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CAN/CGSB-32.312-2012

ICS 65.150

WITHDRAWAL

October 2017

Organic Aquaculture Standards

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Octobre 2017

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ORGANIC AQUACULTURE STANDARDS

CETTE NORME NATIONALE DU CANADA EST DISPONIBLE EN VERSIONS FRANÇAISE ET ANGLAISE.

Prepared by the
Canadian General Standards Board CGSB

Approved by the
Standards Council of Canada

Published April 2012 by the
Canadian General Standards Board
Gatineau, Canada K1A 1G6

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ORGANIC AQUACULTURE STANDARDS

TABLE OF CONTENTS

		Page
	INTRODUCTION (Informative)	**iii**
1.	**SCOPE**	**1**
2.	**REFERENCED PUBLICATIONS**	**2**
3.	**DEFINITIONS AND TERMINOLOGY**	**2**
4.	**ORGANIC PLAN**	**6**
5.	**SEAWEEDS AND AQUATIC PLANT AQUACULTURE**	**7**
5.1	**Water Quality and Environment**	**7**
5.2	**Sustainable Harvesting of Wildcrafted Seaweeds and Aquatic Plants**	**8**
5.3	**Seaweed and Aquatic Plant Cultivation**	**8**
5.4	**Antifouling Measures and Cleaning of Production Equipment and Facilities**	**8**
6.	**ANIMAL AQUACULTURE**	**8**
6.1	**Water Quality and Environment**	**8**
6.2	**Aquaculture Animal Species and Origins**	**9**
6.3	**Reproduction**	**9**
6.4	**Feed and Feeding**	**9**
6.5	**Health and Welfare**	**10**
6.6	**Cultivation Conditions**	**12**
6.7	**Antifouling Measures and Cleaning of Production Equipment and Facilities**	**13**
6.8	**Harvesting, Transporting Live Aquaculture Animals and Slaughtering**	**13**
6.9	**Specific Requirements for Aquatic Invertebrate Production**	**13**
7.	**PEST MANAGEMENT IN FACILITIES**	**16**
8.	**PROCESSING, HANDLING, TRANSPORTATION AND STORAGE OF ORGANIC PRODUCTS**	**16**
9.	**PERMITTED SUBSTANCES LISTS FOR AQUACULTURE SEAWEED AND AQUATIC PLANT PRODUCTION**	**16**
10.	**PERMITTED SUBSTANCES LISTS FOR AQUACULTURE ANIMAL PRODUCTION**	**17**
11.	**PEST CONTROL SUBSTANCES**	**19**
12.	**SUBSTANCES FOR CLEANING AND DISINFECTION OF EQUIPMENT AND FACILITIES, IN THE ABSENCE OF SEAWEEDS, AQUATIC PLANTS AND AQUACULTURE ANIMALS**	**20**
13.	**NOTES (Informative)**	**21**

Page

APPENDIX A (Normative) **MAXIMUM STOCKING DENSITY** **A1**

APPENDIX B (Informative) **REQUIREMENTS FOR ADDING OR AMENDING SUBSTANCES IN THE PERMITTED SUBSTANCES LISTS** **B1**

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ORGANIC AQUACULTURE STANDARDS

INTRODUCTION (Informative)

I. Description

Organic aquaculture production is a holistic system designed to optimize the productivity and fitness of diverse communities within the aquatic ecosystem, including benthic organisms, seaweeds, aquatic plants, aquaculture animals and people. The principal goal of organic aquaculture production is to develop enterprises that are sustainable and harmonious with the environment.

This standard[1] describes the principles and management standards of organic aquaculture and provides lists of substances that are permitted for use in organic aquaculture.

As in the case of all products sold in Canada, organic inputs, such as, but not limited to, fertilizers, feed supplements, pesticides, water amendments, veterinary treatments, processing additives or aids, sanitizing and cleaning material; and products derived from organic aquaculture, such as, but not limited to, feed and food, should comply with all applicable regulatory requirements.

Substances that appear on the Permitted Substances Lists are subject to the *Pest Control Products Act* (PCPA) or the *Food and Drugs Act* (FDA) when used in Canada as pesticides (PCPA), sanitizers (PCPA) or disinfectants (FDA). Their presence on these lists only confirms their acceptability under the present standards. However, they can legally be used in Canada only if a product is registered for each particular use. Users can ascertain the legality of the use by consulting Health Canada's label database or by reading the directions available on each product label. Health Canada's Pest Management Regulatory Agency (PMRA) is the federal authority responsible for the regulation of pesticides[2] under the PCPA and Regulations. Disinfectants are regulated by Health Canada's Therapeutic Products Directorate (TPD) under the FDA and Regulations.

Substances that appear on the Permitted Substances Lists are subject to the *Food and Drugs Act* (FDA) when used in Canada as veterinary drugs destined to food-producing animals and to the *Feeds Act* (FA) when used in Canada as livestock feed. Health Canada's Veterinary Drugs Directorate is the federal authority responsible for the regulation of veterinary drugs under the FDA and Regulations. Animal feeds are regulated by the Animal Feed Division of the Canadian Food Inspection Agency (CFIA) under the FA and Regulations and the *Health of Animals Act* and Regulations.

