



# MALAYSIAN STANDARD

MS 1998:2017

## Good aquaculture practice (GAqP) - Aquaculture farm (First revision)

ICS: 65.150

Descriptors: good aquaculture practice, aquaculture farm

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### **Committee representation**

The Industry Standards Committee on Agriculture (ISC A) under whose authority this Malaysian Standard was developed, comprises representatives from the following organisations:

Department of Agriculture Malaysia  
Department of Agriculture Sabah  
Department of Agriculture Sarawak  
Department of Fisheries Malaysia  
Department of Standards Malaysia  
Department of Veterinary Services  
Farmers' Organization Authority  
Federal Agricultural Marketing Authority  
Federation of Livestock Farmers' Associations of Malaysia  
Forest Research Institute Malaysia (FRIM)  
Malaysia Fruit Exporters Association  
Malaysian Agricultural Research and Development Institute  
Malaysian Association of Standards Users  
Ministry of Agriculture and Agro-Based Industry Malaysia  
Ministry of Domestic Trade, Co-operatives and Consumerism  
Ministry of Health Malaysia  
Ministry of Plantation Industries and Commodities  
National Farmers Organization  
National Seed Association Malaysia  
SIRIM Berhad (Secretariat)  
The Federation of Vegetables Growers' Associations Malaysia  
Universiti Putra Malaysia

The Technical Committee on Aquaculture which developed this Malaysian Standard consists of representatives from the following organisations:

Asia Aquaculture (M) Sdn Bhd  
Central Terengganu Development Authority  
Department of Agriculture Sarawak  
Department of Fisheries Malaysia  
Department of Fisheries Sabah  
Fisheries Development Authority of Malaysia  
Fisheries Research Institute Malaysia  
INFOFISH (Malaysia)  
Malaysia Marine Fish Farmers Association  
Malaysia Shrimp Industry Association  
Ministry of Health Malaysia  
SIRIM Berhad (Secretariat)  
Universiti Malaysia Terengganu  
Universiti Putra Malaysia

## **Foreword**

This Malaysian Standard was developed by the Technical Committee on Aquaculture under the authority of the Industry Standards Committee on Agriculture.

Major modifications in this revision are as follows:

- a) the title has been changed to “Good aquaculture practice (GAqP) - Aquaculture farm”;
- b) exclusion of mammalian species in the scope;
- c) inclusion of new terms and definitions on “antibiotic”, “animal welfare”, “aquatic organism”, “broodstock”, “competent authority”, “feed”, “hormone”, “post-harvest handling” and “sustainable”;
- d) inclusion of the requirement for the use of antibiotics;
- e) inclusion of the requirement for aquatic animal health and welfare management;
- f) inclusion of the requirement for chemical storage;
- g) inclusion of the requirement for pest and predator control; and
- h) requirements for trans-boundary, record keeping, auditing, workers safety, health and welfare; and social responsibility have been amended accordingly.

This Malaysian Standard cancels and replaces MS 1998:2007, *Good Aquaculture Practice (GAqP) - Aquaculture farm - General guidelines*.

Compliance with a Malaysian Standard does not of itself confer immunity from legal obligations.

## Good aquaculture practice (GAqP) - Aquaculture farm (First revision)

### 1 Scope

This Malaysian Standard prescribes a generic code of practice for aquaculture farm operators to promote Good Aquaculture Practice (GAqP) for sustainable industry that is environmentally sound, socially acceptable and economically viable to ensure quality produce that is safe for human consumption and/or other utilisation.

This standard does not apply to mammalian species.

### 2 Normative references

The following normative references are indispensable for the application of this standard. For dated references, only the edition cited applies. For undated references, the latest edition of the normative reference (including any amendments) applies.

*World Organisation for Animal Health (OIE) Aquatic Animal Health Code*

*Occupational Safety and Health Act 1994*

### 3 Terms and definitions

For the purposes of this standard, the following terms and definitions apply.

#### 3.1 animal welfare

How an animal is coping with the conditions in which it lives.

NOTE. An animal is in a good state of welfare if (as indicated by scientific evidence) it is healthy, comfortable, well nourished, safe, able to express innate behavior, and if it is not suffering from unpleasant states such as pain, fear and distress. Good animal welfare requires disease prevention and veterinary treatment, appropriate shelter, management, nutrition, humane handling and humane slaughter/killing. Animal welfare refers to the state of the animal; the treatment that an animal receives is covered by other terms such as animal care, animal husbandry, and humane treatment".

[OIE Terrestrial Animal Health Code]

#### 3.2 antibiotic

A substance produced by a micro-organism or any other product produced wholly or partially by chemical synthesis and which in low concentration inhibits the growth of or kills micro-organisms, and used for the purpose of growth stimulation and prevention of diseases.

#### 3.3 aquaculture

Farming of aquatic organism in which the whole or part of the aquatic organism life cycle can be intervened or manipulated to enhance production.

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### **3.4 aquaculture farm**

Any establishment for the production of aquatic organism.

