

# PACIFIC ORGANIC SEAFOOD ASSOCIATION

## STANDARDS

2004

The Pacific Organic Seafood Association (**POSA**) has drafted standards for the production of seafood. These standards are based on international<sup>1</sup> standards and have taken into account consultation with Certified Organic Associations of British Columbia (COABC).

These standards describe the management practices for farming finfish and shellfish that must be met and maintained in order for the product to be labelled as **certified organic**.

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<sup>1</sup> International Federation of Organic Agriculture Movements (IFOAM), COABC (BC), COG (Canada) KRAV (Sweden) & DEBIO (Norway), and NOSB (USA)

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# 1. GENERAL PRINCIPLES OF ORGANIC AQUACULTURE

**These principles are based on those of the International Federation of Organic Agriculture Movements (IFOAM) and other organic standard setting organizations, which have set standards for organic aquaculture and principles of organic agriculture.**

## **Organic Food Production Objectives**

- a) The production of wholesome food products of prime quality, free from artificial ingredients and providing a significant contribution to a healthy diet.
- b) Production methods that minimize the use of external resources.
- c) The prohibition of synthetic input factors other than those specifically authorized by the POSA Materials List.

## **Animal Welfare Objectives**

Promotion of the health and welfare of the cultured organisms by minimising stress, reducing the incidence of disease, and nurturing the vitality of the organisms through meeting their nutritional, physiological and behavioural needs.

## **Environmental Objectives**

The overall objective for the production system must be consideration for the environment and the thriving and health of both wild and cultured organisms. The production system must be managed in such a way that the environmental integrity of the surrounding water and land areas is preserved through:

- a) Having benign effects on local biological processes
- b) Preventing escape and predation of cultured organisms
- c) Maintaining healthy water conditions
- d) Using sustainable foodstuff
- e) Managing the production so that infectious organisms, parasites, and input factors have minimal impacts on wild organisms in the surrounding environment
- f) Providing for polyculture in the production system in order to close nutrient cycles where possible.

## **Social Objectives**

- a) The encouragement of the use of local resources and services

- b) A safe, healthy and sustainable working environment for employees
- c) The promotion of organic aquaculture to meet consumer needs and to foster sustainable aquaculture

**Preservation of Wild Aquatic Flora and Fauna**

- a) Production systems will be set up to minimize the effects on local flora and fauna, and
- b) Highly sensitive natural habitat should be avoided.

## 1.1 SETTING UP THE PRODUCTION SYSTEM

### 1.1.1 Documentation

#### 1.1.1.1 Required

- 1) There must be a management plan and production description available, detailing the entire production system and how each of the requirements in the standards is complied with for the production unit.
- 2) A production manager must keep an operating record and must always be able to present a documented, systematic overview of the production system to the certifying body on request.
- 3) The following information must be recorded at intervals determined by the certifying body, as applicable, for every production unit:
  - Stocking of cultured organisms: The number of organisms, species, origin, time when put out and average weight (live weight)
  - Volume per production unit
  - The number of stock and total estimated weight in kilograms
  - Stock density
  - Removed quantity of dead/dying stock (number and average weight)
  - Production result (harvest weight) specifying as the number of stock, and the total weight in kilograms
  - Usage of cleaning agents and disinfectants (chemical type, product name, quantity and usage period) as well as all major cleaning events
  - All inputs, as they are received and used.

### 1.1.2 Environment/Water Quality

#### 1.1.2.1 Required

- 1) Water must come from a source with minimal risk of pollution.
- 2) Producers must maintain healthy water conditions to support the physiological and ethological needs of the organisms so they are able to thrive.
- 3) The unit must not be sited in the vicinity of, or downstream of, a significant source of pollution.
- 4) The unit shall be sited in an area with good water movement, and/or so that sediment build-up underneath the unit meets or exceeds government standards. Depending on the type of production, POSA may require collection and analysis of sediment in and around the unit.

- 5) Feed wastage or faeces, which are collected, shall if possible be used as fertiliser in organic agriculture.
- 6) Producers must maintain production systems, whether self-contained or located in open water, in a manner that does not significantly diminish the biodiversity of the environs.
- 7) All materials and equipment used in production must meet the requirements of the POSA Materials Lists or be specifically authorized for use by the POSA.
- 8) Growth of fouling organisms on production equipment must only be removed using environmentally sustainable methods.

### **1.1.3 Conversion Period**

#### **1.1.3.1 Required**

- 1) Two inspections are required before an enterprise may receive a certificate. The duration of time between inspections must be more than one year and less than 2 years.
- 2) Once the transition growing cycle has been completed on a single unit, subsequent growing cycles (in the same, or different units) may be developed as certified organic, provided an application is made, all standards are adhered to, and records are kept for inspection.

### **1.1.4 Parallel Production**

#### **1.1.4.1 Required**

- 1) In open water systems, conventional and organic production units must be physically separated by a minimum of 25m and be subject to the approval of the certifying body.
- 2) For land-based installations, there must be physical barriers such that water cannot circulate between organically certified and conventional units.
- 3) Areas for storing all input factors for the different production methods must be kept well separated.
- 4) Feed and input factors for organically certified production must be clearly marked.
- 5) Adequate documentation must be available for inspection for both production systems.

### **1.1.5 Support of Local Community**

#### **1.1.5.1 Required**

- 1) Farmers with sites located in a First Nation's traditional territory must be able to demonstrate to the certification body that meaningful consultation has taken place and is ongoing.

## **1.2 BASIC CONDITIONS**

#### **1.2.1 Required**

- 1) Appropriate and identifiable measures to prevent non-culture organisms from preying on culture organisms.

#### **1.2.2 Prohibited**

- 1) Excessive and/or improper use of water or other resources.

## **1.3 BASIC MATERIAL AND STOCK ORIGIN/BREEDING**

#### **1.3.1 Required**

- 1) Brought-in aquatic organisms should come from organic sources.
- 2) The standard setting organization will establish standards for brought-in conventional aquatic organisms.
- 3) Producers must be able to demonstrate that the breeding program ensures genetic diversity in the production stock.

#### **1.3.2 Regulated**

- 1) If organic organisms are commercially unavailable then the certifying body may allow the use of stock from non-organic hatcheries providing at least 90% of the biomass gain occurs under organic management.
- 2) Triploid stocks which have been produced by methods acceptable to POSA.
- 3) Monosex stocks which have been produced by methods acceptable to POSA.

#### **1.3.3 Prohibited**

- 1) Transgenic and genetically modified culture organisms.

## 1.4 ANIMAL HEALTH AND WELFARE

### 1.4.1 Required

- 1) Management must be based on the “five freedoms.”
  - Freedom from malnutrition
  - Freedom from thermal and physical discomfort
  - Freedom from injury and disease
  - Freedom from fear and distress
  - Freedom from unnecessary restrictions of behaviour
- 2) Production must focus on prophylactic health work. There must be hygienic routines and routine examinations must be carried out to detect nascent diseases and production disturbances. The cause and outbreaks of disease or infection must be identified, and management practices implemented to prevent the causative events and future outbreaks.
- 3) When treatment is necessary, the use of natural methods and medicines must be first choice. Disease treatment must be carried out so that it minimizes harmful effects on the environment and the animals' health.
- 4) Conventional veterinary drugs and chemicals may only be used if no other justifiable alternative is available, and/or if the use of such chemicals is required according to national laws and standards.
- 5) In any production system where use of antibiotics may be necessary, treated stock must be withdrawn from the certified organic production stream and may only be marketed as conventional product until the withholding period is at least twice that recommended by the manufacturer or twice that prescribed by a licensed Veterinarian.<sup>2</sup>

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<sup>2</sup> **IFOAM** (International Federation of Organic Agriculture Movements)

5.7.2. Where conventional veterinary medicines are used, the withholding period shall be at least double the legal period.