II. General Principles of Organic Aquaculture Production

Organic aquaculture production is based on principles that support healthy practices. These principles aim to increase the quality and the durability of the environment through specific management and production methods. They also focus on ensuring the humane treatment of animals.

The general principles of organic aquaculture production include the following:

1. Protect the environment, minimize benthic degradation and erosion and water quality degradation, decrease pollution, optimize biological productivity and promote a sound state of health.

2. Maintain long-term biological stability by optimizing conditions for biological diversity.

3. Recycle materials and resources to the greatest extent possible within the enterprise.

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[1] *References throughout this document to "this standard" refer to CAN/CGSB-32.312,* Organic Aquaculture Standards.

[2] *Pesticides as defined in this standard.*

4. Provide attentive care that promotes the health and meets the behavioural needs of aquaculture animals.

5. Prepare organic products, emphasizing careful processing, and handling methods in order to maintain the organic integrity and vital qualities of the products at all stages of production.

III. Organic Practices

Neither this standard nor organic products in accordance with this standard represent specific claims about the health, safety and nutrition of such organic products.

Management methods are carefully selected in order to restore and then sustain ecological stability within the enterprise and the surrounding environment. Biological stability is maintained and enhanced by promoting optimal biological activity within the aquaculture production unit and the surrounding area. Weeds, pests and diseases are managed using biological and mechanical control methods, and cultural practices. Crop selection and fallowing are important for managing nutrient cycling, recycling of plant and animal residues, water management, augmentation of beneficial organisms for the promotion of biological diversity, and ecologically based pest management.

Under a system of organic aquaculture production, aquaculture animals are provided with living conditions and space allowances appropriate to their behavioural requirements, and organically produced feed. These practices strive to minimize stress, promote good health and prevent disease.

Organic products are produced and processed under a system that strives to preserve the integrity of the principles in this standard.

Organic practices and this standard cannot assure that organic products are entirely free of residues of substances prohibited by this standard and of other contaminants, since exposure to such compounds from the atmosphere, soil, ground water and other sources may be beyond the control of the operator. The practices permitted by this standard are designed to assure the least possible residues at the lowest possible levels.

In the development of the standard, it was recognized that differences between Canada's aquaculture regions require varying practices to meet production needs.

To ensure compliance with this standard in the marketplace, specific measures are necessary to ensure that trade and processing enterprises can be audited effectively. The certification of a process, rather than a final product, demands responsible action by all involved parties.

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ORGANIC AQUACULTURE STANDARDS

1. SCOPE

1.1 Foods and other aquaculture products shall refer to organic production methods only if they comply with this standard and local regulations.

1.2 This standard applies to the following products to the extent that the principles of production and specific verification rules for them are described in the standard:

a. Seaweeds and aquatic plants and seaweed and aquatic plant products, aquaculture animals and aquaculture animal products

b. Processed products intended for human consumption or use and derived from the items mentioned in par. 1.2 a.

c. Aquaculture animal feed

d. Processed products intended for animal consumption or use derived from the items mentioned in par. 1.2 a.

1.3 Quantities and dimensions in this standard are given in metric units.

1.4 **Prohibited Substances, Methods or Ingredients in Organic Production and Handling**

1.4.1 When producing or handling organic products, it is forbidden to use any of the following substances or techniques:

a. All materials and products produced from genetic engineering as these are not compatible with the general principles of organic production and therefore are not accepted under this standard, except for vaccines

b. Synthetic pesticides (e.g. defoliants and desiccants, fungicides, insecticides and rodenticides), wood preservatives (e.g. arsenate) or other pesticides, except as specified in this standard

c. Fertilizer or composted plant and animal material that contains a substance prohibited by par. 1.4.1 (and not included in this standard)

d. Sewage sludge, in any form, as defined in this standard, as an input

e. Synthetic growth regulators

f. Synthetic veterinary drugs, including antibiotics and parasiticides, except as specified in this standard

g. Synthetic processing substances, aids and ingredients, and food additives and processing aids including sulphates, nitrates and nitrites, except as specified in CAN/CGSB-32.311, *Organic Production Systems — Permitted Substances Lists*

h. Ionizing radiation and forms of irradiation on products destined for food or their inputs, as defined in this standard, except as specified in CAN/CGSB-32.311, *Organic Production Systems — Permitted Substances Lists*

i. Equipment, packaging materials and storage containers, or bins that contain a synthetic fungicide, preservative or fumigant

j. Substances that are not included in the Permitted Substances Lists, except as provided by this standard

k. Cloned farm animals and their descendants. A producer shall know the lineage of any non-organic animal brought under organic management

l. Intentionally manufactured nano-technology products, or nano-processes involving intentional manipulation of matter at the nano scale to achieve new properties or functions that are different than properties and functions of the materials at the macro scale, except naturally occurring nanosized particles, or those produced incidentally through normal processes such as grinding flour, or nano sized particles used in a way that guarantees no transference to product.