EXAMPLE. Bottom, cage, hanging-net, pen, pond, pole or stick, tank, raft and rope cultures.

### **3.5 Aquaculture Industrial Zone (AIZ)**

An area earmarked for the development of aquaculture and its related activities.

### **3.6 aquatic organism**

Any animal or plant that lives in water for the whole of its life cycle except mammalian species.

### **3.7 broodstock**

A group of mature aquatic organisms used for breeding purposes.

### **3.8 competent authority**

Any person or organisation that has the legally delegated or invested authority, capacity and power to perform a designated function.

### **3.9 feed**

Any single or multiple material whether processed, semi-processed or raw, which is intended to be fed to aquatic organism.

### **3.10 feeding practice**

A specific feeding method applied to ensure a good performance of the cultured organisms.

### **3.11 hormone**

A chemical substance derived from an endocrine gland or through synthetic processing that has a specific effect on tissues.

### **3.12 post-harvest handling**

Stage of activities immediately after end of culture operation.

EXAMPLE. Cleaning, sorting, cooling and packing.

### **3.13 sustainable**

A holistic farming approach that is efficient in resource management and focuses on the interrelationship of social, economic and environmental processes. This approach ensures efficient production of safe and high quality aquaculture products.

## 4 Minimum requirements

### 4.1 Site selection

4.1.1 The site for aquaculture shall be approved by the competent authorities and should minimise conflicts of land and water use.

4.1.2 The siting, design and construction of farms should follow principles of good aquaculture practice. It should be suitable for species, culture system and where sources of pollution can be controlled or mitigated.

4.1.3 The area should be located in area where the risk of contamination is minimised. Farm operators are encouraged to select areas in the AIZ.

4.1.4 All sites should be operated so as not to cause adverse impacts on human health from the consumption of the farmed aquatic organism.

### 4.2 Construction

4.2.1 The farm design and layout shall be done in accordance with the requirements as recommended by the competent authorities.

4.2.2 The clearing of site shall consider conservation or preservation of natural habitat.

4.2.3 All materials used shall be environmentally friendly.

### 4.3 Culture practice

#### 4.3.1 Farm preparation

The fertilisers and chemicals used shall be in accordance with the aquaculture practice as advised by the competent authorities, where applicable.

#### 4.3.2 Seed

4.3.2.1 Farm operator should use healthy and/or quality seeds from reliable source and verified by competent authorities.

4.3.2.2 The source of broodstock for seed production and seed for culture shall minimise the transmission of pathogen into the growing stocks and potential human health hazards, i.e. use of hazard chemical and vaccination for production of seeds and to human health.

#### 4.3.3 Feed

4.3.3.1 The feed shall:

- a) free from prohibited antibiotics;
- b) free from banned substances;
- c) free from porcine and filthy source and/or its derivatives; and
- d) not contain unsafe levels of biological, chemical and physical contaminants and/or other adulterated substances.



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**4.3.3.2** The use of antibiotics, hormone and chemicals in feed with permitted level, where necessary shall be approved by the competent authorities.

**4.3.3.3** Where feed is used, aquaculture operations shall include procedure for avoiding feed contamination as in compliance with national regulations or international standards.

**4.3.3.4** The farm operator shall purchase commercial feed that has been registered to the competent authority and properly labeled in compliance with requirements of the competent authority.

**4.3.3.5** The feeding practice should follow the requirements and as recommended by the competent authorities and/or the feed manufacturers.

**4.3.3.6** Feed should be stored under clean, dry ventilated conditions within a room with a proper floor and walls (avoiding high humidity and direct sunlight). Bags containing feeds should be stored on proper pallets and in such a manner so as to facilitate good air circulation between individual bags, and should never be allowed to rest directly against floor or walls.

### **4.3.4 Chemical storage**

All chemical compounds shall be stored in a secure lockable store and in accordance with manufacturer instructions or as recommended by competent authority and, where appropriate, be physically separated. Compliance includes a visual assessment of the chemical store.

Manufacturer Product Specification and Material Safety Data Sheets (MSDS) shall be made available for all chemical compounds.

### **4.3.5 Water management**

**4.3.5.1** The quality of the water for the culture shall be maintained at suitable conditions to ensure good growth and health of the species cultured and safe for human consumption.

**4.3.5.2** The water quality shall be monitored and recorded throughout the culture period. The use of approved probiotics may be employed to improve the water quality.

**4.3.5.3** Effluent from the aquaculture farm shall not be discharged into the public or municipal water body without undergoing proper treatment in accordance with the current legislation.

### **4.3.6 Harvesting and post-harvest handling**

**4.3.6.1** Harvesting and post-harvest handling shall ensure the food safety, quality and the value of aquaculture produce.

**4.3.6.2** Produce shall be transported without undue delay.

**4.3.6.3** Minimising stress of the aquatic organism immediately prior to slaughter is necessary to prevent welfare problems and to maintain quality of the produce.

