

Internship Experiment in the Aquaculture Research Sub-Institute for Hai Yen *Penaeus monodon* seed production unit-Hoang Phu, Hoang Hoa, Thanh Hoa, Vietnam

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Topic rationale

The shrimp in the world has appeared many centuries ago, but modern shrimp farming began especial in Europe and South America.

Vietnam is an area of large shrimp in the world, beyond Indonesia, the country's largest shrimp farming area in 1996, about 360,000 hectares (Hanafi and T. Ahmad, 1999). Annual export value of shrimp brought more than \$ 1 billion, while the water head on shrimp export.

Shrimp farming area has increased from 250,000ha in 2000 to 478,000ha in 2001, 540,000ha in 2003 and in 2004 was 592,600ha.

Total production of shrimp farms in the country increased to 2006 farms in 1998 and produced 6.6 billion PL15 shrimp. By 2003, there are more than 5000 varieties of shrimp farms, but still concentrated in central and south with shrimp production reached 25 billion PL15.

Derived from actual production, which aims to study, grasp the situation of production. During the practice field is assigned by the graduate institute school of Hanoi Agriculture University, Research

Institute of Aquaculture I, so I made the theme:

“Understanding the process of hatching larvae shrimp seed (*P. monodon*) and evaluate the effects of biological products PC-1 SUPER PROBIOTIC PURE to environment of artificial hatching larvae shrimp seed (*P. monodon*) in Hai Yen *P. monodon* seed production unit - Hoang Phu commune - Hoang Hoa district - Thanh Hoa province”

The purpose of the project

To clean environment in the tank level, eliminate toxic gases – effective against the mucous – decomposing excess food in tank level and to improve the water environment, to prevent the phenomenon of white larvae death – early stage post larvae.

To raise the survival rate of larvae, created for shrimp which have good seeds.

- Survival rate of 50% - 55%
- Shrimp is bright colors, even size, evenly distributed group

Mastering, as the main technological processes and technical data, stable product quality.

Results of the study

1. Similarity of shrimp larvae hatching methods

1.1. Prepare treatment ponds

- Sedimentation pond: must be prepared carefully using leak proof and especially clean.
- Pool treatment: Disinfect with soap, then clean with chlorine, for 30 minutes and rinse using fresh water.

1.2. Preparing trickling filters

- Filter tank and filtration sand must be washed several times with clean fresh water.
- When sand filters are put into tanks, filtration system is again disinfected with formalin of moderate levels from 10 - 15ppm.

1.3. Preparing the hatching tank

- Larvae hatching tank must soap and scrub it using brush again and again, then wash it with fresh water through to clean out soap. Then throw chlorine or formalin, tightly cover with canvas, for 30 minutes or more and finally washed with fresh water. For so long term used tanks, fulfill it with fresh water, then mix the chlorine for 2-3 days and following same cleaning procedure.

1.4. Preparing hatching equipment

- Buckets, pots, wine, tap wire or any possible used tool need to be soaked with chlorine before using.
- Air line, air stone, pumice stone must be cleaned and soaked with chlorine. Separate air stone, pumice may boil before using.

2. Process of hatching, production

2.1. Water is pumped from the sea to sedimentation pond for settling down coarse organic matter, then driven into the treatment tank at a formalin concentration of 20 – 30 ppm at night time in a period of 72 hours.

- When the water has been treated, it is pumped through the cleaned filtration tank, from here water goes directly to hatching tank

- Level water up to about 2/3 of the tank and apply EDTA at concentration 5-10ppm before hatching.

2.2. Transferring nauplius to hatching tanks.

About 36 – 38 hours after spawning, apply of Nauplius collecting using racket. First light need turning on, and turn off when nauplius floating and concentrated at the light course. Using racket to harvest gently. Before move to hatching tanks. Nauplius must be have a bath using formalin at a moderate concentration.

3. Hatching process

- From Nauplius to Zoea 1: collect Zoea using Tzoa2 with a doses of 1g/1m³. After an hour application, zoea will move out, synthetic food can be used.

- Zoea 1 of good quality ca be fed with Lansy, Ripax, Prulyna... depending on dose, density of larvae in tanks.

- Feeding frequency is six times/day with slight aeration. When Zoea shifts to Mysis 1, start cleaning tube and reduced airflow for the settlement of organic matter to tank bottom and siphoning to remove it from tanks. Continuing to use the sieve for

spreading feed over tank for a few hours till transferred to Mysis 1 (5 – 6 days).