**EU Regulation 1804/99 5.7** (European Union)

5.7. The withdrawal period between the last administration of an allopathic veterinary medicinal product to an animal under normal conditions of use, and the production of organically produced foodstuffs from such animals, is to be twice the legal withdrawal period or, in a case in which this period is not specified, 48 hours

**CAN/CGB – 32.310-99** (Canada)

7.4.3 In cases where disease and health problems require treatment, the use of biological, cultural and physical treatments and/or practices are recommended. If no alternative treatment or management practice exists, substances for veterinary use, as described in appendix B, section B2, are permitted. If a veterinary drug treatment is used, the withdrawal period shall be at least double the permitted federal withdrawal period allowed for veterinary drugs. The withholding of necessary veterinary treatments in order to maintain the organic status of the affected animal is not permitted.

7.4.4 No products from livestock treated with synthetic antibiotics, parasitides, or other synthetic veterinary compounds not permitted in this standard, with the exception of vaccines, shall be labeled or marketed as certified organic, in accordance with this standard, until an interval of time that is at least double the permitted federal withdrawal period allowed for such veterinary compounds has been exceeded for the treated animal.

**KRAV (Sweden)**

5.4.10

For treatment with antibiotics and chemotherapeutics— Double the withdrawal period laid down by the Swedish National Food Administration for the respective substance, however always at least 6 months

**Naturland**

II 5.51

- 6) Emergency harvest must be considered as an alternative to drug treatment.
- 7) Vaccinations are permitted to control pathogens known to exist in the region, or if mandatory under applicable legislation.
- 8) For production of species where active health management is the norm, current and accurate disease management records must be kept. The records must include:
  - Identification of the infected and infecting organisms.
  - Details of treatment and duration, including application rate, method of application and frequency of treatment.
  - Brand name of drugs used and their active ingredients.

#### 1.4.2 Prohibited

- 1) Routine prophylactic treatment with drugs or chemical agents.
- 2) Drugs and additives in feed and water to artificially promote growth.

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Naturland Standards for Organic Aquaculture

Use of conventional medicine is only permitted in vertebrates and after detailed diagnosis and remedial prescription by a veterinarian. In this case, at least twice the legally prescribed waiting period must be observed.

**Codex Alimentarius GL 32 – 1999, Rev. 1 – 2001)**

APPENDIX 1 B.22.c chemical allopathic veterinary drugs or antibiotics may be used under the responsibility of a veterinarian; withholding periods should be the double of that required by legislation with, in any case, a minimum of 48 hours

**Bio Suisse Standards 2001**

3.1.11 Injured or sick animals must be treated. Natural remedies and healing methods have first priority, if experience shows that they have a therapeutic effect on the respective animal species or the disease that is to be treated. Chemical-synthetic allopathic treatments may be carried out on the veterinarian's prescription, if the disease or injury cannot be efficiently treated with alternative methods. The treatment must be recorded indelibly in the stable book.

**Withdrawal periods**

The withdrawal period between the last administering of a chemical-synthetic allopathic veterinary medicine and the marketing of foodstuff from such an animal amounts principally to the double of the legally stipulated time indicated on the package. Excepted are drugs for the draining of cows with udder problems. Before the use of draining agents, a bacteriological analysis of the milk must be carried out.

**NOP (US) G 205.601 I (9) (10)**

(9) Streptomycin, for fire blight control in apples and pears only

(10) Tetracycline (oxytetracycline calcium complex), for fire blight control only

**Bio Gro 4.7.3 f iii**

Any animal treated with an interim remedy will lose certification immediately. This loss of certification will extend after the last treatment for double the meat withholding period of the remedy, followed by a further 12 months

**Bio Gro 5.4**

If veterinary drugs are used, treated fish must be quarantined and must not be sold as Bio-Gro certified.

**NASAA 29.6.4**

In the event that an illness requires treatment using a veterinary medicine, and no other alternative is available, then the treatment should be administered without delay. That individual pig must be identified and segregated in a quarantine area for 3 weeks or 3 times the withholding period, whichever is longer, and may not ever be sold as certified.

**NASAA 30.4.3**

In the event that medical treatments are necessary, those individuals or schools must be placed in separate ponds or in cages separated by at least 100 metres and in as downstream location as possible and may not be sold as organic.

**BFA5.1.3.**

The use of prohibited allopathic veterinary treatments (such as drugs and antibiotics) or other treatments not listed or allowed under this Standard shall require prior written veterinary advice and shall lead to de-certification of stock, as listed in table 5a. Use of such substances shall require a quarantine period for such identified stock of three times the legal withholding period of the substance in question. Quarantine shall occur separate from certified stock and other certified areas as specified elsewhere in this Standard.

- 3) Withholding appropriate disease treatment in order to maintain organic status of the stock. The standard setting organization will establish guidelines for when treatment and/or slaughter would be required.

## 1.5 NUTRITION AND FEEDING

### 1.5.1 Required<sup>3</sup>

- 1) All feed ingredients must be derived from certified organic ingredients, sustainable wild feed resources (Code of Conduct for Responsible Fisheries – FAO 1995), or other ingredients approved by the POSA. When certified organic components or wild marine feed resources are not available, the certification body may allow a maximum 5% of the feed (by dry weight) to be of conventional origin.
- 2) The manufacturing premises and feed formulation must be inspected and certified as conforming to these standards.
- 3) Feed must only be offered in a way that meets the nutritional requirements of the organism and minimizes loss of feed to the environment.

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#### <sup>3</sup> IFOAM

**5.10.3** Operators who bring in feed that contain aquatic animal protein in a diet shall use only by-products not suitable for human consumption. Operators may use a limited amount of aquatic animal protein fit for human consumption on an emergency basis. Such protein shall not exceed 50% of the fish diet.

#### **KRAV**

7.5.1.1 Feed for aquaculture organisms shall basically consist of 100 percent KRAV certified feed and/or feed which is approved for use in KRAV certified production originating in wild aquatic stock. If such approved feed is not available, up to 5 percent of the feed (dry weight) can be of non-KRAV certified origin.

7.5.1.2 If a certified organic feed ingredient is available, but cannot be used in a justifiable way with regard to resources and/or with unsatisfactory quality, an exemption can be made for use of an equivalent ingredient of non-KRAV certified organic origin for a limited period.

7.5.1.3 Feedstuffs from wild fish can be used in KRAV certified production on the following conditions:

- Wild fish shall come from sustainable stock and shall be environmentally certified by a certification body approved by KRAV

Or

- Where feedstuffs from an environmentally certified wild aquatic stock are not available or only constitute a proportion of the feed mix, at least 50 percent of the aquatic protein in the remaining proportion shall come from by-products. The remaining part shall consist of aquatic feedstuffs from species that are not normally used for human consumption.

