

**BIO-GRO New Zealand Organic Standards**  
**Module 4.7 Aquaculture Production Standard**

**Version control:**

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This document replaces BIO-GRO New Zealand Organic Production Standard August 1998:1 Section G.

The reasons for change are:

- regular review required under IFOAM accreditation;
- organic production systems are continuously evolving; and
- rapid growth in interest in organics means the Standards need to be rearranged into a more user-friendly and auditable format.

This document may be altered at any time. It was current at the date in the header of each page of the document. It is recommended that anyone intending to use this document contact BIO-GRO or check the BIO-GRO website [www.bio-gro.co.nz](http://www.bio-gro.co.nz) to confirm that this is the current version.

BIO-GRO Standards  
Module 4.7 Aquaculture Production Standard

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## 1 Scope and purpose

This BIO-GRO Standard contains the production requirements and audit criteria for the certification of and licensing by BIO-GRO of aquaculturists to use the BIO-GRO trademark/logo.

This module is followed by all:

- producers of organic aquaculture products certified by BIO-GRO; and
- producers of organic aquaculture products licensed by BIO-GRO to use the BIO-GRO trademark/logo.

All aquaculture products bearing the BIO-GRO trademark are produced in accordance with this standard.

Information on BIO-GRO and the use of the BIO-GRO trademark/logo can be obtained from *Module 1 Introduction* and *Module 2.1 Certification System*. Information on the BIO-GRO requirements for processing can be obtained from *Module 4.4 Processing Standard* and information on the BIO-GRO requirements for distribution can be obtained from *Module 4.5 Distribution Standard*.

The audit checklists (available on request from BIO-GRO) may be used for self-audits in preparation for audits by BIO-GRO.

## 2 References

### 2.1 References used in this standard

This standard refers to the following documents. These documents are necessary for the complete and correct interpretation of this standard and should be read in conjunction with this standard:

- *Animal Products Act 1999*;
- *Animal Products (Ancillary and Transitional Provisions) Act 1999*;
- *Fisheries Act 1983*;
- *Fisheries Act 1996*; and
- *Resource Management Act 1991*.

### 2.2 Other resources

The following documents are useful resources:

- *Mussel Industry Code of Practice*; and
- *Ministry of Fisheries Shellfish Sanitation Standards*.

## 3 Definitions

The BIO-GRO definitions of terms can be found in the BIO-GRO Standards *Annex One Glossary of Terms*.

## 4 Aquaculture

### 4.1 Introduction

Aquaculture includes many forms of production in fresh, brackish and salt water. This module covers aquatic plants and fish grown in any form of enclosures such as ponds, tanks and cages, or in open sea aquaculture farms using ropes, frames, etc.

Wild, sedentary organisms in open collecting areas may be able to be certified as organic, refer to *Module 4.8 Standard for Wild and Natural Products, and Traditional Agriculture*.

This module does not cover organisms which are moving freely in open waters, and/or which are unable to be inspected according to general procedures for organic production.

### 4.2 Basic conditions

- a. Organic aquaculture must have:
  - i. high quality water entering the system;
  - ii. sound management practices;
  - iii. appropriate stocking rates;
  - iv. consideration of fish welfare; and
  - v. only inputs which are approved by BIO GRO.
- b. Water leaving the organic aquaculture system, or farm structures, must not adversely affect:
  - i. the environment;
  - ii. the natural ecology; or
  - iii. biological diversity.

### 4.3 Applications

Applications for BIO-GRO certification must:

- a. meet New Zealand's *Resource Management Act 1991* as a minimum requirement;
- b. supply a copy of a current Regional Council resource consent;
- c. provide recent results from environmental monitoring;
- d. describe all known point sources of pollution upstream, and from surrounding land; and
- e. include a management plan.

In addition applications for organic marine production units must include a chart indicating tidal flows and possible point sources of contaminants or pollutants.

BIO-GRO may require residue screen and specific testing for pesticides and/or heavy metals and/or other materials prohibited under the BIO-GRO Standards.

#### **4.4 Conversion**

- a. The conversion period allows time for the production system to flush out non-certified materials, and for the farm manager to implement the management plan supplied with the BIO-GRO application.
- b. The 12-month conversion period can commence once the conditions of organic production are being met and only after an audit has taken place.
- c. Part of the aquaculture unit may be converted and certified, as long as organically managed stock can be clearly defined and a designated area is set aside for organic production only. Partial certification is only permitted as a means of facilitating the conversion of the entire operation to BIO-GRO production, refer to *Module 2.1 Certification System Section 4.7*.