2. REFERENCED PUBLICATIONS

2.1 The following publications are referenced in this standard:

2.1.1 Canadian General Standards Board (CGSB)

CAN/CGSB-32.310 — *Organic Production Systems — General Principles and Management Standards*

CAN/CGSB-32.311 — *Organic Production Systems — Permitted Substances Lists*.

2.2 A dated reference in this standard is to the issue specified. An undated reference in this standard is to the latest issue. The sources are given in the Notes section.

3. DEFINITIONS AND TERMINOLOGY

3.1 The following definitions and terms apply in this standard:

Antibiotic (Antibiotique)
Natural substances produced by a micro-organism (including the chemically synthesized equivalent of any such substance) that have the capacity to inhibit the growth of or to kill other micro-organisms, specifically bacteria.

Antimicrobial (Antimicrobien)
Antimicrobial includes all substances that can kill or inhibit the growth of micro-organisms (e.g. antibacterials, antivirals, antimycotics and disinfectants).

Aquaculture (Aquaculture)
The cultivation of seaweeds, aquatic plants or animals in a controlled or managed environment.

Aquaculture Animal (Animal d'aquaculture)
Animal raised in captivity in fresh, brackish, or salt water.

Aquatic Plant (Plante aquatique)
Plant cultivated or naturally growing in fresh, brackish, or salt water.

Broodstock (Géniteurs)
Aquaculture animals kept for the production of gametes.

Buffer Zone (Zone tampon)
A clearly defined and identifiable boundary area that separates an organic production unit from adjacent non-organic areas.

Cloned Animals (Animaux clonés)
Identical animals resulting from human manipulation of embryos and embryo transfer, using techniques such as somatic cell nuclear transfer, embryonic cell nuclear transfer or embryo splitting.

Commercially Available (Disponible sur le marché)
The documented ability to obtain a production input or an ingredient in an appropriate form, quality, quantity or variety in order to fulfil an essential function in an organic farming, processing or handling system.

Commingling (Mélange)
Physical contact between bulk, unbound or unpackaged organic products and non-organic products during production, processing, transportation, storage or handling.

Disinfectant (Désinfectant)
An antimicrobial agent capable of destroying pathogenic and potentially pathogenic micro-organisms on environmental surfaces and inanimate objects.

Feed (Aliments pour animaux)
Edible materials, which are consumed by aquaculture animals for their nutritional value. May be supplied to aquaculture animals or may be foraged.

Feed Additive (Additif pour alimentation animale)
A substance or combination of substances added, usually in micro quantities, to the basic aquaculture animal feed mix or parts thereof to fulfil a specific need. Careful handling and mixing is required. Includes substances added in small amounts to aquaculture animals' feed to enhance, stabilize, preserve, or otherwise alter it.

Feed Supplement (Supplément pour alimentation animale)
"Supplement" means a feed that is used with another feed to improve the nutritive balance of the total ration and that is intended to be

a. fed undiluted as a supplement to other feeds,

b. offered free choice with other parts of the ration separately available, or

c. further diluted and mixed to produce a complete feed.

Note: *In Canada, regulations require that the resulting feed shall be acceptable for registration.*

Food Irradiation (Irradiation des aliments)
A sanitation or preservative method for packaged or bulk foodstuffs that controls insect infestation and that reduces microbial load by ionizing radiation from Cobalt-60 or Cesium-137; or X-rays generated by a machine source operated at or below an energy level of 5 MeV; or from electrons generated by a machine source operated at or below an energy level of 10 MeV.

Genetic Engineering (Génie génétique)
Refers to techniques by which the genetic material of an organism is changed in a way that does not occur naturally by multiplication and/or natural recombination. Examples of the techniques used in genetic engineering include but are not limited to

— recombinant DNA (rDNA) techniques that use vector systems;

— techniques involving the direct introduction into the organism of hereditary materials prepared outside the organism;

— cell fusion (including protoplast fusion) or hybridization techniques that overcome natural physiological, reproductive or recombination barriers, where the donor cells/protoplasts do not fall within the same taxonomic family.

Unless the donor/recipient organism is derived from any of the above techniques, examples of techniques not covered by this definition include

— in vitro fertilization;

— conjugation, transduction, transformation, or any other natural process;

— polyploidy induction;

— cell fusion (including protoplast fusion) or hybridization techniques where the donor cells/protoplasts are in the same taxonomic family.

Handling (Manutention)
Any operation or portion of operation that receives or otherwise acquires aquaculture products for resale, including final retailers of aquaculture products, who process and transform, repack or relabel such products.

Homeopathy (Homéopathie)
A treatment of disease based on the administration of minute doses of a substance that in massive amounts produce symptoms in healthy animals similar to those of the disease itself.