#### **4.3.7 Disease control**

**4.3.7.1** Cultured organisms shall be regularly monitored and recorded for early detection of health problems. On occurrence or an outbreak of any disease of any cultured organism, the farm operator shall immediately notify and seek advice from the competent authorities.

**4.3.7.2** The use of any prohibited antibiotics, chemicals and banned substances for disease treatment shall not be done. Farm operator shall only use registered veterinary drugs and chemicals. If necessary, treatment shall follow the prescription or as advised by the competent authority.

**4.3.7.3** Disposal of infected organisms shall be done in a sanitary manner to avoid cross-contamination.

**4.3.7.4** Farm operators are encouraged to provide physical bio-security measures (e.g., traps, fencing, bird nets, etc.) which are effective to prevent any disease outbreak.

**4.3.7.5** Sanitary facilities shall be provided that allows for disinfection at the entry or exit point of the aquaculture farm including the cleaning and sanitisation of the vehicles.

#### **4.3.8 Pest and predator control**

**4.3.8.1** Farm operator shall control the risk of pest and predator infestation in aquaculture farm. The location of all pest and predator control measures shall be identified on a layout plan.

**4.3.8.2** Monitoring records of identified risk locations and preventive measures shall be in place and available.

#### **4.4 Trans-boundary**

**4.4.1** Aquatic animal health management programmes and movement of aquatic animal should take place in accordance with the relevant provisions in the *OIE Aquatic Animal Health Code* to prevent introduction or transfer of diseases and infectious agents pathogenic to aquatic animal while avoiding unwarranted sanitary measures.

**4.4.2** Farm operator shall seek an approval from competent authority to import any alien species and genetically modified organism (GMO). All alien species and GMO shall be cultured under closed aquaculture systems.

**4.4.3** Disposal of alien species and GMO shall seek an approval from the competent authorities.

#### **4.5 Workers safety, health and welfare**

**4.5.1** Workers shall be treated responsibly and in accordance with national labour law and regulations and, where appropriate, relevant International Labour Organization (ILO) conventions.

**4.5.2** Workers shall not be discriminated on the basis of gender.

**4.5.3** Workers shall be provided with decent working conditions for both genders.

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**4.5.4** Child labour shall not be used in a manner inconsistent with national regulation or ILO conventions.

**4.5.5** Workers directly involved in production or farm level shall be in good health condition and receive basic training in hygiene requirements.

**4.5.6** Safe farm work conditions shall be ensured at all times in line with the *Occupational Safety and Health Act 1994* and ILO conventions to ensure safe and healthy working conditions.

**4.5.7** Workers shall be equipped with suitable personal protective equipment (PPE) appropriate to the danger posed to health and safety. PPE shall be cleaned after use and stored separately from contaminants.

**4.5.8** First aid boxes shall be available at permanent sites on the farm.

**4.5.9** Hazards shall be clearly identified by warning signs where appropriate.

**4.5.10** Accident and emergency procedures shall be made available with clear instruction to all workers and displayed appropriately.

**4.5.11** Farm operators shall provide basic amenities for on-site living in compliance with national regulations and local law.

### **4.6 Training**

Training shall be given to all workers on good aquaculture practices including aquatic animal health and welfare management.

### **4.7 Traceability**

The produce shall be traceable to the farm where it has been originally produced.

### **4.8 Record keeping**

**4.8.1** All records shall be maintained on the quantities and origin of inputs, e.g., record on workers, species, disease analysis, water quality, feeding practices, customers and etc.

**4.8.2** All records shall be kept up-to-date for a minimum of two years unless stipulated by any specific legislation. Record keeping system shall be established in which all the essential elements are captured. The records shall be accessible and audited.

### **4.9 Auditing**

**4.9.1** Auditing shall be carried out at least once a year for certified farm.

**4.9.2** Corrective actions shall be implemented and documented.

### **4.10 Social responsibilities**

**4.10.1** Farm operators shall take measures to minimise potential adverse impacts on the local community during all phases of farm operation.

**4.10.2** Farm operators shall demonstrate equal rights on public land and water use for local communities following the requirements of the competent authorities.

## **5 Legal requirements**

All activities and produce shall in other aspects comply with the requirements of the legislations currently in force in the country.

## **6 Compliance**

For produce deemed to conform to this standard, it shall comply with Clause 4 of this standard. This shall be verified through inspection when deemed necessary by the competent authority.

## **Bibliography**

- [1] *Fisheries Act 1985 (Act 317)*
- [2] *Feed Act 2009 (Act 698)*
- [3] *Food Act 1983 and Food Regulations 1985*
- [4] *Codex Alimentarius Commission, CAC/RCP 52-2003, Code of Practice for Fish and Fishery Products, Second edition*
- [5] *Global GAP, Integrated Farm Assurance, All Farm Base, Aquaculture Module, Version five*
- [6] *Guidelines on ASEAN Good Aquaculture Practices (ASEAN GAqP) for Food Fish, 2014*
- [7] *World Organisation for Animal Health (OIE) Terrestrial Animal Health Code*

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