), Hal (Assamese) and Gadisha (Oriya).

Salient features

- High value food fish in India and can be marketed in live condition
- Murrel culture can be done in small backyard, shallow or community ponds
- Value added products like fillets, pickle, curry etc. have high demand

Layout of the pond



Grow out

Pond should be constructed in a place having good quality water. Pond size of 0.1-0.2 Ha is ideal for grow-out of striped murrel, with a water depth of 1 to 1.5m. Lining can be given to the pond bottom and the dyke in order to prevent the seepage of water. For grow out culture, the advisable stocking size is 5-8 cm or more with a stocking density of 10000/ha. The expected growth in a year is 600-700gm over a period of 8-10 months.

Water Temperature

For better growth of the fish and to improve the feed conversion efficiency, it is advisable to control the water temperature. Since murrel is air breathing fishes, they can survive in less dissolved oxygen level.

Seed

Weaned fingerlings of equal size 5-8 cm or more can be stocked in pond. Seed suppliers/farms are available in Telangana, who can provide quality weaned seed for rearing in the captive condition.

Feed requirement

As murrel are carnivorous, good quality protein rich pellets can be given to the weaned fish. Feeding can be done at the rate 5% of the body weight of fish during the initial period and 2-3 % during the later stage of culture.

Good quality feed for murrel is available in the local market with high protein level

Harvesting of fish

Harvesting can be done when the fish reaches to a size of 600-700 gm. Fishing nets can be used for the collection of fish from ponds.

Marketing

Murrel fish demand is very high in the market and can be sold in open markets at Rs.400-500 per kg. Consumer preferences, lucrative market value and their ability to withstand adverse water conditions make them suitable candidate species for freshwater aquaculture. It can be sold in live fish markets and hence it increases the interest among the customers.

Model technical specification for murrel culture in ponds

Salient Features		
Sl. No	Title	Description
1	Species cultured	Striped Murrel (<i>Channa striatus</i>)
2	Water spread area (WSA) 0.2 Ha X 5 no.	1 Ha
3	Average Depth	1.5 m
4	Stocking size	Fingerling (5-8 cm)
5	Stocking no. @ 2000 no./pond	10,000
6	Survival rate	70%
7	FCR	1:1.5
8	Culture period/crop duration	8 to 10 months
9	Cost of Seed	Rs.7/- per pc
10	Cost of feed (crude protein 40%)	Rs. 100/- per kg
11	Total feed required	7.35 MT
12	Average Size at the time of Harvest	700 g
13	Total biomass	4.90 MT
14	Selling price	Rs.400/- per kg

Cost Estimation:

S.No.	Particulars	Total amount (Rs in lakh)
A. Capital Cost		
1	Earth work excavation and construction of bund	1.50
2	Lining of pond	5.00
3	Farmstead	0.50
4	Pumps-2 nos. 1 HP	0.30
5	Nets and accessories	0.20
6	Electrification L.S.	0.30
7	Miscellaneous	0.20
Sub Total (A)		8.00

S.No.	Particulars	Total amount (Rs in lakh)
B. Recurring Cost		
1	Seed cost @ Rs.7/pc for 10,000 nos.	0.70
2	Feed cost @Rs.100/kg for 7.35 MT	7.35
3	Manpower-1 no. @Rs.8000 p.m. for 10 months	0.80
4	Electricity and fuel L.S.	0.35
5	Harvesting charges	0.10
6	Miscellaneous	0.20
Sub Total (B)		9.50
Total Project Cost (A+B):		17.50

Economic Feasibility for 1-year production

S.No.	Particulars	Amount (Rs. In lakh)
1	Capital cost	8.00
2	Operational cost	9.50
3	Total project cost	17.50
4	Gross income from one crop	19.60
5	Depreciation @15% on Capital cost	1.20
6	Interest @ 12% on Total Project Cost	2.10
7	Repayment @1/7 th of Total Project Cost	2.50
8	Operational cost for next crop	9.50
9	Net profit after the end of the year ie, (19.6)- (1.2+2.1+2.5+9.5) ie, (19.6-15.3)	4.30

Technical guidance

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SI No.	Contact Person for seed	Contact Person for feed
1.	Mr. K. Vijay Kumar (Hyderabad) Mob: 8686954666	Mr. Rambabu (Growel Pvt.) Mob: 9603493322
2.	Mr. Venkat Vaddiyaraj Mob: 9849268939	Mr. Venkat Vaddiyaraj Mob: 9849268939



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