#### **BIOSUISSE**

3.11.5 For salmonides and other carnivorous fish species, the addition of fish meal and fish oil is allowed. It has to be produced either from residues of edible fish processing or come from provably sustainable fishing.

#### **DEBIO**

7.1.3 Raw materials from wild fish can be used in organic production under the following conditions:

- Wild fish shall come from sustainable stocks and shall be certified as such by a certification body accepted by Debio.

Or:

Where raw materials from sustainable fisheries are not available or only constitutes a proportion of the feed, at least 50 percent of the aquatic protein in the remaining proportion shall come from by-products. The rest shall then consist of aquatic raw materials from species that normally are not used for human consumption

#### **NATURLAND**

8.5. If feed ingredients of animal origin (particularly fish meal/oil) have to be used for the culture of carnivorous species with higher protein requirements, the following basic principles shall be respected:

- The percentage of animal components in feed shall, as far as possible, be decreased or replaced by vegetable products. Provisional maximum values are set in Part III (Supplementary
- Regulations for specific farming systems and animal species)
- Feed shall not be obtained from conventionally reared terrestrial animals (mammals, birds)
- In order to work towards a responsible utilization of wild fish stocks, special standard requirements are set on the origin of fish meal/oil (see Appendix 1 a) feedstuffs from species that are not normally used for human consumption.

- 4) Coupling feed production with nutrient cycling through polyculture is strongly encouraged once the regulations allow for such activities. Note: In Canada it is currently illegal to participate in polyculture.

## 1.6 TRANSPORTATION

### 1.6.1 Required

- 1) Transportation must not cause avoidable stress or injury to the animals.
- 2) Transportation equipment and/or shipping materials must be selected with respect to environmental considerations and must not contaminate the product.
- 3) Chemically synthesized tranquilizers or stimulants must not be given to the animals prior to or during transport.

## 1.7 HARVEST AND PROCESSING

### 1.7.1 Required

- 1) Harvest processes must minimize stress and suffering of the organisms. The handling and harvest of animals must be humane and directed at maximizing the quality of the product without synthetic additives.

## 1.8 LABELLING

### 1.8.1 Required

- 1) All products sold must be clearly labelled as “Certified Organic.”

## 1.9 NOISE, LIGHT AND ODOUR POLLUTION

### 1.9.1 Required

- 1) Producers must make all reasonable efforts to minimize noise, light and odour pollution.

## **2. STANDARDS FOR FINFISH PRODUCTION**

### **2.1 RECORD KEEPING**

#### **2.1.1 Required**

- 1) In addition to the requirements in section 1, information about the following conditions must be recorded each month for the organically certified unit:
  - The stock's health status. In the event of disease, a diagnosis must be specified, in addition to the person who made the diagnosis, treatment implemented or treatment method, withdrawal periods for any treatments administered and the method of disposal of dead stock.
  - The production manager must keep a monthly record of the feed type (brand/supplier) and quantity fed.

### **2.2 ESCAPE PREVENTION**

#### **2.2.1 Required**

- 1) The production system must focus on preventing escape, in respect of both technical equipment and internal control.
- 2) The production manager must have contingency plans for all units used as to how any escapes can be limited and how escapees can be recaptured. The contingency plan must also cover governing principles for moving cages and for handling fish during sorting/loading/unloading. Any escape events must immediately be reported to the certifying agency as well as the appropriate government authorities. Evidence of gross negligence leading to escape events will be grounds for decertification.
- 3) Systems using surface water intakes must have devices in place to prevent entrainment of wild or feral fish.

#### **2.2.2 Prohibited**

- 1) The purposeful release of cultured fish from any unit into the aquatic environment is prohibited, unless specifically approved by the certifying body and appropriate government agency.

### **2.3 ENVIRONMENT/WATER QUALITY**

#### **2.3.1 Water Quality Parameters**

##### **2.3.1.1 Required**

- 1) The following minimum water quality and welfare parameters are the minimum or maximum permissible and should be considered within the context of the whole operating system.

**For Freshwater:**

Subject to changes in pH and temperature.

- Dissolved oxygen – minimum of 6 mg/litre or 60% percent air-saturated value, 90% of the time or, for through flow systems, minimum 60% oxygen saturation at the outflow
- Dissolved carbon dioxide – maximum of 20 mg/litre subject to pH
- Ammonia nitrogen – maximum of 0.6 mg/litre in culture system at pH 7 (adjustable depending on pH)
- pH – between 5.2 and 9
- Flow rate must be adequate to supply the fish with sufficient oxygen and to remove wastes
- Water temperature – between 0° C and 18° C.

**For Saltwater:**

- Dissolved oxygen – minimum of 3.5 mg/litre or 50 per cent air-saturated value, 90 percent of the time
- pH – between 7 and 9 - not measured in open systems.

- 2) All units must have a container or other device for satisfactory storage of dead aquatic animals. The capacity must be dimensioned for the operation's production and cleaning routines. Dead or sick fish waste must be handled so as to minimize the risk of spread of infection. This means that dead or dying fish must be picked from the production unit routinely. Fish not destined for human consumption must be disposed of in a manner approved by the certifying body.

## 2.4 BASIC MATERIAL AND STOCK ORIGIN/BREEDING

### 2.4.1 Required

- 1) Eggs must be obtained from indigenous brood stock raised in organic conditions or from indigenous wild stock.
- 2) The origin of the breeding fish must be recorded.

### 2.4.2 Allowed

- 1) During brood stock handling the following are permitted:
  - salt water addition
  - anesthetic may be used for handling of brood stock

- temperature or photoperiod manipulation.

#### **2.4.3 Regulated**

- use of antibiotics in brood stock prior to stripping.

#### **2.4.4 Prohibited**

1) During brood stock handling the following are prohibited:

- hormonally induced spawning.

2) The culture of exotic salmon species.

### **2.5 EGG HANDLING**

#### **2.5.1 Allowed**

1) The following are permitted adjuncts to egg handling:

- salt water
- surface disinfection with POSA approved products
- UV or ozone treatment of water.

### **2.6 FRY REARING**

#### **2.6.1 Required**

- 1) Fry rearing conditions must be consistent with the nutritional and physiological requirements of the species being reared
- 2) Fry are considered unsuitable for grow-out or are diseased must be disposed of in a humane manner.

#### **2.6.2 Allowed**

1) The following are permitted for fry rearing:

- addition of oxygen, subject to the approval of the certifying body
- non-GMO vaccines for diseases known to exist in the region and vaccines required by regulation
- POSA approved surface disinfectants and non-absorbable anti-parasiticides
- saltwater
- approved anesthesia

- heating of the water
- flow-through and recirculation systems.

### 2.6.3 Prohibited

1) The following are prohibited for fry rearing:

- growth hormones
- non-approved anesthetics
- antibiotics.

## 2.7 MUTILATION

### 2.7.1 Prohibited

1) Aquatic animals must not be subject to any kind of mutilation. The certification body may allow established stock identification methods where appropriate.

