

STANDARD OPERATION PROCEDURE

Lumpfish larvae transport





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Lumpfish larvae transport– Standard Operating Procedures 2, version2, Centre for Sustainable Aquatic Research, 5 pages.

NEED

The safe transport of lumpfish larvae is a legal requirement in the UK.

Anyone involved with the transport of live fish must be aware of their obligations to protect animals during transport (See the Aquatic Animal Health (England & Wales) Regulations 2009).

NOVELTY

As lumpfish stick to surfaces, transporting larvae in a transport container can cause more harm to the fish due to difficulties of removing fish on arrival.

Therefore, CSAR has developed a SOP for the safe transport of lumpfish larvae within bags and insulated boxes.

EQUIPMENT USED

- | | |
|--|--|
| <input type="checkbox"/> Oxygen bottles | <input type="checkbox"/> Tally counter |
| <input type="checkbox"/> Plastic bags | <input type="checkbox"/> 2L jugs |
| <input type="checkbox"/> Elastic bands | <input type="checkbox"/> Soft brush |
| <input type="checkbox"/> Insulated polystyrene boxes | <input type="checkbox"/> Transport documents |
| <input type="checkbox"/> Cardboard boxes | <input type="checkbox"/> Ice packs |
| <input type="checkbox"/> | <input type="checkbox"/> |
| <input type="checkbox"/> | <input type="checkbox"/> |

Transport trial

1. Ensure that numbers of larvae to be transported per bag have been pre-agreed with the receiving party.
2. Carry out a transport trial (by monitoring oxygen levels) to ensure that the density of larvae to be stocked in each bag can survive the transport time between CSAR and the receiving facility. Should DO levels drop below 5mg/l stop the trial and reassess densities.

Preparation

1. Prepare the polystyrene boxes with fish transport bags (doubled). Wrap the edges of the plastic bags over the box and leave the lids off.
2. Fill up to 10 of the fish transport boxes with 14 L of system water (avoid filling more than 10 to prevent the water heating up).
3. Start to fish/siphon the larvae out of the tanks into a 2L jug/mesh tub.

Counting

4. Count desired number of larvae to be transported per bag into a 2L jug of system water.
5. Use this sample as a reference for density of fish per transport bag.
6. Alternatively, older fish can be counted and weighed, and then the weight used as a reference for each transport bag.

Bagging

7. Add desired number of larvae to each transport bag.
8. Use the soft brush to gently remove lumpfish from the side of the jug.
9. Top up the transport bags with the remaining volume of water required for transport.
10. Wrap the excess of the plastic bag twisting it for two turns.

11. Add oxygen directly into the water to a maximum of 120%
12. Add oxygen to the bags [1/3rd H₂O: 2/3^{rds} O₂] (Ensure to keep hand tight around the neck of the bag and the oxygen hose while doing this).
13. Remove the oxygen hose and then twist and tighten the bag until you are able to wrap it with the elastic bands.
14. If transport vehicle has no means of keeping the boxes cool, wrap ice packs in paper towel and place on top of the bags.
15. Close the box with the polystyrene lid
16. Close the cardboard box lid.
17. Tape the lid shut
18. Provide transport documents to driver.

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