

PHILIPPINE NATIONAL STANDARD

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Code of Good Aquaculture Practices (GAqP) on Hatchery for Freshwater Prawn



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Foreword

The Philippine National Standard (PNS) Code of Good Aquaculture Practices (GAqP) on Hatchery for Freshwater Prawn 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), Integrated Services for the Development of Fisheries and Aquaculture, Inc. (ISDA Inc.), Oversea Feeds Corporation, Central Luzon State University (CLSU) 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 culture practices in freshwater prawn hatchery operations including broodstock management, collecting, harvesting, packing, handling and transport of berried females, larvae and post larvae in order to produce good quality seed stock for nursery and/or grow-out culture. It taken into account the following aspects of aquaculture production such as food safety, animal health and welfare, environmental integrity, food sustainability 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 Terms and Definitions

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 animals to meet the nutrient requirements for growth, survival and reproduction

a.) natural food

is any live food item, usually plankton and/or brine shrimp (*Artemia* spp.) administered to the early stages (hatchlings, larvae, post larvae) in the life cycle of aquatic animals

b.) formulated/artificial feed

is any formulated/artificially prepared food (e.g. egg custard for larval stages) or supplemental feed (containing single material) or complete feed made to contain multiple dry and/or wet ingredients based on the nutritional requirements of the animal. Artificial feed or diets may be made on-farm using simple small-scale equipment or in bulk, in the case of commercial scale production. Formulated/artificial feeds are fed to the animal to maintain life, promote growth, production and reproduction. Only duly registered feeds by the competent authority shall be used

3.2

prawn hatchery

establishment used for prawn breeding and larval rearing consisting of facilities for broodstock management, hatching and larval rearing, feed/food preparation, production and storage, life support systems, and packing

3.3**prawn broodstock**

mature prawn for breeding purposes

3.4**larvae**

newly hatched from eggs which consist of 11 stages and are reared in brackishwater (10-15 ppt)

3.5**post larvae (PL)**

prawn fry that underwent 11 larval stages and are ready for rearing in freshwater

3.6**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

4 Site selection**4.1 Location**

4.1.1 Hatchery should have steady supply of freshwater and brackish water or saltwater where risk of pollution or contamination can be controlled or mitigated.

4.1.2 Hatchery and larval rearing facility shall have the distinct separation from the grow-out ponds and should integrate biosecurity measures to prevent cross contamination.

4.1.3 Hatchery should have access to sources of power.

4.1.4 Hatchery should have access to inputs (broodstock, feeds, veterinary drugs, supplies and materials, tools and equipment) for quick operation

4.1.5 Hatchery shall be compliant to the existing environmental regulations by the competent authority.

4.1.6 Hatchery owner or operator shall have proof of legal rights, privileges or ownership of the area and its location map as a requirement for registration with the competent authority.

4.2 Lay-out and design

4.2.1 Hatchery lay-out should be designed with proper space for its establishment and should integrate bio-security measures to prevent disease occurrence and 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 Broodstock shall be obtained from an identified source and shall be documented for traceability purposes.

5.2 Transboundary movement of broodstock shall require laboratory results and health certificate.

6 General management

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

6.2 Hatchery facilities and implements shall be disinfected after every operation and prepared properly prior to use.

6.4 Biosecurity measures against the entry of pathogens shall be undertaken at all times.

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

7 Water Management

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

7.2 Water sources shall be free from any undesirable materials/animals.

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

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

8 Feeding management

8.1 Natural food and formulated/artificial feeds should be free of pathogen and contaminants.

8.2 Only commercial feeds, feed ingredients and additives approved and registered by the competent authority shall be used.

8.3 Good quality formulated feeds shall be used. In case formulated feed is prepared in the hatchery, 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 Prawn health management

9.1 Hatchery operation should follow existing standards (e.g. OIE Aquatic Animal Health Code) for aquatic animal health management.

9.2 Broodstock, larvae and post larvae health shall be regularly monitored and properly documented by the operators

9.3 In case the broodstock, larvae and post larvae have been diagnosed of any disease, appropriate, corrective measures shall be carried out.

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

9.5 In cases of disease occurrence, hatchery operators shall immediately inform the competent authority and implement necessary biosecurity measures to prevent the spread.

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

Discharged water from hatchery shall comply with relevant laws and regulations.

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

12.1 During harvest and post-harvest, post larvae shall be properly managed and handled to minimize stress.

12.2 Harvesting of larvae and post larvae should be done under optimal environmental condition (e.g. temperature).

12.4 Packing methods, containers, equipment and packing density shall be appropriate to the size of 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 prior to transport.

13 Hatchery 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. Likewise, preventive measures against disease carrying animals shall be in place.

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

13.3 Adequate procedures for cleaning and disinfection of vehicles, containers, equipment, boots and farm facilities should be in place and implemented as part of the biosecurity measures.

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

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

13.6 Pest control program should be in place.

13.7 Area for cooking and dining should be provided separately.

14 Energy and fuel

14.1 Fuel and lubricant shall be stored properly and securely.

14.2 Used lubricant shall be placed in an appropriate container and disposed of properly.

14.3 There shall be a safe electrical system in the hatchery.

15 Labor and welfare

15.1 Pro-active anti-child labor policy should exist in the farm and shall be compliant with the existing standards.

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

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 continuously trained on occupational health and safety operation as required.

15.7 Services of a licensed fisheries professional should be available.

16 Social and environmental responsibilities

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

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

16.3 Hatchery owners should be familiar with all the activities involved in hatchery operation and other related activities.

17 Record keeping

17.1 The following information shall be recorded:

- organizational structure
- hatchery lay-out and design
- broodstock origin and management protocol
- hatchery management protocol
- actual production volume/ quantity distributed to farms
- water quality monitoring-disease history of the hatchery facility
- preventive measures against and control of disease outbreak
- inputs used and inventory of veterinary drugs, probiotics, hazardous substances and other chemicals
- employment and wage payment
- mortalities and other problems

-potential clients

17.2 Other necessary information and relevant data shall be recorded and kept for further inspection, such as laboratory results, record of problems, causes and corrective measures and other action plans.

Annex A

Optimum Water Quality Requirement for the Hatchery of Freshwater Prawn

Parameters	Optimum level
Salinity	12 ppt
Temperature	28-31 °C
Dissolved oxygen	4-7 ppm
pH	7.0- 8.5
Ammonia (NH ₃ -)	0.1-0.2 ppm
Alkalinity	25-100 ppm
Transparency	30-40 cm

Note: From Tayame, M.M. 2001. NFFTC Aqua-Leaflet No. 2001-10 Biology and Hatchery Management of the Giant Freshwater Prawn. and Bureau of Fisheries and Aquatic Resources National Freshwater Fisheries Technology Center. N.D. Grow-out Farming of Organic Giant Freshwater Prawn in Pond.

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