## 2.8 STOCK DENSITY

### 2.8.1 Required <sup>4</sup>

1) When adjusting the stock density, consideration must be given to the following:

- The fish must have a low aggression level and low frequency of fin biting

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#### <sup>4</sup> KRAV

7.7.5.1 When adjusting the stock density, consideration must be given to:

- The fish must have a low aggression level and low frequency of fin biting
- That the fish can form shoals
- The oxygen content in the water (see standard 7.7.2.1)

The size of the production unit in an open installation shall for the last 50 percent of the biomass increase be at least:

- 100 m<sup>2</sup> and/or 500 m<sup>3</sup> for salmon
- 50 m<sup>2</sup> and/or 250 m<sup>3</sup> for rainbow trout, arctic char and brown trout

#### Naturland 12/2002

III 4.4.2. Stocking density in net cages shall not exceed 10 kg fish/m<sup>3</sup>, based on the anticipated harvest weight. In no case the animals shall display any injuries (e.g. of the fins) indicating too high stocking densities.

#### IFOAM Basic Standard August 2002 10.3.1.

The standard-setting organization shall set standards that take into account the physiological and behavioral needs of organisms. This shall include provisions regarding:

- sustainable production
- non-stressful stocking density
- water quality
- protection from extremes of sunlight and shade and sudden temperature changes.

#### Bio Suisse Art. 3.11.1 ff

2.2.2.b Max. stock density: 20 kg/m<sup>3</sup>. In running water ponds the stock density may be increased up to max. 30kg/m<sup>3</sup>, if max. 100kg fish are kept per l/sec of the inlet

#### OC/PRO IS 350/150

7.4.2 All of the densities for organic production of farmed animals greatly exceed their "natural" densities. i.e. cattle at 100kg/m<sup>2</sup>

- Size distribution of fish must not compromise animal welfare or lead to detrimental, hierarchical behaviour.
  - The fish must be able to form schools.
- 2) The maximum density acceptable for organic growout in open, saltwater systems will not exceed 10 kg per cubic meter. The default density for closed-containment systems is 20 kg/m<sup>3</sup> but higher densities may be permissible subject to the approval of the certifying body. Hatchery rearing density of salmonids must not exceed 20 kg/m<sup>3</sup>.
  - 3) Density requirements are quite variable depending on species and water quality. The certifying body may establish a unique density for a facility provided the physiological and behavioural requirements of the fish are met.

## 2.9 PHOTOPERIOD MANIPULATION

### 2.9.1 Allowed

- 1) Prolonged light periods are allowed up to the day length naturally encountered by the species being reared.

## 2.10 NUTRITION AND FEEDING

### 2.10.1 Raw Materials

#### 2.10.1.1 Required

- 1) Aquaculture feeds must contain 100% certified organic raw materials or POSA approved wild feed resources.

#### 2.10.1.2 Allowed

- 1) Other permitted ingredients:
  - Algae, crab meal and other aquatic by-products, if they come from a fishery approved by POSA
  - The certifying body must approve additional materials added to the feed.
- 2) Non-aquatic animal meal protein sources may be used but must be of certified organic origin.

#### 2.10.1.3 Regulated

- 1) Foodstuffs from wild fish can be used in certified organic production on the following conditions: At least one half of the feed ingredients of aquatic origin must be derived from the by-products of wild caught fish for human consumption. Preference must be given to local materials. Non-local by-

products and/or other marine source ingredients may be used with the approval of the certifying body when sufficient quantities and/or quality of local by-products are unavailable.

- 2) The certifying body may from time to time require testing of inputs for contamination.
- 3) The certifying agency may give dispensation for the use of an ingredient of conventional origin for a time-limited period if a certified organic feed ingredient is commercially unavailable.

#### **2.10.1.4 Prohibited**

- 1) Feeds containing more than 28% lipid.
- 2) Feedstuff derived by solvent extraction.

#### **2.10.2 Supplements**

##### **2.10.2.1 Regulated**

- 1) In order to meet the nutritional needs of the stock, mineral, vitamin, and carotenoid supplementation may be included in the diet:

Vitamins – A naturally sourced commercial vitamin pack comprising vitamins required as part of the diet to maintain optimum stock condition.

Minerals – Trace minerals as required for optimum stock health.

Pigments – Astaxanthin/canthaxanthin are naturally occurring substances that are responsible for important immune functions and health as well as the natural colouration of salmonids. These pigments may be sourced from non-GMO *Hematococcus*, *Phaffia*, or from shrimp/krill/crab by-product or; if sufficient amounts of pigment are not available from these sources; or if pigments from these sources do not function adequately; then pigments from synthetic sources, which are identical to those found in nature may be used. The certifying agency will be responsible for listing the carotenoids that may be added to the diet.

- 2) Nutrients must be obtained from a natural source or a naturally equivalent source. When minerals and vitamins are found both in concentrated/ synthetic form and natural form, additives in a natural form must be used when this is possible.

##### **2.10.2.2 Prohibited**

- 1) The following feed additives are not permitted:
  - Growth promoters and stimulants
  - Appetite stimulants

- Urea
- Antibiotics in feed to promote growth in production stock
- Additives consisting of GMOs.

### **2.10.3 Preservatives**

#### **2.10.3.1 Allowed**

1) The following feed preservatives may be used, if approved by the POSA:

- Bacteria, fungi and enzymes
- Natural by-products from the food industry
- Plant-based products
- Other natural preservatives.

#### **2.10.3.2 Regulated**

1) Fishmeal and oil, which is highly unsaturated, requires a stabilizer to prevent oxidation and rancidity for even short-term storage. Naturally derived antioxidants that provide the necessary duration of protection are not currently available for use in this process, and, as a result, currently available fishmeal and fish oil is stabilized with synthetically derived antioxidants. POSA encourages the development of natural antioxidants for this purpose. For the present, however, fishmeal and fish oil stabilized with ethoxyquin will be provisionally authorized by POSA.

#### **2.10.3.3 Prohibited**

1) Synthetic antioxidant preservatives, excluding ethoxyquin where specifically allowed.

## **2.11 FARM SITING FOR NET-PEN OPERATIONS**

### **2.11.1 Required**

- 1) Farms must be sited away from known sources of water pollution
- 2) Distance from conventional production units must be the greater of 25 m.

## **2.12 TRANSPORTATION**

### **2.12.1 Required**

1) Live fish transportation must be minimized.

- 2) Live fish must be provided with adequate oxygen during transport. The maximum transport density is 1 kg of fish per 8 litres of water. Water exchange with water of the same temperature must be carried out as appropriate to maintain water quality.

#### **2.12.2 Prohibited**

- 1) The addition of tranquilizers to the water is prohibited.

### **2.13 HARVESTING**

#### **2.13.1 Required**

- 1) Fish must not be fasted in connection with harvest for more than 7 calendar days or 80 degree-days.
- 2) Fish must be killed by a technique acceptable to POSA.
- 3) All fish that are stunned must be bled immediately.
- 4) Harvesting and subsequent handling of organically certified and conventional fish must be clearly separated in time and/or space in order to completely avoid commingling.

#### **2.13.2 Prohibited**

- 1) Non-approved anaesthesia
- 2) Slaughter by suffocation.

### **2.14 PROCESSING**

#### **2.14.1 Required**

- 1) All equipment must be kept clean and when surface disinfectants are used, equipment must be flushed thoroughly with fresh water prior to contact with the fish. Except where ozonated water is utilized as a surface disinfectant.
- 2) All trimmings must be brought to adequate reuse, such as through composting or as raw material for feed or fertilizer.
- 3) Value-added processing must use materials and procedures approved by POSA.

