

PHILIPPINE NATIONAL STANDARD

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Code of Good Aquaculture Practices (GAqP) on Hatchery for Shrimp



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Foreword

The Philippine National Standard (PNS) Code of Good Aquaculture Practices (GAqP) on Hatchery for Shrimp was established and developed by the Bureau of Agriculture and Fisheries Standards (BAFS) with the guidance of the Technical Working Group (TWG). A TWG for the development of the said standard was created through Special Order No.603 Series of 2017.

The TWG is composed of representatives coming from the Bureau of Fisheries and Aquatic Resources (BFAR), Southeast Asian Fisheries Development Center (SEAFDEC) and Department of Science and Technology – Philippine Council for Agriculture, Aquatic and Natural Resources Research and Development (DOST-PCAARRD) with BAFS.

This PNS aims to prevent or reduce the risk of hazards occurring during pre-production, production, harvesting, and postharvest handling of aquaculture products, and ensuring aquatic animal health and welfare. This will also cover the food safety and quality requirements of the said fish and fishery products which will guide our local producers to have safe and quality products, protect the health of consumer and ensure global competitiveness.

This standard has been technically prepared in accordance with the International Organization for Standardization/International Electrotechnical Commission (ISO/IEC) Directives Part 2, 8th edition – Principles and rules for the structure and drafting of ISO and IEC documents.

The word “shall” is used to indicate mandatory requirements to conform to the standard.

The word “should” is used to indicate that among several possibilities one is recommended as particularly suitable without mentioning or excluding others.

1 Scope

This Code of Good Aquaculture Practices (GAqP) covers all stages of farm practices in penaeid shrimp hatchery and nursery including harvesting, collecting, and packaging and handling of eggs, larvae and post larvae prior to transportation in order to produce good quality post larvae for farming. It was taken into account the following aspects of aquaculture production such as food safety, animal health and welfare, environmental integrity and socio-economic responsibility.

This Code consists of minimum compliance requirements.

2 Normative references

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced documents (including amendment) applies.

There are no normative references in this document.

3 Definition of Terms

3.1

feed

is any single or multiple materials, whether processed, semi-processed or live and raw, which is intended to be fed directly to domesticated animals to meet the nutrient requirements in order to maintain life, promote growth, production and reproduction without any additional substance except water

3.2

shrimp hatchery and nursery

establishment used for shrimp hatchery and nursery consisting of areas for broodstock conditioning, maturation, spawning, hatching and larval rearing facilities, feed preparation/production and storage, life support systems, waste water treatment and packing area

3.3

shrimp broodstock

mature shrimp for breeding purposes

3.4

larvae

newly hatched from eggs which consist of three stages: nauplii, zoea and mysis

3.5

post larvae (PL)

usually refers only to the stage immediately following the larvae and which shows already juvenile characters such as fin rays

3.6**biosecurity**

as the practice of exclusion of specific pathogens from cultured aquatic stocks in broodstock facilities, hatcheries, and farms, or from entire regions or countries for the purpose of disease prevention

3.7**disease**

any adverse condition due to biotic (living or infectious) agents or abiotic (non-living) agents that adversely affects culture performance

3.8**veterinary drug**

any substance applied or administered to any food-producing animal, whether used for therapeutic, prophylactic, or diagnostic purposes or for modification of physiological functions or behavior

3.9**competent authority**

refers to a bureau or agency mandated by law with the responsibility for the implementation of sanitary and phytosanitary (SPS) measures

4 Site selection**4.1 Location**

4.1.1 Hatchery and nursery should be located in area where risk of pollution or contamination can be controlled or mitigated.

4.1.2 Hatchery and nursery shall be compliant to the existing environmental regulations by the competent authority.

4.1.3 Hatchery and nursery owner or operator shall have proof of legal rights, privileges or ownership of the area and its location map as required by the competent authority.

4.1.4 Hatchery and nursery shall be registered with the competent authority.

4.1.5 Hatchery and nursery should have convenient access to transportation both inside and outside the farm for quick operations and transport of post larvae.

