



# Fish Nurseries Pond Management

## NURSERY PONDS

The ponds which are used for growing hatchlings, spawn, fry to advanced fry and fingerling stage. Nursery pond management is crucial for quality seed production.



### Pond Size and Recommended Water Depth

- 3 days old hatchlings (Hatched from the egg) are called Spawn and are good for stocking
- The spawn grown up to nearly 20 days are called fry; size of the fry is generally 25 to 30 mm
- Small perennial water bodies or even seasonal in nature can be used for growing Spawn to Fry
- Fry attains fingerlings size of 100 mm in about 2 to 3 months in nursery ponds
- The recommended size of the nursery pond is 10 to 25 decimal
- The recommended water depth is 1 meter to 1.5 meter (3.5 ft to 4.5 ft)
- Nursery pond preparation can be initiated depending on the rainy season in that particular region/ area.

### Stocking

- The spawns are ready to transfer in to nurseries after 3 days of hatching
- Stocking has to be done preferably during morning hours by acclimatizing them to the new environment.
- The normal socking density of spawn is 16-20 lakh per acre in pond
- Stocking density in 25 decimal nursery pond is 5 lakh



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Watershed Support Services and  
Activities Network (WASSAN)

Jiwi Daah Hasa, Department of Rural Development, Government of Jharkhand

### Pre-Stocking Management

#### (1) Clearing aquatic plants and weeds

- Aquatic weed clearance is first step in pond preparation. Clearing abundant vegetation allows free movement of fish and netting operation,
- Manual methods are used to clear aquatic-weeds.



#### (2) Eradication of Predatory and Weed Fish

- Mahwa Oil Cake
  - \* Mahwa oil cake can be used to kill weed fish with in 3 to 10 hours after application. Its toxicity lasts for 15 days and then it works as a manure.
  - \* The suggestive dose of Mahwa oil cake is 1000 kg/acre (250 kg/25 decimal pond) for a pond with 1 meter depth of water
- Bleaching powder
  - \* Dissolve bleaching powder into water and then spread into the nursery ponds to eradicate weed fish
  - \* Bleaching powder works effectively within 3-4 hours and its toxicity last for 7 days.
  - \* The suggestive dosage of bleaching powder is 140 kg/acre (35kg/ 25 decimal pond ) having 1 meter depth of water
  - \* Drying & repeated netting is also an option to remove predatory fish

#### (3) Control of Aquatic Insects

- Controlling aquatic insects population and their larvae is important as the insect feed on spawn
- **Repeated netting:** By repeated netting aquatic insects population can be partially controlled.
- **Kerosene oil:** Kerosene oil is applied @25 liter per acre 500gms. Detergent can be added to increase its effectiveness (@6 liter per 25 decimal nursery pond & 250 gms detergent)
- **Diesel:** Diesel oil is applied @25 liter per acre by spraying on the surface (@ 6 liter per 25 decimal pond)
- These are applied generally 1 to 2 days before stocking. Kerosene oil can also be used before selling off fry or if increase in insect population is observed again.

#### (4) Soil Correction (pH)

- Liming is done to maintain the PH of the water, increases oxygen in the pond and kills germ in pond
- The recommended dose of lime application is 200 kg/acre per pond (50kg/ 25 decimal pond)

#### (5) Manuring

- Plankton are the natural fish food organisms produced by fertilizing the Nursery ponds with manure.
- Manure like - Cow dung, Poultry dropping, and inorganic fertilizer can be used
- The recommended dose of cow dung is nearly 2000 kg/acre (@ 500kg/ 25 decimal pond).



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### Post-stocking Pond Management

#### (1) Feeding

- Feed thoroughly mixed by putting all ingredients and broadcast on the surface of water preferably in fixed area of pond and at fixed time to avoid wastage of feed.
- Feeding has to be given 2 times per day, once after sunrise in the morning and second time in evening before sunset.

**Recommended standard for feeding of the spawn up to fingerling stage in 25 Decimal pond**

S. no.	Time period	Quantity / day	Food
1	1 <sup>st</sup> Week	3 kg/day	Besan ( 1250 gm)+ Mustard oil cake ( 1250 gm)+ Gud + egg + Mustard oil ( 500 gm)
2	2 <sup>nd</sup> Week	6 kg/day	Rice khonda ( 2500 gm)+ Mustard oil cake ( 2500 gm )+ Gud + egg + Mustard oil ( 1000 gm)
3	3 <sup>rd</sup> .Week	9 kg/day	Rice Khonda ( 3750 gm)+Mustard oil cake ( 3750 gm)+ Mustard oil (1500 gm )
4	4 <sup>th</sup> week	9 kg/day	Rice Khonda ( 3750 gm)+Mustard oil cake ( 3750 gm)+ Mustard oil (1500 gm )

**Fry to fingerling feed management depends on the assessment of total biomass after 4 weeks of stocking spawn. Recommended standard for feeding of the fry to fingerling is 4% to 2% of body weight in decreasing order.**

- Most of the fish farmers lacks fry rearing pond so they use to rear fry to fingerling in same nursery pond. The best practice is to use other pond for rearing fry to fingerling.

#### (2) Water Management

- Regular watch on water parameters like dissolved Oxygen, Ph, total alkalinity and quantity of natural feed called plankton is important for successful nursery operations.

#### (3) Growth Monitoring

- Regular netting has to be done to monitor growth and mortality rate.



### Harvesting

- After 4 weeks of stoking approximately it attains a size of 1"- 1.5".
- After 8-12 weeks (2 -3 months) of stoking approximately it attains a fingerling size of 3"-5".
- No feeding is to be given for complete one day before harvesting.
- Acclimatization for 4 - 6 hours is needed before packing for transportation. Fry / fingerling can be stocked in Happa for at least 4-6 hours before transport.
- Fingerlings can be marketed & transported by Oxygen packing in poly bags for distant places.



### Economics of Nursery Pond

Approximate production cost, output and net income from a 25 Decimal nursery ponds in One Cycle

S. No.	Item	Quantity / 25 Decimal	Unit Cost	Total Cost (Rs)
<b>(A) INPUT</b>				
1.	Weed clearance			400
2.	Eradication of predatory and weed fishes, using Bleaching powder	35 kg	Rs 25/Kg	875
3.	Organic manure	500 kg	Rs 1/Kg	500
4.	Lime	50 kg	Rs 10/Kg	500
5.	Kerosene	6 liters	Rs 80/L	480
6.	Soap/ detergent			100
7.	Stocking of 5 lakh Spawn	5 Lakh	Rs 600/L	3000
8.	Supplementary feed Spawn to Fry	186 kg	Rs 26/Kg	4836.00
9.	Supplementary Feed Fry to Fingerling	154 kg	Rs 25/kg	3840.00
10.	Maintenance and miscellaneous			469.00
	<b>Total input cost</b>			<b>15,000.00</b>
<b>B. RETURN</b>				
1.	Fingerlings survived (at an average survival level of 10%)	50000		
2.	Weight @ 200 piece/Kg	250 Kg	Rs 300/Kg	75000
<b>C.NET PROFIT (B-A)</b>			<b>Rs. 75,000 - Rs. 15,000 =</b>	<b>60,000</b>
			<b>(Say)</b>	<b>60,000</b>

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