HANDLING & TRANSPORT PRACTICES FOR HIGH FISH WELFARE

FARMER GUIDE

FISH WELFARE INITIATIVE

karthik@fwi.fish  fwi.fish
Healthy stocking densities are the most important way to ensure fish welfare.

High stocking densities
- increase disease rates
- lower water quality
- increase number of lesions
- increase aggressive behaviour
- increase mortality rates

NURSERY STAGE

Poor stocking and transportation from the hatchery are among the major causes of low survival in grow-out ponds.

<table>
<thead>
<tr>
<th>Good Fry</th>
<th>Releasing fish into the pond</th>
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</thead>
<tbody>
<tr>
<td>Restless and fast swimming</td>
<td>• Slowly add water from the pond into the bag over 30 minutes.</td>
</tr>
<tr>
<td>Shiny and bright color</td>
<td>• Stock fish early in the morning on a dry day.</td>
</tr>
<tr>
<td>Smooth body</td>
<td>• Remove any dead fish.</td>
</tr>
<tr>
<td>No injuries or marks</td>
<td></td>
</tr>
<tr>
<td>Swim against current</td>
<td></td>
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<tr>
<td>React vividly to touch</td>
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<table>
<thead>
<tr>
<th>Bad Fry</th>
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<tr>
<td>Calm and quiet</td>
<td></td>
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<tr>
<td>Sluggish or inactive</td>
<td></td>
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<tr>
<td>Pale and dull color</td>
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<tr>
<td>Rough body/scales</td>
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<tr>
<td>Red marks on body</td>
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<tr>
<td>Slow or no reaction to touch</td>
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Crowding is very stressful for fish. **Minimize the frequency and time crowded.** Only crowd fish early during **cooler temperatures** (early morning or late evening) and when the **water quality is good.**

- **Plan** the procedure in advance.
- **Do not feed** fish **24-48 hours** before crowding.
- **Use gloves & disinfect** equipment.
- **Use small-mesh rubber nets.**
- **Avoid crowding too many fish** at once. Attract only few with feed.
- **Keep fish in water** as much as possible.
- **Avoid lifting up mud.**
- **Handle fish quickly** (max. 15 seconds out of the water).
- **Never throw fish through the air.**
Sampling refers to the temporary removal of fish from the pond to check the health, growth, and general well-being of the fish.

**Sampling Best Practices**

- Follow the instructions on Crowding & Handling above.
- Attract fish with feed and only catch few to avoid unnecessary stress to the individuals not sampled.
- The sample taken should be random and truly representative of the total population.
- While sampling, **cover the fish’s eyes with a clean, wet cloth**.
- After sampling the fish, return them gently to the pond by letting them swim out of your hand or the net. Do **not throw them**.

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Removing fish from water is very stressful for the fish. Poor handling increases the likelihood of future mortality and disease.

**HANDLE FISH AS LITTLE AS POSSIBLE.**
TRANSPORTING FISH

1. PREPARE YOUR FISH
   1. Starve fish for 24-48hrs.
   2. Count fish.
   3. Observe fish - are they healthy?

2. PREPARE CONTAINERS
   1. Insulated.
   2. No sharp edges.
   3. No leak.

3. LOADING AND UNLOADING
   1. Ensure fish are clean and healthy.
   3. Oxygenate the water to 100% saturation.

4. DURING TRANSPORT
   1. Monitor water quality.
      a) Dissolved oxygen: 100%
      b) Alkalinity (>90 mg CaCO3/l)
      c) pH (7 to 7.5)