Input (Intrant)
Substances that are used or directly applied to the organic production system: particularly fertilizers, feed supplements, pesticides, water and benthic amendments, veterinary treatments, processing additives or aids, sanitizing and cleaning materials.

Integrated Multi-Trophic Aquaculture (Aquaculture multitrophique intégrée)
The farming, in proximity, of aquaculture species from different trophic levels, and with complementary ecosystem functions, in a way that allows one species' uneaten feed and wastes, nutrients and by-products to be recaptured and converted into fertilizer, feed and energy for the other crops, and to take advantage of synergistic interactions between species.

Monosex (Monosexe)
Population comprised of only one sex.

Nanotechnology (Nanotechnologie)
Nanotechnology is a field described generally as the control and structuring of matter at dimensions typically between 1 and 100 nm to create materials, devices and systems with fundamentally new properties and functions. Nanoscale chemical substances, or nanomaterials, behave differently from their macroscale counterparts, exhibiting different mechanical, optical, magnetic and electronic properties.

Organic Integrity (Intégrité biologique)
The maintenance of the inherent organic qualities of a product from the reception of ingredients through to the end consumer, in accordance with this standard.

Organic Product (Produit biologique)
Any commodity or output produced by a system conforming to this standard.

Organic Production (Production biologique)
A method of production, including any subsequent processing, handling, storage and transportation, conforming to this standard.

Parallel Production (Production parallèle)
The simultaneous production, processing or handling of organic and non-organic (including transitional) seaweeds, aquatic plants, aquaculture animals and products of the same or similar (indistinguishable) varieties.

Pest (Organisme nuisible)
Any injurious, noxious or troublesome insect, fungus, bacterial organism, virus, weed, rodent or other plant or animal.

Pesticide or Pest Control Product (Pesticide ou produit antiparasitaire)
Any product, device, organism, substance or thing that is manufactured, represented, sold or used as a means for directly or indirectly controlling, preventing, destroying, mitigating, attracting or repelling any pest. Control products include active ingredients used in the manufacture of end-use products and the end-use products themselves. Includes herbicides, insecticides, fungicides, antimicrobial agents, pool chemicals, microbials, material and wood preservatives, animal and insect repellents, and insect- and rodent-controlling devices.

Piscivorous (Piscivore)
Aquaculture animals that feed primarily on fish.

Processing (Transformation)
Means any of the following fish process operations:

a. Canning fish

b. Processing ready-to-eat fish

c. Processing shellfish

d. Pickling, spicing or marinating fish

e. Salting or drying fish

f. Processing fresh or frozen fish or semi-preserves, and

g. Any other type of process operation.

Production Unit (Unité de production)
An identifiable portion of an operation that produces, raises, processes or handles an organic product under a specific management plan.

Records (Registres)
Any information in written, visual or electronic form that documents the activities undertaken by a producer or a person engaged in the production, processing or handling of organic products, in accordance with this standard.

Sanitizer (Agent d'assainissement)
A product that reduces the level of micro-organisms present by significant numbers, e.g. 3 $\log_{10}$ reduction (99.9%) or more, or to acceptable levels established by local health authorities.

Sewage Sludge (Boues d'épuration)
A solid, liquid or semisolid material typically formed as a precipitate from wastewater treatment of liquid and solid human domestic waste, among other compounds, which is accumulated predominantly in municipal or industrial sewage treatment facilities, sewers and drains. Sewage sludge includes, but is not limited to, domestic septage; scum or solids removed in primary, secondary or advanced wastewater treatment processes; or material derived from sewage sludge.

Sustainable (Durable)
Refers to the meeting of the needs of the present without compromising the ability of future generations to meet their own needs.

Synthetic (Synthétique)
Refers to a man-made substance that is formulated or manufactured by a chemical process or by a process that chemically alters compounds extracted from seaweed, plant, micro-organisms, and animal or mineral sources. This term does not apply to compounds synthesized or produced by biological processes, including heat and mechanical processing.

Traceability (Traçabilité)
A documentation control procedure that can determine the origin, transfer of ownership, and transportation process (i.e. supply chain) of an organic product or a product containing organic ingredients.

Transition (Conversion)
Set of steps taken by the operator of a non-organic production system to establish organic management practices, in accordance with this standard.

Transition Period (Période de conversion)
The period of time between the start of an organic program in a production unit and the attainment of organic status by a production unit, in accordance with this standard.

Veterinary Biologic (Produit biologique vétérinaire)
A helminth, protozoa or micro-organism; or a substance or mixture of substances derived from seaweeds, plants, animals, helminths, protozoa or micro-organisms; or a substance of synthetic origin that is manufactured, sold or represented for use in restoring, correcting or modifying functions in animals or for use in the diagnosis, treatment, mitigation or prevention of a disease, disorder, abnormal physical state, or the symptoms thereof, in animals. Veterinary biologics include vaccines, bacterins, bacterin-toxoids, immunoglobin products, diagnostic kits and any veterinary biologic derived through biothechnology.