### **3. STANDARDS FOR SHELLFISH PRODUCTION**

The following additional standards must be adhered to, as well as applicable parts of Section 1 in their entirety, for the certified organic production of Pacific oysters and Manilla clams.

#### **3.1 ENVIRONMENT/WATER QUALITY**

##### **3.1.1 Required**

- 1) Water quality must be monitored according to a schedule determined by the certifying body and the results must be documented continuously.

#### **3.2 BASIC MATERIAL AND STOCK ORIGIN/BREEDING**

##### **3.2.1 Required**

- 1) Larvae or spat from certified organic sources.

##### **3.2.2 Regulated**

- 1) The use of larvae or spat from conventional sources is allowed if certified organic material is commercially unavailable. If larvae or spat originate from conventional sources than the product may be marketed as organic only if it has achieved 99% of its biomass gain under organic management.
- 2) The collection of wild larvae and spat from federally designated shellfish reserves (e.g. Pendrell Sound and Pipestem Inlet).

##### **3.2.3 Prohibited**

- 1) Induction of triploidy

#### **3.3 SETTING LARVAE**

##### **3.3.1 Prohibited**

- 1) The use of epinephrine to expedite setting.

#### **3.4 COLLECTION OF WILD SPAT**

##### **3.4.1 Required**

- 1) All equipment temporarily placed in a shellfish reserve must be adequately identified, of orderly appearance, and securely anchored.
- 2) Such equipment must be removed from the reserves between December 1st and June 1st.

- 3) Producers must keep the reserves and surrounding areas clean.
- 4) Setting equipment must be used only during normal working hours where practical.
- 5) Intertidal cultch must be adequately spaced and/or elevated to ensure that habitat is not smothered or otherwise damaged.
- 6) Intertidal shell storage piles must be less than 2 m in height, appropriately marked, and maintained with concern for appearance.
- 7) On conclusion of operations, all materials and equipment must be removed.

### 3.5 CULTCH (setting substrate)

#### 3.5.1 Allowed

- 1) The following materials are allowed as setting substrate:
  - shellfish shell
  - food grade plastic
  - cement
  - French tubes made of allowable material
- 2) Clutch disinfection, providing the materials used correspond to the POSA Allowable Materials List.

#### 3.5.2 Regulated

- 1) PVC French tubes currently in use may be used as setting substrate, but not replaced.

#### 3.5.3 Prohibited

- 1) The following materials are prohibited as setting substrate:
  - tires
  - plastics that are not of food grade quality
  - plastics that have previously contained toxic or harmful materials
  - new PVC French tubes

### 3.6 PREDATOR CONTROL

#### 3.6.1 Required

- 1) Any modification of the tenure substrate (e.g. removal of rock or gravelling) must follow a management plan, approved by the certifying body, that demonstrably minimizes habitat impacts.
- 2) Predator exclusion devices (e.g. predator netting on clam beaches, vertical fencing, etc.) must be secured at all times to ensure they do not present undue risk of entanglement or injury to wildlife.
- 3) All predator control practices must target specific animals, with minimal impact on fish and wildlife habitat.
- 4) Only POSA authorized pest control products must be employed.

### **3.6.2 Allowed**

- 1) The following materials and methods are allowed in pest control:
  - a) Mechanical controls
    - physical barriers (e.g. clam netting, vertical predator fences, traps, and natural bait as attractant to traps)
  - b) Biological controls
    - manual removal
    - release of natural predators (e.g. sea urchins to eat mussel threads of mussels and control seaweed growth)
    - creation of environments fostering natural predators
    - brine dips
    - freshwater dips

### **3.6.3 Prohibited**

- 1) Destruction of fish or fish habitat.
- 2) Killing, capturing, injuring or otherwise disturbing migratory birds and their nests.
- 3) The following materials and methods are prohibited in pest control:
  - fumigants
  - synthetic pesticides, petroleum distillates, and solvents
  - traps containing prohibited materials
  - poison, natural or otherwise

## **3.7 WASTE MANAGEMENT**

### **3.7.1 Required**

- 1) Only products which can be recycled or have a long life span must be used in the production system.
- 2) All wastes produced by an operation must be collected and disposed of properly. Shells and non-edible wastes must be disposed of in such a manner as to not attract vermin or insects or otherwise increase risks of food contamination.
- 3) All Styrofoam used for flotation must be wrapped or treated with POSA approved materials to prevent dispersion into the environment.

### 3.8 SHELLFISH DENSITY

#### 3.8.1 Required

- 1) Density levels must reflect due considerations of the optimal health and welfare of the cultured organisms.
- 2) Density levels must not exceed the sustainable yield of the ecosystem in which the operation is located. This must take into account the production of other shellfish tenures in the area. The certifying body may require documentation of local carrying capacity.

### 3.9 HARVEST

#### 3.9.1 Required

- 1) Producers must only harvest oysters and clams for sale as organic product within the boundaries of their production site.
- 2) Harvest activities and their impacts must be confined to the tenure area.

### 3.10 ACCESS, PRIVATE PROPERTY AND RIPARIAN RIGHTS

#### 3.10.1 Required

- 1) Farm sites must be well marked and posted to provide public information and direction.
- 2) Producers must provide clearly marked public access through or around shellfish tenures.

## APPENDIX 1 – Materials List

(Adapted from the COABC materials list)

### Classification

Production materials are classified according to the following uses and applications:

- LF Feed, feed additives, and feed supplements
- LH Health Care products
- LHE External Parasiticides and pesticides
- LPA Production aids
- Feed for organic animals must meet POSA Certified Organic Standard. Crops grown for organic feed must meet certified organic production standards. The components of organic feed must be organically produced and handled.  
*Please refer to the processing section for additional information for materials that may be used in processing organic feed.*
- Feed additives are substances used to fulfill a specific nutritional need in a feed ration.
- Feed supplements are substances used to improve the nutritive balance or performance of the total ration. These may be mixed or offered free choice separately from the rest of the ration.
- Health care products include medications, remedies, parasiticides, and other substances used to maintain or restore the well being of an animal. Many of these substances are considered farm animal drugs under the Canadian Food and Drug Act. As such, they should be used with the degree of care that animal drugs require.
- Production aids include all other materials used on animals and their living areas. These include bedding, cleaners, disinfectants, and dips.
- All materials listed in the livestock section have one of the following designations:
  - Allowed (A) materials may be given to certified organic animals and used in their production areas. Many allowed materials are accompanied by annotations regarding their proper use.
  - Regulated (R) materials may be given to Certified Organic animals and used in their production areas only with certain restrictions. Several regulated materials are discouraged in organic production, and they may be used only if no alternatives are feasible. POSA requires producers to document efforts to reduce or eliminate the use of regulated materials in the Farm Plan. Certification Bodies may decertify animals, animal products, or entire operations of producers who use a regulated material in a way that does not comply with the regulations for that material's usage.
  - Prohibited (P) materials may not be given to livestock or applied to the production area in the certification program. Animals treated with prohibited materials must be culled from the organic herd or flock and diverted to the non-organic market. Prohibited materials applied to a production area may require as much as a three-year transition before organic animals are permitted in that area.