4.1.6 Hatchery shall not be located inside or beside the grow-out pond for biosecurity reasons. Existing hatchery and larval rearing facility shall have the distinct separation from the grow-out ponds and should integrate biosecurity measures to prevent cross contamination.

4.1.7 Hatchery and nursery facilities should be enclosed.

4.2 Lay-out and design

4.2.1 Hatchery and nursery lay-out should be designed with proper space for its establishment and should integrate bio-security measures to prevent cross contamination.

4.2.2 Reservoir for incoming water and settling pond or treatment facility for effluents shall be available.

5 Broodstock management

5.1 Source of broodstock shall be identified as either coming from the wild or broodstock facility accredited by the competent authority.

5.2 Broodstock shall be healthy and disease-free or non-disease carrier. *Penaeus monodon* broodstock collected from the wild should be screened for diseases prior to breeding and spawning.

5.3 Health certificate should be issued by the competent authority for in-country transboundary movement of live broodstock.

5.4 Stocking density of broodstock shall be appropriate.

6 Biosecurity and General management

6.1 Protocol for hatchery and nursery operations shall be made available and implemented accordingly.

6.2 Hatchery and nursery facilities shall be disinfected after every operation and prepared properly prior to stocking.

6.3 Stocking density for hatchery and nursery shall be appropriate.

6.4 Preventive measures against the entry of undesirable species and disease-carrier animals shall be undertaken during the preparation and operations.

6.5 Appropriate life support systems shall be provided in the hatchery and nursery tanks.

6.6 Wild and domesticated animals are not allowed in the hatchery and nursery production areas.

7 Water Management

7.1 Water should conform to the existing standard set by the competent authority. Suitable water quality should be maintained for shrimp hatchery and nursery.

7.2 Water inlet shall be screened in order to prevent the entry of undesirable species.

7.3 Basic water quality parameters (temperature, salinity, pH, dissolve oxygen etc.) in hatchery and nursery shall be checked daily or on a regular basis.

7.4 Water quality shall be examined for hazards (chemical, biological, microbial and other contaminants) periodically.

8 Feeding Management

8.1 Live feed and natural food should be free of pathogen and contaminants.

8.2 Only approved and registered commercial feeds, feed ingredients and additives shall be used.

8.3 Good quality feeds shall be used. In case farm-made feed is prepared in the hatchery and nursery, feed ingredients used for the formulation shall be identified and recorded.

8.4 Efficient feeding management should be provided to meet the nutritional requirement of the larvae and post larvae.

8.5 Feed shall be stored in an area that can prevent the contamination and should apply the first-in, first-out policy to maintain the quality of feed.

9 Shrimp health management

9.1 Hatchery and nursery operation should implement the following management practices (e.g. OIE Aquatic Animal Health Code) for aquatic animal health management.

9.1.1 Larvae and post larvae health shall be monitored regularly at least twice before harvest. Health certificates and laboratory results issued by the competent authority should be presented to the buyer or grower.

9.1.2 In cases where the larvae and post larvae show any sign of disease and/or poor health, the disease diagnosis and corresponding corrective actions shall be carried out.

9.1.3 Preventive measures and control of disease outbreak shall be in place including proper waste disposal of diseased animal.

9.1.4 In cases of disease outbreak, hatchery and nursery operators shall disinfect the affected tank prior to release to their effluent/ treatment pond. A dry up period should be should be observe to break the cycle of disease.

9.2 Larvae and post larvae health shall be monitored regularly.

9.3 In cases where the larvae and post larvae show any sign of disease and/or poor health, the disease diagnosis and corresponding corrective actions shall be carried out.

9.4 Preventive measures and control of disease outbreak shall be in place.

9.5 In cases of disease outbreak, hatchery and nursery operators shall immediately inform the competent authority.

9.6 Diseased shrimp should be discarded appropriately.

10 Chemical and biological substances use

10.1 Substances requiring prescription should be administered with the supervision of a qualified expert/trained technician authorized by the competent authority.