Veterinary Drug (Médicament vétérinaire)
Any substance or mixture of substances represented for use or administrated in the diagnosis, treatment, mitigation or prevention of disease, disorder, abnormal physical state or its symptoms in animals; restoring, correcting or modifying functions in animals.

Water Quality (Qualité de l'eau)
Observable indicators of the physical, chemical, or biological conditions of water, including the presence of environmental contaminants.

Wildcrafting (Récolte en milieu naturel)
Wildcrafting is the practice of harvesting seaweeds and plants from their natural, or "wild" habitat. It applies to uncultivated seaweeds and plants wherever they may be found, and is not necessarily limited to wilderness areas. Ethical considerations are often involved, such as protecting endangered species.

4. ORGANIC PLAN

4.1 The operator of an enterprise shall prepare an organic plan outlining the details of transition, production, processing, handling and management practices, in accordance with this standard.

4.2 The organic plan shall be updated annually to address changes to the plan or management system, problems encountered in executing the plan, and measures taken to overcome such problems.

4.3 The organic plan shall include a description of the internal record-keeping system, with documents sufficient to meet traceability requirements as specified in par. 4.4.1 and record-keeping requirements.

4.4 **Record Keeping and Identification** — The operator seeking to comply with this standard shall maintain records and relevant supporting documents concerning the inputs and details of their use, production, processing, handling and transport of organic seaweeds, aquatic plants, aquaculture animals and products. The operator is responsible for maintaining the organic integrity of the product and shall fully record and disclose all activities and transactions in sufficient detail as to be readily understood; and sufficient to demonstrate compliance to this standard.

4.4.1 Records shall make it possible to trace

a. the origin, nature and quantities of organic products, as stated within this standard, that have been delivered to the production unit;

b. the nature, quantities and consignees of products, as stated within this standard, that have left the production unit;

c. any other information, such as the origin, nature and quantities of ingredients, additives and manufacturing aids delivered to the unit, and the composition of processed products, for the purposes of proper verification of the operations in accordance with this standard.

4.4.2 Records shall be maintained for not less than five years beyond their creation.

4.4.3 An identification system shall be provided for distinguishing organic and non-organic seaweeds, aquatic plants, aquaculture animals (e.g. general appearance, colour, variety and types), and products.

4.5 **Transition Period**

4.5.1 The following transition periods for aquaculture production units shall apply for the following types of aquaculture:

a. For facilities that cannot be drained and cleaned, a transition period of 36 months, including their existing seaweeds, aquatic plants and aquaculture animals;

b. For facilities that can be drained or have been fallowed, a transition period of 12 months, including their existing seaweeds, aquatic plants and aquaculture animals;

c. For facilities that have been drained, cleaned, disinfected and rinsed, no transition period for new stock and a transition period of 12 months for existing seaweeds, aquatic plants and aquaculture animals; and

d. For open water facilities, a transition period of at least 12 months or one production cycle, whichever is less, during which time equipment and apparatus are cleaned.

4.5.2 Any documented period in which the facilities, seaweeds, aquatic plants and aquaculture animals were not treated or exposed to substances prohibited or not permitted by this standard may be included in the transition period.

Note: *Certification to this standard requires operators to document that they have not used substances prohibited and not permitted by this standard.*

It also requires that, in the case of an initial application for an organic certification of seaweeds and aquatic plants harvested in wild areas and aquaculture products with a production cycle of more than 12 months, the application for certification shall be filed, at least 15 months before the day on which the product is expected to be marketed. During that period of time, the full compliance of this standard will be assessed by the certification body, and this assessment shall at least include one inspection of the production unit during production in the year before aquaculture products may be eligible for certification and one inspection during production in the year aquaculture products are eligible for certification.

The initial application for an organic certification of aquaculture products with a production cycle of 12 months or less shall be filed within 12 months. During that period of time, the full compliance of this standard will be assessed by the certification body, and this assessment shall at least include one inspection of the production unit in the year aquaculture products are eligible for certification.

4.6 **Parallel Production and Buffer Zones**

4.6.1 Parallel production is permitted within an operation, but not within a production unit.

4.6.2 In open water systems, organic aquaculture facilities shall provide buffer zones from potential contamination sources, including pesticide drift and other possible contaminants from external sources. The minimum separation distance between organic and non-organic production shall be based on the natural situation, separate water distribution systems, distances, tidal flow, and the upstream and downstream location of the organic production unit.

4.6.3 For land-based aquaculture facilities, there shall be physical barriers such that water cannot circulate between organic and non-organic production units.

4.6.4 Equipment dedicated to organic production should be used. If equipment is used on non-organic and organic production units, it shall be cleaned according to a defined protocol established to prevent contact with organic production and handling operations and products with substances not permitted by this standard.