#### **4.5 Location of production units**

- a. Construction and operation of the production unit must not have a significant adverse effect on the surrounding aquatic or terrestrial ecosystems, the environment or local communities in accordance with the Resource Management Act.
- b. The organic aquaculture unit must be located at least 5 km downstream of any conventional aquaculture unit.

#### **4.6 Construction materials**

Construction materials and production equipment must not contain compounds that could detrimentally affect the environment or contaminate the certified product, e.g. paints, materials impregnated with synthetic/ chemical agents etc.

#### **4.7 Breeds and breeding**

- a. Breeds that are adapted to the local conditions must be chosen.
- b. Breeding goals must aim at obtaining good product quality, good growth and feed conversion.
- c. Natural breeding behaviour, settlement and hatching is desirable. However, production systems such as fish hatcheries are allowed.
- d. Wild stock collection must comply with the Fisheries Acts and Regulations.
- e. Triploid and genetically engineered breeds are not allowed.

## **5 Fish farming**

### **5.1 Water**

- a. Continuous addition of ample unpolluted water is essential in preventing stress and sickness in farmed fish and is a cornerstone of organic aquaculture.
- b. Environmental parameters such as temperature, dissolved oxygen, salinity and suspended solids must not fluctuate drastically within the system.

### **5.2 Natural behaviour**

- a. There must be adequate room in cages or ponds for the fish to exhibit natural behaviour, such as forming shoals.
- b. The size of the enclosure will vary according to the species and fish size. As a guide, salmon must not exceed a stocking density of 10 kg of fish per cubic metre measured to a depth of 2 m, and the smallest sea cage allowed is 100 m<sup>2</sup> with a minimum depth of 9 m.
- c. Adequate measures must be taken to prevent escapes of cultivated fish and to prevent infiltration of predators that may kill or damage them. The poisoning of predators is not permitted.
- d. Feed must be offered to fish in a way that allows natural feeding behaviour, with minimum loss to the environment.

### **5.3 Feed**

- a. Diets must be balanced according to the nutritional needs of the fish.
- b. Manufactured feed must contain a minimum of 95 percent wild fish and/or certified organic ingredients.
- c. At least 50 percent of the protein originating from marine wild fish must come from cut-off waste.
- d. Meal made from whole fish must come from sustainably managed fisheries.
- e. Waste from the species being fed must not be used in the feed for that species.
- f. The feed manufacturing process must comply with the BIO-GRO Standards.
- g. Documentation must be provided that fishmeal does not contain unacceptable levels of heavy metals, pesticide residues or other materials prohibited under the BIO-GRO Standards.
- h. Minerals and vitamins from natural origin may be used as feed supplements provided they are applied in their natural composition.
- i. Fodder preservatives originating from bacteria, fungi and plant-based products, such as enzymes, may be approved by BIO-GRO for use.

- j. Synthetic growth-regulating agents, antibiotics, synthetic antioxidants, synthetic appetite stimulants, pure amino acids, and synthetic colouring agents must not be added to the feed. The use of carophyl pink or carophyl red is not permitted.
- k. Allowable additives for colouring effects include yeast and algal-based products that have BIO-GRO-approval.

#### **5.4 Disease and veterinary drugs**

- a. Dead fish must be removed every day.
- b. If the behaviour of the fish becomes irregular, or if mortality rates exceed 0.5 percent per week, diagnostic tests must be made, water quality checked and the results recorded.
- c. Licensees must not allow diseased or severely infected fish to go untreated in order to maintain organic certification.
- d. BIO-GRO must be notified prior to any veterinary treatment of certified fish.
- e. If veterinary drugs are used, treated fish must be quarantined and must not be sold as BIO-GRO certified.
- f. Records of the name, quantity and date of treatment must be kept in the logbook for each production unit.
- g. The distance from the quarantine unit to the nearest unit containing organically approved fish must be a minimum of 75 m, or there must be a physical barrier between the units which hinders the flow of water between them.
- h. The use of malachite green or formalin is not permitted as fungal treatment of eggs.
- i. Iodine treatment of salmon eggs: Where this is a statutory requirement prior to shipment from another site this is a restricted practice until such time as an alternative can be found. Prior written approval must be obtained from BIO-GRO for the iodine treatment of eggs.

