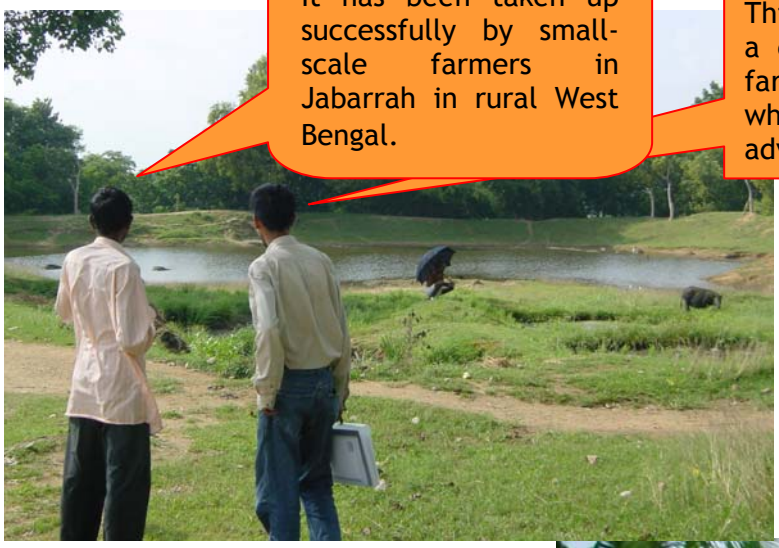
Advanced Fingerling Production in Perennial Ponds

Everyone wants advanced fingerlings as early after the rains as possible. They fetch a good price and they make marketable fish production possible in seasonal ponds.

One way to produce early season advanced fingerlings is to grow them in perennial ponds and store them at high density with minimal feeding for the coming year. When such "stunted fingerlings" are stocked into ponds with good feed they grow fast and can be marketed in about 6-8 months.



It has been taken up successfully by small-scale farmers in Jabarrah in rural West Bengal.

This way of working is now a common feature of fish farming in Andhra Pradesh, where carp culture is advanced in India.

It should however be clearly understood that managing advanced fingerling ponds throughout the year is not an easy task and needs a lot of attention. Farmers risk fish losses and problems with predation, theft and water availability and quality.

Advanced fingerlings can be reared in ponds from 0.1-0.4 ha in size ranging in depth from 1.5-2.0 m.

These ponds should retain enough water in the summer so that the fingerlings are not affected.

The fingerlings range in size from 100 to 200 mm and are 10 g to 150g in weight.

These advanced fingerlings can be stocked in perennial ponds, which have a resident population of competitors and predators (that cannot be removed), or in seasonal ponds which hold water for only 6-8 months.

Pond preparation

How should I prepare my perennial pond for stocking?

The perennial rearing ponds need to be made free from competitors and predators as well as from aquatic weeds.

If fish are found with parasites during the course of rearing, bleaching powder (200 kg/ha) can be used after harvesting and drying the pond to kill the parasites before restocking fish.

Before stocking, it is good to treat the pond with lime (200 kg/ha) and then seven days later to fertilize either with *mahua* oilcake at 1,000 kg/ha or mustard oilcake at 300 kg/ha.

What is the best way to manure and maintain my perennial pond?

Maintaining a consistent level of natural feed within the pond is important. Fresh cow dung (1,000 kg/ha) or a mixture of cow dung (500 kg/ha) and poultry manure (250 kg/ha) should be used to fertilize the pond every month. If the density of natural feed becomes reduced, the water color changes or becomes clear, water-soaked mustard oilcake (30 kg/ha) can be sprayed on to the pond.

A word about plankton

Fish need the natural feed in water that is called plankton, so it is important to check the level of plankton in your pond from time to time.

When there is enough plankton the water is a brownish-green color and it is difficult to see into the water. As plankton is eaten, the water changes color and clears. With no silt or plankton, it is possible to see deep down into the pond.

A test is to put your arm in the water to the elbow and if the fist is not seen the pond is rich enough in plankton (check that the color is due to plankton and not cloudiness due to silt and clay or any coloring material).

When there is no plankton, you can see to a depth of 1-2 m - spray the mustard oilcake mix.

Stocking the fry

When the old stock is sold out by May-June, the pond is prepared and restocked within two to three weeks with the fry of all the three major carps – Catla, Rohu and Mrigal. It is often recommended that these fish are stocked in the ratio 3:4:3.

The best mix of the fry of Catla, Rohu and Mrigal depends on the pond. If there is a lot of debris on the bottom of a pond, more Mrigal (which is a bottom feeder) could be stocked or Common Carp added to the mix. If there are lots of submerged plants with tiny plants growing on them, which Rohu eat, then more Rohu could be added. Where a lot of succulent grasses are submerged, Grass Carp could be added to the mix.

The stocking density is high for advanced fingerling production in perennial ponds because the target is slow growth and a fingerling that is small for its age. When stocked at 300,000 fry/ha, the fry attain a size of 150 mm fingerlings in six months. All the fry grow fast during the monsoon months (July-August). However, the growth rate slows down considerably by October and only the maintenance requirements need to be met.