<b>POSA Status</b>	<b>Name of Material</b>	<b>POSA Class</b>	<b>ANNOTATION</b>
R	Acetic acid, natural	LH/LPA	Natural forms of acetic acid allowed for use as a disinfectant and sanitizer. Organic sources required for internal use. The synthetic form of this material has not been reviewed.
A	Acupuncture	LH	Allowed.
A	Alcohol, derived from fermentation	LH	Allowed in medications and as a topical disinfectant.
P	Alcohol, ethanol	LF	Prohibited for use as a feed additive.
A	Alcohol, ethanol	LH	Allowed for use in medical treatments and as a disinfectant.
A	Alcohol, isopropyl	LH	Approved for use only as a disinfectant.
R	Alcohol, methyl	LH/LPA	Methyl alcohol from non-synthetic sources may be used topically and as disinfectant
A	Algae	LF	See 'Aquatic plant products'.
A	Amino acids from fermented sources	LF	To supplement rations.
R	Amino acids from synthetic sources	LF	To supplement rations where sufficient sources are not available from natural sources
R	Anesthetics	LH	All anesthetics not explicitly approved must be used under the supervision of a licensed veterinarian. Procaine, lidocaine TMS (MS222), metomidate and clove oil may be administered by producers. Withdrawal periods (for parenterally administered) are at least 90 days for slaughter stock.
A	Fish and fish by-products	LF	Fish and fish by-products are allowed for use in feed. Fish and fish used to generate the by-products must come from a fishery that meets the requirements of the "Code of Conduct for Responsible Fisheries FAO 1995."
R	Anthelmintics, synthetic	LH	May be used if required by government policy or regulations
P	Antibiotics	LF/LH	Prohibited for slaughter animals and as feed additive.
R	Antibiotics	LH	Permitted for health care emergencies only and for brood stock prior to ovulation. Fish treated therapeutically with antibiotics must be excluded from production for 90 days or double the official waiting period, whichever is greater.
A	Aquatic plant products	LF	Natural (non-synthetic) extracts are allowed. Extraction with synthetic solvents is prohibited except for potassium hydroxide, provided the amount of solvent used does not exceed the amount necessary for extraction. Aquatic plant products are prohibited if they contain synthetic preservatives, such as formaldehyde or are fortified with otherwise prohibited plant nutrients.
A	Ascorbic acid	LF/LH	Source of vitamin C. See vitamins
A	Aspirin	LH	Approved for health care to reduce inflammation.
A	Astaxanthin from biological sources	LF	To supplement rations. See vitamins
R	Astaxanthin from synthetic sources	LF	To supplement rations where sufficient biological sources are not available. Or when biological sources are not suitable (GMO, contain prohibited substances, are not functional).
R	Biotin	LF/LH	See 'Vitamins'.
R	Bleach	LPA	May be used for disinfecting facilities and tools. Listed under 'Chlorine Bleach' (Calcium hypochlorite, sodium hypochlorite, sodium metabisulphite and chlorine dioxide.) Allowed for disinfecting and sanitising food contact surfaces.
P	Bone meal, raw	LF	Prohibited for use in animal feed. to prevent transmission of Bovine Spongiform Encephalopathy (BSE) Disease.
P	Bone meal, steamed	LF	Prohibited for use in animal feed to prevent transmission of Bovine Spongiform Encephalopathy (BSE) Disease.
A	Botanicals	LH/LHE	Botanical preparations registered for use and according to label specifications. Botanical preparations from non-toxic food plants for topical use or as external parasiticides.
R	Botanicals	LHE	Botanical external parasiticides must be applied according to label restrictions and cannot be primary means of control. Least toxic botanicals must be used in the least ecologically disruptive way and with worker protection. Status of rotenone to be reviewed.
A	Brewer's yeast	LF	Cannot be produced by recombinant DNA technologies.
A	Brewery wastes	LF	Organic sources only
R	Calciferol	LF/LH	Source of Vitamin D2
R	Calcium	LF/LH	May be supplied by Calcium bitartate, calcium carbonate, calcium citrate, calcium glycerophosphate, calcium lactate, calcium oxide, calcium phosphate, calcium pyrophosphate, and calcium sulphate. See minerals.
A	Calcium borogluconate	LH	For treatment of hypocalcemia (milk fever) under vet supervision. Also products referring to Calcium gluconate.

POSA Status	Name of Material	POSA Class	ANNOTATION
R	Calcium hypochlorite	LPA	See 'Bleach'.
R	Calcium glycerophosphate	LF/LH	Source of phosphate. See minerals.
R	Calcium iodobenenate	LF/LH	Source of iodine. See minerals.
R	Calcium iodate	LF/LH	Source of iodine. See minerals.
R	Calcium pantothenate	LF/LH	Source of pantothenic acid. See vitamins.
R	Calcium phosphate	LF/LH	Source of phosphate. See minerals.
R	Calcium pyrophosphate	LF/LH	Source of phosphate. See minerals.
R	Calcium sulphate	LF/LH	Source of calcium and sulphur. See minerals.
A	Carbon dioxide	LH	For anesthetic (is under review).
A	Carriers and fillers	LF	Organic agricultural products and non-organic ingredients allowed for organic food processing are allowed for use as carriers and fillers in organic feed, feed supplements and feed additives in accordance with Canadian Food and Drug regulations.
R	Carriers and fillers	LF	Natural substances documented to be from Non GMO sources that meet Food Drug regulations. Restricted feed additives must not exceed 5% of dry weight of formulated feed and cannot be fed free choice.
P	Carriers and fillers	LF	Synthetic substances not listed as allowed or regulated GMO's or their derivatives and natural substances explicitly prohibited or not meeting requirements for livestock feed.
R	Chloramine T	LH	For use as a topic treatment for bacteria and fungus control
R	Chlorine	LPA	See 'Bleach'
	Chlorohexidine	LH	Synthetic material being reviewed by OMRI as a treatment for mastitis.
R	Cholcalciferol	LF/LH	Source of Vitamin D3. See vitamins.
R	Choline	LF/LH	Maybe supplied by choline bitartrate or choline chloride. See vitamins
A	Cleaning agents, allowed	LPA	Alcohol, soaps, and water.
R	Cleaning agents, regulated	LPA	Alkali carbonates, bleach, potassium permanganate, sodium hydroxide and caustic potash. May not be used in direct contact with animals, or soil.
P	Cleaning agents, prohibited	LPA	All synthetic cleaning agents not explicitly allowed or regulated are prohibited. These cannot be used in certified facilities or in the presence of certified livestock.
P	Coal tar	LH	Prohibited.
R	Cobalt	LF	May be supplied by cobalt acetate, cobalt carbonate, cobalt chloride, and cobalt oxide or cobalt sulphate. See 'Minerals.
R	Cobalt sulphate	LF/LH	Source of cobalt and sulphur. See minerals
A	Colostrum for newborns	LH	Cannot be from cows treated with Bovine Growth Hormone. Non-organic allowed when organic source not available.
A	Colostrum/whey antibodies	LF	Cannot be from cows treated with Bovine Growth Hormone. Non-Organic allowed if organic source not available.
R	Copper	LF/LH	May be supplied by copper carbonate, copper chloride, copper gluconate, copper hydroxide, copper orthophosphate, copper oxide, copper pyrophosphate, copper sulphate and cuprous iodide. See minerals.
R	Copper sulphate	LF LH/LHE LPA	For use as an essential nutrient (source of copper and sulphur) and for topical use (foot baths).
R	Cuprous iodide	LF/LH	Source of iodine. See minerals.
R	Cyanocobalamin	LF/LH	Source of B12. See vitamins.
R	Defoam	LPA	Water conditioner for smolt and broodstock transport
A	Diatomaceous earth	LH	
R	3,5 diiodosalicilic acid	LF/LH	Source of iodine. See minerals
A	Dolomite	LF	
A	Electrolytes	LH	May not contain antibiotics.
A	<i>enzymes, natural</i>	LF/LH	May not be used to stimulate growth or production.
R	<i>Epsom salts</i>	LF	Source of Magnesium and sulphur.
R	Essential oils	LH/LHE	. Includes menthol, cinnamon, eucalyptus, spearmint, wintergreen, thyme and camphor for apicultural use to control tracheal mites.
P	Ethoxyquin	LF	Permitted for use in fishmeal and fish oil to a maximum concentration of 200 ppm
R	External parasiticides, synthetic	LH	The use of a systemic parasiticide on a female in the third trimester of gestation or during lactation will disqualify the offspring as organically produced for slaughter purposes. For exceptions see Livestock standard Must be used with a holistic parasite management program and cannot be the primary means of external parasite control. See 'Hydrated lime'. See 'Lime sulphur'.
R	External parasiticides, natural	LH	Essential oils such as citronella or cedar oil which are extracted with water, oil or alcohol. Pyrethrum may also be used against external