- Mysis 1 needs supplement food- ACTMIA. Feeding of 2 times for synthetic food and once for supplement ACTMIA. During Mysis 3 applied siphon to replace 20% of the water volume in the tank and EDTA at $1\text{g}/\text{m}^3$.

- When Mysis 3 shifts to post larvae: Feeding frequency was of twice using ACTMIA, exchange 30 - 40% of water in the tank and strong aeration at the same time. In addition to periodical exchange or add fresh water in the tank to reduce the salinity level for better molting.

2. Use of Probiotics PC – 1 SUPER PROBIOTIC PURE

* Stage before shifting to zoea larvae.

- Use of the probiotics at the dose of $1\text{gram}/\text{m}^3$

* Stage of zoea, mysis, post larvae:

- Use $0.5 - 1\text{gram}/\text{m}^3$, every 3 days.

* When use of antibiotics or chemicals.

- Probiotics application should be done at least 48 after antibiotics utilization. In this case a dose of $1\text{g}/\text{m}^3$ to be treated.

* During season shifting and poor weather condition with possible disease outbreak.

- Applying twice a day with a dose of $0.5 - 1\text{g}/\text{m}^3$.

* Slimy water and scumming surface.

- Use of $2\text{g}/\text{m}^3$ every a day.

Conclusion

- A comprehensive understanding of shrimp larvae nursing should continue to study and replicate the model in the production of artificial shrimp seed. This is important to improve nursing practice to have more PL produced meeting demand of PL for crops.
- Use of probiotics PC – 1 SUPER PROBIOTIC PURE in the shrimp larvae hatching tank could reduce toxic gases (NH_3 , H_2S), enhance biological decomposition of organic matter (uneaten food, excreta) offering favorable water conditions for growth and development of shrimp larvae.

Recommendations

From the results of the study some suggestions was made as followings:

- Probiotics PC – 1 SUPER PROBIOTIC PURE should be used in the process of hatching shrimp larvae because of improvement of water quality.

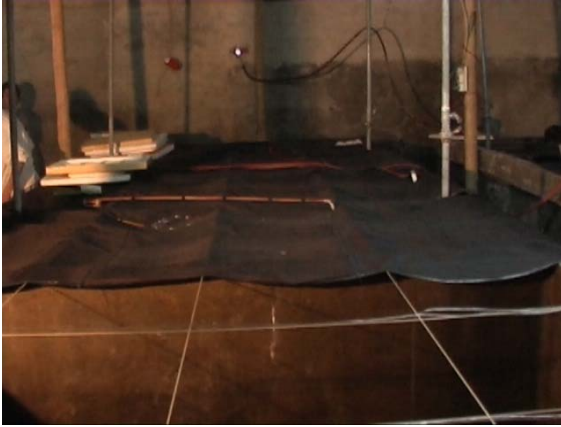
- The experiment should continue for more solid foundation when applied to mass production.

A word of thanks

For completing the internship program of great success, I had received many help from Manager of HAI YEN and its technical staffs including supports from group of sea cage culture, live food production and others under the hatchery. I gratefully thank for all their help.

I would also like to thank Dr Ngo Van Tinh who taught me in marine aquaculture subject as well as for his supervision during the internship period.

Some of photos taken during research work



Hygiene tank



Tank compeled



Zoea Tank



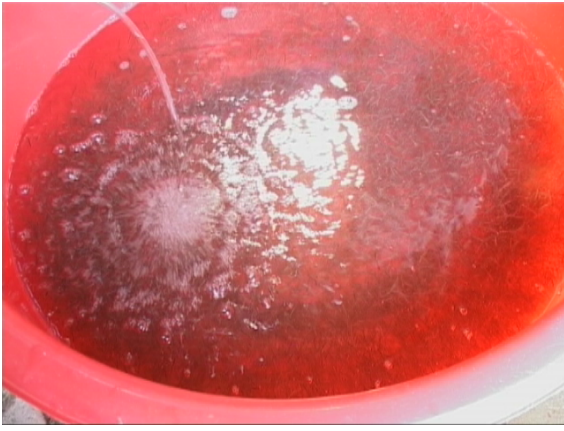
Mysys Tank



PL tank



Health inspection



Ready to sell



PL counting



PL Packing