10.2 Whenever necessary and allowed, approved and registered veterinary drugs, medicated feeds, chemical and biological substances shall only be used according to the manufacturer's instruction.

10.3 Veterinary drugs, chemicals, hazardous substances and probiotics shall be stored appropriately to prevent deterioration and unnecessary use.

11 Effluent management

11.1 Quality of discharge water from hatchery and nursery shall be held in effluent treatment pond/tank and shall comply with relevant laws and regulations.

11.2 In cases of disease occurrences, treatment of effluent water prior to release shall be implemented.

12 Harvest, collecting and post-harvest handling prior to distribution

12.1 Larvae and post larvae shall be hygienically managed and handled to prevent contamination during the harvest and post-harvest.

12.2 Harvesting should be planned in advance and timed to prevent eggs, larvae, post larvae from being exposed beyond the optimal range of temperatures.

12.3 Chemicals shall be used properly in terms of type and quantity. Workers handling these chemicals shall use protective gears according to manufacturer's specification.

12.4 Packing methods, containers, equipment and packing density shall be appropriate to the size of eggs, larvae and post larvae, and the duration of transport.

12.5 Local transport permit accompanied by health certificate and laboratory result for post larvae shall be secured from the issuing authority of the Fisheries and Aquatic Resources prior to transport.

13 Hatchery and Nursery Sanitation

13.1 Proper disposal of garbage, veterinary drug containers and hazardous substances shall be implemented in order to prevent cross-contamination and animal scavenging. Also, preventive measures against disease carrier animals shall be in place.

13.2 All production inputs, materials and tools should be kept properly to prevent deterioration or contamination.

13.3 Adequate procedures for cleaning and disinfection of vehicles, containers, equipment and farm facilities should be in place and implemented.

13.4 Bathrooms and toilets shall be hygienically maintained to prevent contamination to the hatchery and nursery facilities.

13.5 Wild and domesticated animals are not allowed in the hatchery and nursery production areas.

14 Energy and Fuel

14.1 Fuel and lubricant shall be stored properly and securely.

14.2 Machines used in the hatchery shall be in good condition and used lubricants shall be placed in an appropriate container and discarded properly.

14.3 There shall be a safe electrical system on farm.

15 Labor and Welfare

15.1 Pro-active anti child labor policy shall be compliant with the existing standards

15.2 Workers should not be discriminated against the basis of gender, race, religion, culture and age.

15.3 Workers should receive fair treatment and salary consistent with the existing laws and other regulations.

15.4 Appropriate welfare for workers should be provided.

15.5 Appropriate safety precautions and personal protective equipment should be provided for safety operations.

15.6 Workers shall be trained on the safety operation.

16 Social and environmental responsibilities

16.1 Hatchery and nursery sites shall not obstruct the customary access and/or interfere in the living and activities of the local community.

16.2 Hatchery and nursery owners and workers should maintain a harmonious relationship with the community.

16.3 Hatchery and nursery owners should participate in activities of hatchery and nursery organization or other related activities.

17 Record keeping

17.1 The following information shall be recorded:

- broodstock origin and management protocol
- hatchery and nursery management protocol including feeding and water management
- estimated production volume/quantity distributed to farms
- disease history of the hatchery and nursery facility
- preventive measures against and control of disease outbreak
- purchase and use of veterinary drugs, chemicals, hazardous substances, probiotics and other inputs
- employment and wage payment
- potential clients
- health certificates, LTP and laboratory results

17.2 Other necessary information and relevant data shall be recorded and kept for further inspection, such as record of problems, causes and corrective actions.

Bibliography

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National Bureau of Agricultural Commodity and Food Standards Ministry of Agriculture and Cooperatives. 2012. TAS 7422-2012 Good Aquaculture Practices for Marine Shrimp Hatchery and Nursery. Chatuchak, Bangkok, Thailand.

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