POSA Status	Name of Material	POSA Class	ANNOTATION
			parasites. See 'Pyrethrum'.
R	Ferric phosphate	LF/LH	Source of iron. See minerals
R	Ferrous lactate	LF/LH	Source of iron. See Minerals
R	Ferrous sulphate	LF/LH	Source of iron and sulphur. See Minerals
A	Fish oil	LF	Allowed
R	folate	LF/LH	May be derived from folic acid. See vitamins.
R	Folic acid	LF/LH	Source of folate. See vitamins.
R	Formaldehyde	LH	Bath treatment for the control of fungus
P	Genetically modified/engineered organisms	LF	The use of genetically engineered organisms or their products are prohibited in any form or at any state in organic production, processing or handling.
A	Glucose	LH	Allowed
P	Growth promoters, synthetic	LF	Prohibited.
A	Herbal preparations, organic	LH	Herbs and herbal preparations taken internally by livestock must be certified organically grown and prepared. May not be extracted with synthetic chemicals. See botanicals for topically applied medicinal herbs.
R	Herbal preparations non-organic	LH	Non-organic herbs and herbal preparations may be used only if organic herbs or herbal preparations are commercially unavailable.
A	Homeopathic preparations	LH	
A	Honey	LH	As external disinfectant.
P	Hormones	LF	All hormones that are not explicitly allowed are prohibited for livestock production. May not be used as growth promoters. See specific hormones for regulated medicinal uses.
R	Hydrated lime (calcium hydroxide)	LH/LPA	For use as disinfectant and external parasiticide. Not permitted to cauterize mutilations. Not permitted for soil application or for deodorizing animal wastes.
R	Hydrated sodium calcium aluminosilicate	LF/LH	See minerals
A	Hydrogen peroxide	LH/LPA	Use as a disinfectant only, not registered for internal use in Canada.
R	Iodine	LF	Allowed as a feed supplement and for use as an topical disinfectant. Topical disinfect sources include potassium iodide elemental iodine in phosphoric acid solution and tamed forms. As a cleaning agent, must be followed by a hot water rinse.
R	Iron	LF	May be supplied by ferric phosphate, ferric pyrophosphate, ferrous lactate, ferrous sulphate, iron carbonate, iron gluconate, iron oxide, iron phosphate, iron pyrophosphate, iron sulphate, or reduced iron.
R	Iron sulphate	LF/LH	Source of iron and sulphur. See minerals
R	Lidocaine	LH	Allowed as a local anesthetic.
R	limonene	LH	External parasiticide –see botanicals
R	Local anaesthetics	LH	All anesthetics not explicitly approved must be used under the supervision of a licensed veterinarian. Procaine and lidocaine may be administered by producers. Withdrawal for anesthetics administered by injection are at least 90 days for slaughter stock.
R	Magnesium	LF/LH	May be obtained from magnesium carbonate, magnesium hydroxide, magnesium oxide, and magnesium sulphate. See minerals.
R	Magnesium sulphate, Epsom salts	LF	Source of magnesium and sulphur. See minerals.
R	Manganese	LF/LH	May be derived from manganese acetate, manganese chloride, manganese citrate, manganese gluconate, manganese glycerophosphate, manganese hypophosphate, manganese orthophosphate, and manganese phosphate or manganese sulphate. See minerals
A	Marl	LF	See 'Minerals, non-synthetic'.
A	Medications, non- synthetic	LH	Non- synthetic medications may be used to treat diagnosed illnesses.
R	Medications, synthetic	LH	Therapeutic use only. See specific medication for additional restrictions.
A/R	Microbial products	LF/LH	Must not be from GMO source. See probiotics. When fed in absence of illness, all carriers must be allowed. See carriers.
R	Mineral oil	LH	For topical use and as a lubricant.
R	Minerals	LF	Non-synthetic mined minerals that are registered for use in livestock feed. Synthetic nutrients minerals may be used in non-synthetic sources are unavailable. Minerals may not be used to stimulate growth or production. Minerals from any source are allowed for medical use.
A	Molasses, certified organic	LF	Allowed.
R	Molasses, non-organic	LF	Non-organic molasses may be used as a feed supplement provided documented lack of organic molasses.
R/P	Neem	LHE	See botanicals. (Use only if Neem products are registered for use in Canada.)