4.6.5 Areas for storing all inputs for organic and non-organic production methods shall be kept well separated.

4.6.6 Feed and inputs for organic production shall be clearly marked.

4.6.7 Adequate records shall be available for organic and non-organic production systems.

5. SEAWEEDS AND AQUATIC PLANT AQUACULTURE

5.1 **Water Quality and Environment**

5.1.1 Operations shall be situated in locations where water is not subject to contamination by products or substances not authorized for organic production, or pollutants that would compromise the organic nature of the products.

5.1.2 The operator shall detail the environmental effects of the operation and the environmental monitoring to be undertaken, and list measures to be taken to minimize negative impacts on the surrounding aquatic and terrestrial environments.

5.1.3 For seaweed harvesting, a once-off biomass estimate shall be undertaken at the outset.

5.2 **Sustainable Harvesting of Wildcrafted Seaweeds and Aquatic Plants**

5.2.1 Records shall be maintained to demonstrate that harvesters have supplied only wild seaweeds and aquatic plants in accordance with this standard.

5.2.2 Harvesting shall be carried out in such a way that the amounts harvested do not cause significant impact on the state of the aquatic environment. Measures shall be taken to ensure that seaweeds and aquatic plants can regenerate, such as harvest techniques and tools, minimum sizes, ages, reproductive cycles or size of remaining seaweeds and aquatic plants. Evidence of sustainable management and of no long-term impact on the harvesting areas shall be provided.

5.2.3 If seaweeds and aquatic plants are harvested from a shared or common harvest area, records shall be available to demonstrate that the total harvest complies with this standard.

5.3 **Seaweed and Aquatic Plant Cultivation**

5.3.1 Seaweed and aquatic plant cultivation shall only utilize nutrients naturally occurring in the environment, or from organic aquaculture animal production, preferably located nearby as part of an Integrated Multi-Trophic Aquaculture system.

5.3.2 In enclosed and recirculation systems, the dissolved amounts of nutrients shall not exceed those necessary for healthy growth of the plants, and culture media shall be disposed of in a manner that does not adversely impact the environment. Nutrients from organic aquaculture animal production or nutrients of plant or mineral origin as listed in CAN/CGSB-32.311, *Organic Production Systems — Permitted Substances Lists*, may be used provided that the origin and use are consistent with the annotation for that substance. Nutrients listed in par. 9.2 may be used.

5.3.3 In enclosed and recirculation systems, crop production aids and materials as listed in CAN/CGSB-32.311, *Organic Production Systems — Permitted Substances Lists*, may be used provided that the origin and use are consistent with the annotation for that substance. Crop production aids and materials listed in par. 9.3 may be used.

5.3.4 Retired equipment that was used in growing seaweeds and aquatic plants shall be re-used or recycled where possible.

5.4 **Antifouling Measures and Cleaning of Production Equipment and Facilities**

5.4.1 Bio-fouling organisms shall be removed by mechanical means and disposed of in an appropriate manner, or by using substances permitted for that use in par. 9.3 or section 12.

5.4.2 Cleaning of equipment and facilities shall be carried out by physical or mechanical means. Where this is not satisfactory, only the substances listed in section 12 may be used.

6. ANIMAL AQUACULTURE

6.1 **Water Quality and Environment**

6.1.1 Operations shall be sited in locations where the water is not subject to contamination by products or substances not authorized for organic production, or pollutants that would compromise the organic nature of the products.

6.1.2 The operator shall detail the environmental effects of the operation and the environmental monitoring to be undertaken, and list measures to be taken to minimize negative impacts on the surrounding aquatic and terrestrial environments, including limiting waste accumulation and minimizing impact to the migratory and reproductive patterns of local wild fish populations, other local species like predators, birds and any other fauna and flora.

6.1.3 Open water units shall be sited and managed in such a way that sediment build-up underneath the unit does not exceed the assimilation capacity of the local environment. The operator shall develop a dissolved and particulate nutrient management plan clearly illustrating how assimilation capacity will be evaluated and how assimilation capacity will be maintained.

6.1.4 Nutrient cycling through practices such as Integrated Multi-Trophic Aquaculture is encouraged.

6.1.5 For aquaculture in fish ponds, tanks or raceways, effluent monitoring shall be carried out, at least annually, and farms shall be equipped with either natural filter beds, settlement ponds, or biological filters to collect waste nutrients or use seaweeds, aquatic plants and/or animals that contribute to improving the quality of the effluent. Mechanical filters are permitted.

6.1.6 Feed waste, manure and mortalities that have been collected shall be recycled.

6.1.7 Retired equipment that was used in rearing aquaculture animals shall be re-used or recycled where possible.

6.2 **Aquaculture Animal Species and Origins**

6.2.1 Aquaculture animals intended for organic production shall be taken from indigenous species or adapted to rearing conditions.

6.2.2 Aquaculture animals that are introduced in a production unit shall come from organic sources.

6.2.3 For breeding purposes or for improving genetic stock, and when organic aquaculture animals are not commercially available, wild-caught or non-organic aquaculture animals may be brought into a production unit and shall be kept under organic management. Collection of wild-caught species shall be in compliance with all local regulations, and shall be done in collaboration with government agencies, to ensure that natural populations and the collected individuals are protected, and that biodiversity in the ecosystem is supported.