## 5.5 Handling

- a. Capture and handling stresses fish and can damage them.
- b. Fish must be handled as little as practical and in a way that minimises stress.
- c. The fish must be out of the water for no more than 30 seconds during handling.
- d. The use of chemical tranquilisers or high concentrations of CO<sub>2</sub> is not permitted.
- e. Any sorting or moving must be recorded in the logbook.

## 5.6 Slaughtering

- a. The slaughter technique must be approved by BIO-GRO.
- b. Fish must not be slaughtered in the pond or cage containing live fish.
- c. The process must be managed so as to avoid stress to the fish prior to slaughter and to avoid suffering during slaughter.

## 5.7 Logbook

- a. The farm manager must keep an operations logbook as the record of inputs and outputs for each production unit. It must record:
  - i. the number and source of fingerlings introduced to ponds/cages;
  - ii. the type, source (including batch number) and quantity of food used in each fish-raising unit;
  - iii. fish deaths and estimated mortality in each unit;
  - iv. the diagnosis for significant mortalities and any treatment administered;
  - v. the numbers of fish transferred between units or harvested;
  - vi. the data obtained from environmental monitoring undertaken by the manager or Regional Council, e.g. water temperature, oxygen content and pH.



## **6 Shellfish and crustacean farming**

### **6.1 Introduction**

- a. The general principles of organic fish farming apply to the farming of other species. These include:
  - i. ample clean water;
  - ii. adequate space;
  - iii. approved surrounding land uses;
  - iv. no prohibited medication or feed supplements; and
  - v. considerate handling.

### **6.2 Bio-toxins**

- a. Filter-feeding shellfish can concentrate pollutants, pathogens and algal toxins that may be present.
- b. Marine farms applying for certification must have a bio-toxin risk management plan approved by BIO-GRO. This must detail:
  - i. previous toxic blooms detected in the area;
  - ii. proposed water and/or product testing;
  - iii. the level of toxin at which harvesting would cease; and
  - iv. product withholding periods that will protect the consumer.
- c. Harvesting may need to be restricted after heavy rainfall as under certain conditions shellfish can accumulate levels of contaminants that are potential risk to consumers. The minimum standard is defined in the Ministry of Fisheries' *Shellfish Sanitation Standards*. These must be detailed in the application, along with a general description of land use in the surrounding catchment.

### **6.3 Feed**

Oyster and mussel farms rely on the natural productivity of the site to supply food for the stock.

#### **6.3.1 Feed gathering**

- a. Feed gathering from the marine or estuarine environment must be sustainably managed and have approval from the Ministry of Fisheries.
- b. Collection areas must be designated in the BIO-GRO application and may be subject to inspection.

#### **6.3.2 Growing**

Feed for paua, crayfish etc. may be grown with the assistance of BIO-GRO-approved fertilisers and artificial lighting.

#### **6.4 Residue testing**

BIO-GRO may require a residue screen and specific testing for pesticides and/or heavy metals and/or other materials prohibited under the BIO-GRO Standards on ingredients of aquaculture feed and/or other inputs prior to certification. Refer to BIO-GRO Standards *Annex Two: Residue Levels in Certified Products, Water, Soil and Composts*.

## **7 Processing aquacultural products**

### **7.1 Processing**

- a. The quality of fish and shellfish must be maintained by chilling as soon as practical after harvest and the temperature monitored and recorded during transportation and storage.
- b. The premises and handling of the product must comply with MAF requirements.
- c. Processing systems must ensure that certified products:
  - i. retain their identity;
  - ii. are clearly separated from uncertified products; and
  - iii. do not come into contact with prohibited materials.
- d. All contact surfaces must be washed down with potable water before processing commences.

### **7.2 Additives and processing aids**

- a. Additives and processing aids must only be used to:
  - i. maintain product quality and keeping ability; or
  - ii. enhance composition, consistency and appearance.
- b. Unrefined sea salt with no additives, and rock salt are permitted.
- c. There must be no possibility of deception of the consumer concerning the nature and quality of the food. Refer to *Module 4.4 Processing Standard*.

### **7.3 Smoking**

- a. Preserving products by smoking may be permitted depending on the materials and process used. Prior written approval must be obtained from BIO-GRO.