Post-stocking management

Do the fingerlings need a lot of feeding?

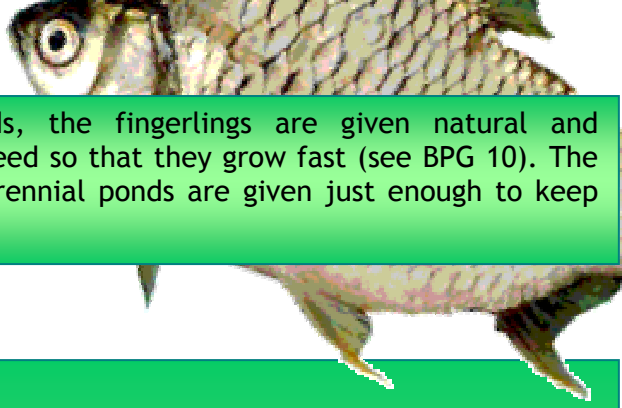
How much should I feed them?

Should the quantity of feed stay the same or increase?

The right way to feed is suggested in this table.

October-November and March-April are times when the farmer has to be extremely careful about the water quality and fish diseases.

Liming the pond at 50 kg/ha during October-November and again during March-April is a must. Periodic fertilization with fresh cow dung (1,000 kg/ha) or a mixture of cow dung (500 kg/ha) and poultry manure (250 kg/ha) should be done every month. Feeding and application of the manure should be avoided on cloudy days when special attention must be paid to oxygen levels.



In rearing ponds, the fingerlings are given natural and supplementary feed so that they grow fast (see BPG 10). The fingerlings in perennial ponds are given just enough to keep them healthy.

We have stocked 300,000 fry/ha. Feeding should be done with a mixture of oilcake and rice bran (1:1 by weight) at 6 kg/day during the first week followed by 12 kg/day during the second week. The feed should be split and given in two installments.

Feeding:		
Time	Action	Notes
From the day after stocking (August)	feed twice daily an **oilcake-rice bran** mixture (6 kg/ha) 0.6 kg in 0.1 ha 2.4 kg in 0.4 ha	Feed half in the morning and half in the evening
1 week after stocking	feed twice daily an **oilcake-rice bran** mixture (12 kg/ha) 1.2 kg in 0.1 ha 4.8 kg in 0.4 ha	Adding the feed in the same place helps fish to feed and allows you to sometimes catch fish
2 weeks after stocking	feed twice daily an **oilcake-rice bran** mixture (18 kg/ha) 1.8 kg in 0.1 ha 7.2 kg in 0.4 ha	
3 weeks after stocking	feed twice daily an **oilcake-rice bran** mixture (24 kg/ha) 2.4 kg in 0.1 ha 9.6 kg in 0.4 ha	
4-8 weeks after stocking (September-October)	feed twice daily an **oilcake-rice bran** mixture (30 kg/ha) 3.0 kg in 0.1 ha 12.0 kg in 0.4 ha	Keep feed level constant
9-12 weeks after stocking (November)	feed twice daily an **oilcake-rice bran** mixture (30 kg/ha) 3.0 kg in 0.1 ha 12.0 kg in 0.4 ha	Feed level should be reduced if the weather is cool
13-21 weeks after stocking (December - January)	feed twice daily an **oilcake-rice bran** mixture (10 kg/ha) 1.0 kg in 0.1 ha 4.0 kg in 0.4 ha	A small ration
22-26 weeks after stocking (February)	feed twice daily an **oilcake-rice bran** mixture (15 kg/ha) 1.5 kg in 0.1 ha 6.0 kg in 0.4 ha	Feed level should be increased during warm weather
27-35 weeks after stocking (March - April)	feed twice daily an **oilcake-rice bran** mixture (20 kg/ha) 2.0 kg in 0.1 ha 8.0 kg in 0.4 ha	As the weather warms more plankton also is available

Harvesting and packaging

Advanced fingerlings are miniature adults – a high value product – and in great demand. They sell like hot cakes either by weight (Rs 50-60/kg) or by numbers (Rs 5/ piece).

These are harvested and conditioned and often delivered by the producer's own workers.

Fish transport in large *hundies* is a skilled traditional practice. Fingerlings can also be transported in FRP tanks with a supply of oxygen or in tied plastic bags with 1/3 water and 2/3 oxygen.

Useful Contacts

Other Better-Practice Guidelines

There are many more Better-Practice Guidelines in this series.

You can get more copies of this and other Better-Practice Guidelines from your local One-stop Aqua Shop, STREAM India Communications Hub, from the STREAM Regional Office or from the STREAM Website.

www.streaminitiative.org

We would like your feedback about these Better-Practice Guidelines. You can let us know by phoning, emailing or writing to the Communications Hub Manager at your STREAM Country Office.

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