6.2.4 Broodstock that has not been under continuous organic management shall never be organic for slaughter purposes. However, the offspring may be organic if they have been raised according to this standard.

6.2.5 For finfish, if organic animals are not commercially available, stock from non-organic hatcheries may be used, provided that at least the final 90% of biomass gain occurs while the animals are under continuous organic management.

6.3 **Reproduction**

6.3.1 Cultivation methods shall allow natural methods of hatching or spawning with the following exceptions:

a. The use of methods involving human intervention to extract gametes and fertilize eggs is permitted.

b. For species that cannot spawn naturally in captivity, spawning may be induced using exogenous releasing hormones only if other methods are not available. Broodstock shall lose organic status when slaughtered.

6.3.2 Aquaculture animals treated with steroids or other hormones shall lose organic status for human consumption. Broodstock obtained by treatment with steroids or other hormones shall lose organic status but may continue to be used within the organic aquaculture system.

6.3.3 Techniques using genetic engineering are prohibited.

6.4 **Feed and Feeding**

6.4.1 Feeding and feed rations supplied to aquaculture animals shall be compatible with diets occurring in the natural environment and be designed according to the specific nutritional needs of each species.

6.4.2 Fish meal and fish oil derived from aquatic animals and other feed sources shall be organic, when commercially available.

6.4.3 When organic fish meal or fish oil is not commercially available, it shall be preferentially sourced from trimming of fish already caught for human consumption in sustainable fisheries.

Note: *See Implementation of the 1995 FAO Code of Conduct for Responsible Fisheries.*

6.4.4 When non-organic feed sources are used, they shall not exceed 80% of the action levels of the contaminants in feed.

Note: *In Canada, action levels of the contaminants in feed are available in* RG-1 Regulatory Guidance: Feed Registration Procedures and Labeling Standards *at CFIA Web site (inspection.gc.ca).*

Note: *At the time of the original publication of the standard, insufficient supplies of organic fish meal exist to satisfy the sector. It is the intention to develop these supplies and to revise the standard in five years with the goal of eliminating non-organic feed supplies.*

6.4.5 Feed shall only be offered in a way that minimizes loss of feed to the environment.

6.4.6 Feed, feed additives and feed supplements listed in par. 10.2 may be used in organic aquaculture.

6.4.7 Pigments from organic sources may be added to the feed. When organic sources are not commercially available, only non-synthetic pigments may be used.

6.4.8 The following shall not be fed:

a. Urea, antibiotics and hormones used to promote growth and synthetic growth agents

b. Silage preservation products except for products listed in par. 10.2

c. Synthetic appetite-enhancers or synthetic flavour-enhancers

d. Synthetic colouring agents.

6.5 **Health and Welfare**

6.5.1 Aquaculture facilities shall be designed, operated and managed in a manner that seeks to maximize the welfare and minimize the stress on aquaculture animals, and minimizes the spread of disease within the facility, and to all adjoining ecosystems and native fish species.

6.5.1.1 When net pen systems are used, producers shall implement measures to minimize transmission of diseases and parasites between cultured and wild aquatic animals. Net pens shall be sited in such a manner as to minimize contamination and disease from conventional fish pens or native fish populations, taking into account factors like currents and seasonal changes.

6.5.2 Management shall be based on the five following domains of welfare:

a. Aquaculture animals shall have ready access to an appropriate diet in sufficient quantities and with a composition that maintains full health and vigour.

b. Aquaculture animals are in close contact with their environment. Water quality is of central importance to their welfare. Water quality parameters shall be appropriate to meet physiological and ethological needs.

c. Disease shall be prevented or rapidly diagnosed and treated.

d. Aquaculture animals shall have sufficient space, proper facilities and, where appropriate, the company of the animal's own kind.

e. Conditions that produce unacceptable levels of stress caused by anxiety, fear, distress, boredom, sickness, pain, hunger and so on shall be minimized.

6.5.3 Holding systems, equipment and utensils shall be properly cleaned according to a defined protocol. Only products listed in section 12 may be used.

6.5.4 If necessary to prevent disease, an appropriate fallowing period shall be applied after each production cycle. During fallowing, the cage or other structure used for aquaculture animal production is emptied, cleaned and left empty before being used again.

6.5.5 Uneaten fish feed, faeces and dead animals shall be managed to support the health and welfare of the animal(s) as described in par. 6.5.2.

6.5.6 Hygienic routines shall be carried out as well as routine examinations to detect nascent diseases and production disturbances. Where possible, the cause of outbreaks of disease or infection shall be identified and management practices implemented to prevent the causative events and future outbreaks.