<b>POSA Status</b>	<b>Name of Material</b>	<b>POSA Class</b>	<b>ANNOTATION</b>
R	Niacin	LF/LH	Maybe derived from nicotinic acid. See vitamins
R	Nicotinic acid	LF/LH	Source of niacin. See vitamins.
A	Ovadine	LH	For use as a disinfectant for fertilized eggs. For use as a general disinfectant.
P	Oxytetracycline (Terramycin )	LH	Prohibited as a feed additive for growth promotion.
R	Pantothenic acid	LF/LH	Derived from calcium pantothenate and sodium pantothenate. See vitamins.
R	Parasiticides	LH	May be used if required by government policy or regulation.
R	Peracetic Acid	LPA	Sanitizing agent for facilities and equipment. Must be followed by a hot water rinse. (Not registered for egg washing)
A	Peroxiguard	LH/LPA	General disinfectant.
R	Petroleum oils	LH	Prohibited.
R	Phosphorus	LF/LH	Maybe supplied by calcium glycerophosphate, calcium phosphate, calcium pyrophosphate, potassium glycerophosphate, sodium acid pyrophosphate, sodium aluminum phosphate, sodium phosphate, or sodium triphosphate. See minerals
R	Phosphoric Acid	LPA	As a cleaning agent only. Must be followed by a hot water rinse.
A	Phytase	LF	See enzymes, natural
P	Plastic feed pellets	LF	Prohibited.
R	Potassium	LF/LH	May be derived from potassium bicarbonate, potassium carbonate, potassium citrate, potassium glycerophosphate, and potassium hydroxide or potassium sulphate. See minerals.
R	Potassium chloride	LH	May be used to treat diagnosed illnesses. See minerals
R	Potassium glycerophosphate	LF/LH	Source of phosphate
R	Potassium Hydroxides (Lye)	LPA	For disinfecting livestock facilities.
R	Potassium iodate	LF/LH	Source of iodine. See minerals.
R	Potassium iodide	LF/LH LPA	Source of iodine. See minerals.
R	Potassium permanganate	LPA	For disinfecting livestock facilities.
R	Potassium sulphate	LF/LH	Source of potassium and sulphur. See minerals
P	Preservatives, synthetic	LF	Prohibited for use in feed, feed supplements and feed additives. See excipients for use in health care products.
A	Probiotics, allowed	LF	Direct fed microorganisms must not be from GMO sources. All carriers must have an allowed status when used as feed additives fed on a routine basis. See carriers, fillers, allowed.
R	Probiotics, regulated	LF	Direct fed microorganisms must not be from GMO sources. Carriers may be from non-organic sources provided the combined regulated additives do not exceed 5% of dry weight of the formulated feed net of salt and water. Regulated probiotics cannot be fed free choice to organic animals on a routine basis.
R	Probiotics, health care	LH	Microorganisms registered for use as animal drugs or licensed, as biological products must not be from GMO Sources.
R	Procaine	LH	Allowed as a local anaesthetic.
R	Pyrethrum	LHE	May be used as an external parasiticide. Producers must comply with all label instructions for administration of parasiticides to livestock in addition to the specific regulations pertaining to organic production systems. See pyrethrum listings in crop section. Piperonyl butoxide is prohibited as a synergist; see pyrethrum and inerts listings in crop section for other ingredients in formulated products.
R	Pyridoxine hydrochloride	LF/LH	Source of vitamin B6. See vitamins
R	Reduced iron	LF/LH	Source of iron. See minerals.
R	Riboflavin	LF/LH	Source of vitamin B2. See vitamins.
R	Riboflavin-5-phosphate	LF/LH	Source of vitamin B2. See vitamins.
R	Rotenone	LHE	Under review
P	Ryania	LHE	Botanical not currently registered for use in Canada
A	Seaweed	LF	Allowed.
R	Selenium	LF/LH	May be derived from sodium selenate or sodium selenite. See minerals. May be used when documented deficiencies in the stock, soils or feed supplies.
R	Soap	LPA	May be used as a disinfectant for livestock and facilities. Must be followed by a hot water rinse.
R	Sodium	LF/LH	May be derived from sodium acetate, sodium acid pyrophosphate, sodium aluminum phosphate, sodium caseinate, sodium chloride, sodium citrate, sodium hydroxide, sodium pectinate, sodium phosphate, or sodium tartrate. See minerals
R	Sodium acid pyrophosphate	LF/LH	Source of phosphate. See minerals
R	Sodium aluminum phosphate	LF/LH	Source of phosphate. See minerals
R	Sodium bicarbonate	LF/LH	See minerals.

<b>POSA Status</b>	<b>Name of Material</b>	<b>POSA Class</b>	<b>ANNOTATION</b>
R	Sodium carbonate	LF/LH	See minerals.
A	Sodium chloride	LF	As a feed supplement.
R	Sodium hypochlorite	LPA	See 'Bleach'.
R	Sodium iodate	LF/LH	Source of iodine. See minerals.
R	Sodium iodide	LF/LH	Source of iodine. See minerals.
R	Sodium pantothenate	LF/LH	Source of pantothenic acid. See vitamins.
R	Sodium phosphate	LF/LH	Source of phosphate. See minerals.
R	Sodium selenate	LF/LH	See minerals.
R	Sodium sulphate	LF/LH	Source of sodium and sulphur. See minerals.
R	Sodium tripolyphosphate	LF/LH	Source of phosphate
R	Testosterone	LPA	For the production of monosex broodstock. These fish are not to be sold for human consumption.
R	Thiamine hydrochloride	LF/LH	Source of vitamin B1. See minerals.
R	Thymol iodide	LF/LH	Source of iodine. See minerals.
R	Tocopherol	LF/LH	Source of vitamin E. See vitamins.
P	Urea	LF	All uses prohibited including using in livestock feed.
A	Vaccines	LH	As appropriate to each bioregion and/or as required by law.
A	Vinegar	LF	Allowed.
A	Virkon	LH	General disinfectant
A	Vitamins, natural	LF/LH	Allowed.
R	Vitamins A	LF/LH	May be derived from vitamin A acetate or vitamin A palmitate. See vitamins.
R	Vitamin A acetate	LF/LH	See vitamins.
R	Vitamin A palmitate	LF/LH	See vitamins.
R	Vitamin B1	LF/LH	May be derived from thiamine hydrochloride. See vitamins.
R	Vitamin B2	LF/LH	May be derived from riboflavin or riboflavin-5-phosphate. See vitamins.
R	Vitamin B6	LF/LH	May be derived from pyridoxine hydrochloride. See vitamins.
R	Vitamin B12	LF/LH	May be derived from cyanocobalamin. See vitamins.
R	Vitamin C	LF/LH	May be derived from ascorbic acid.
R	Vitamin D	LF/LH	May be in the forms of vitamin D2 (calciferol) or vitamin D3 (cholecalciferol). See vitamins.
R	Vitamin E	LF/LH	May be derived from tocopherols. See vitamins.
R	Vitamins synthetic	LF/LH	Vitamins may not be used to stimulate growth or production. Non-synthetic vitamins that are allowed by federal regulation may be used in feed. Synthetic vitamins may be used if non-synthetic sources are unavailable. Vitamins from any source are allowed for medical use.
A	Water	LF	See drinking water standard (8.4.13)
P	Water, recycled	LF	Recycled water that has been treated to remove excess carbon dioxide, solids and ammonia and reconditioned with sufficient oxygen may be used. Specific standards will have to be developed for recycle systems.
A	Yeast	LF	May not be from GMO sources. See microbial products.
A	Zeolite	LF	May be added to feed up to 2%.
R	Zinc	LF/LH	May be derived from zinc acetate, zinc carbonate, zinc chloride, zinc gluconate, zinc oxide, zinc stearate, or zinc sulphate. See minerals.
R	Zinc sulphate	LF/LH	Source of zinc and sulphur. See minerals

## **APPENDIX 2 – Standard Setting Organizations**

BFA – Biological Farmers of Australia  
BIO GRO – New Zealand Organic Standards  
BIO SUISSE – Association of the Swiss Organic Agriculture Organizations  
CAN/OGB – Canadian National Standards Board  
COABC – Certified Organic Associations of British Columbia  
CODEX ALIMENTARIUS – Codex Alimentarius Commission  
COG – Canadian Organic Growers  
DEBIO - Norway  
EU REGULATION 1804/99  
IFOAM – International Federation of Organic Agricultural Movements  
JAPANESE AGRICULTURAL STANDARD OF ORGANIC AGRICULTURAL PRODUCTS  
KRAV – Kontrollforeningen for Ekologisk odling  
NASAA – The National Association for Sustainable Agriculture Australia Limited  
NOP – National Organic Program  
NOSB – National Organic Standards Board  
NATURLAND – Naturland e.V.  
OC/PRO - Organic Crop Producers & Processors Inc. / Pro-Cert Organic Systems  
SGS – SGS Organic Production Standard  
SOIL ASSOCIATION – Draft Standards