

6. Take another 20-30 PL from the batch, put them in a glass half full with the hatchery tank water, add an equal volume of fresh water and wait for one hour. If more than one quarter dies, look for a better batch. If it is good quality there should not be any mortality for 2 hours.

7. Check the same 10 PL using microscope to see if any of them are dirty. If they are, look for a better batch.



courtesy Prof Timothy Flegel

courtesy Prof Timothy Flegel

8. Check the same 10 PL using microscope to see if any of them have many legs damaged (broken and black) or missing. If they are, look for a better batch.



courtesy Prof Timothy Flegel

9. Check the same 10 PL, using microscope to see the proportion of the muscle in the last abdominal segment. The healthy fry should have muscle thickness about 4 times the thickness of the gut. The gut should be full of food.



10. Take another 15 PL from better batch in plastic bag with water and give them alive to a laboratory for MBV test. Try to take only batches which test negative for MBV.

11. Take another 60 PL from the batch and put them in small jar with alcohol and deliver them to a PCR laboratory for WSSV testing. Take only batches which test negative for WSSV.

12. The recommended densities in the transportation bags (2 liters of water) are 1000 (PL20) to 1500 (PL15) maximum. Transport during morning or evening time.



13. Use on-farm nursery (5 to 10% of the total pond area) to improve post-stocking survival, avoid procuring juveniles from commercial nurseries. Use of nursery systems help to produce better quality (larger and uniform size) seed.



Avoid commercial nursery

14. Prior to stocking in nursery eliminate weak PL. To do this PL are treated with 100 ppm formalin (50ml/ 500litres) in a 500 liter tank with aeration. After this treatment the water is stirred to concentrate all the dead and weak PL at the center-bottom of the tank which should be siphoned off before siphoning rest of the healthy PL to the nursery tank.



15. Ideal stocking density in nursery tank is 100 PL per m² (should not exceed 150 PL per m²). Shift the seeds from nursery within two weeks to grow out ponds



SHRIMP HEALTH MANAGEMENT

REDUCING SHRIMP DISEASE RISKS THROUGH
ADOPTION OF BETTER MANAGEMENT PRACTICES



2. SELECTION OF GOOD QUALITY SEED



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BACKGROUND

As a part of the technical collaboration between MPEDA and NACA on shrimp disease control in India, village demonstration programmes were conducted between 2002 to 2005. These demonstration programmes involved organizing small scale farmers into self-help groups known as “Aquaclubs” for adoption of “Better Management Practices (BMPs)” towards capacity building among the farmers. Selection of good quality Postlarvae (PL) for stocking into a pond is the important step of the shrimp grow-out management. The farmer must ensure that he or she gets healthy PL by purchasing them from reliable hatcheries



Contract Hatchery System:

MPEDA-NACA has introduced the “**Contract hatchery seed production system**” to meet the seed requirements of Aquaclub farmers to avoid the difficulties in procurement of good quality seeds. Important features of this system are-PCR and MBV screening of Broods, Single brooder spawning to reduce size difference and to get uniform sized shrimp at harvest, no use of banned antibiotics.



Under Contract hatchery system, Aquaclub farmers place bulk orders to a hatchery, 45-60 days in advance of the planned stocking date. Mutual agreement is formed between selected hatcheries and Aquaclubs. As far as possible try to procure seed through contract hatchery system.



Seed selection and stocking guidelines:

1. Organize stocking so that all the farmers in your area stock within 2 weeks. Within one area, try to stock the seed from the same batch in neighboring ponds

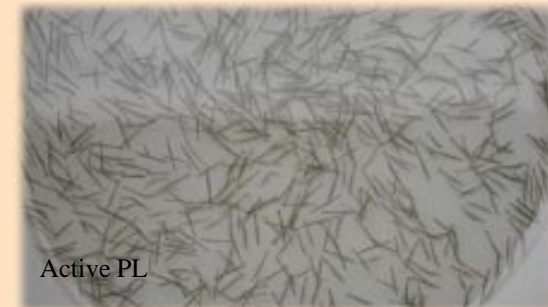


2. Select one or two reputed hatcheries within 6 hour drive from your farm site to visit and to examine seed quality.

3. Select seed batches with uniform size (no mixing of nauplius from different brooders in LRT). PL15 should be about 12mm in total length. If they are smaller, they may not be ready for stocking



4. Good quality PL will be light gray or brown in colour. Signs of red or pink coloration are normally related to stress.
5. Select seed batches with good activity. To assess activity, collect a sample from the bottom of the tank. Put the PL in a large bowl and stir the water rapidly. If most of the PL concentrate in the center, they are weak and the batch is poor. Healthy fry swim straight against the current.



Active PL



Weak PL