6.5.7 Vaccinations are permitted. Prophylactic treatment with other synthetic veterinary drugs is prohibited.

6.5.8 Physical alterations are prohibited except when absolutely necessary to improve the health, welfare or hygiene of aquaculture animals, or for identification or safety reasons. Physical alterations shall be undertaken in a manner that minimizes pain, stress and suffering, with consideration to the use of anaesthetics and sedatives.

6.5.9 Where preventive practices and vaccines are inadequate to prevent sickness or injury and where disease and health problems require treatment, the use of biological, cultural, and physical treatments and practices is permitted, in accordance with the Permitted Substances Lists.

6.5.10 Medical treatment for sick or injured aquaculture animals shall not be withheld to preserve their organic status. All appropriate medications shall be used to restore aquaculture animals to health when methods acceptable to organic production fail. Sick and medicated aquaculture animals shall be quarantined from healthy aquaculture animals.

6.5.11 Products from sick aquaculture animals or those undergoing treatment with restricted substances shall not be organic or fed to organic aquaculture animals or livestock.

6.5.12 The use of veterinary medicinal substances in organic production systems shall conform to the following:

a. If no alternative treatment or management practice exists, the use of veterinary biologics, including vaccines, the use of parasiticides or the therapeutic use of synthetic medications may be administered provided that such medications are permitted, in accordance with this standard, or are required by law.

b. Phytotherapeutic (i.e. algal, herbal or botanical substances excluding antibiotics), homeopathic or similar products shall be used in preference to chemical allopathic veterinary drugs or antibiotics, provided that their therapeutic effect is effective for the species and the condition for which the treatment is intended.

c. If the use of the products in par. 6.5.12 a. and b. is unlikely to be effective in combating illness or injury, chemical allopathic drugs (not listed on the Permitted Substances Lists) may be administered under veterinary supervision. Some restrictions apply when aquaculture animals are treated (see par. 6.5.13, 6.5.14 d. and 6.5.15). In addition to the treatments allowed for combating illness or injury, anaesthetics may be administered no more than twice a year when handling individual fish (e.g. vaccination, weight counts, parasite counting, fin clipping, tagging, or surgery).

d. When veterinary drugs are used, the withdrawal period indicated on the Permitted Substances Lists shall be observed before the products from treated aquaculture animals can be considered organic.

e. When veterinary drugs are used and the withdrawal period is not indicated on the Permitted Substances Lists or the substance is not listed on the Permitted Substances Lists, a withdrawal period equivalent to double the label or veterinary prescription requirement, or 14 days, whichever is longer, shall be observed before the products from treated aquaculture animals can be considered organic.

f. Broodstock treated with antibiotics may continue to be used within the organic aquaculture system, but shall never be organic for slaughter purposes.

6.5.13 Hormonal treatment shall only be used for therapeutic reasons and under veterinary supervision. The slaughter aquaculture animals so treated cannot be organic unless the treatment is permitted by the Permitted Substances Lists.

6.5.14 The operator of an organic aquaculture animal operation shall not administer

a. synthetic compounds to stimulate or retard growth or production, including hormones for growth promotion;

b. synthetic parasiticides to slaughter aquaculture animals, except as provided in par. 6.5.15;

c. antibiotics to slaughter aquaculture animals;

d. chemical allopathic veterinary drugs (e.g. pharmaceuticals, antibiotics, hormones and steroids) for preventive treatments.

6.5.15 Organic aquaculture operations shall have a comprehensive plan to minimize parasite problems in aquaculture animals.

a. The plan will include preventive measures such as fallowing, lowering density and monitoring, as well as emergency measures in the event of a parasite outbreak.

b. By way of derogation, when preventive measures fail (because of aquatic climatic conditions or other uncontrollable factors), and in the case where the operator uses direct treatment measures such as feeding, topical application or external application in a confined static bath, the use of synthetic parasiticides is permitted, provided that

i. monitoring of the animal, as appropriate for the species, indicates the aquaculture animals are infected with parasites;

ii. the operator has received written instructions from a veterinarian indicating the product and method for parasite control that shall be used;

iii. withdrawal times shall be twice the legal requirement or 14 days whichever is longer;

iv. there shall be only one treatment for slaughter aquaculture animals under a year old and a maximum of two treatments for older slaughter aquaculture animals. Slaughter aquaculture animals that require further treatment will lose organic status;

v. the operator shall provide a written action plan (including timing), describing how they will amend their parasite control plan, to avoid similar emergencies.

6.5.16 Treated stock shall be clearly identifiable.

6.6 **Cultivation Conditions**

6.6.1 Cultivation conditions shall promote health and welfare as specified in par. 6.5.2.

6.6.2 Cultivation shall occur within a secure and well-managed production system where controls are in place to prevent breaches of containment. A contingency plan for all units shall describe how escapes can be avoided and how escapees may be recaptured. Recaptured animals will lose their organic status. The operator shall demonstrate that the organic aquaculture system meets and exceeds the requirements imposed by local authorities.

Note: *Any escape event shall immediately be reported to the certification body and to the appropriate government authorities.*

6.6.3 Recirculation systems are permitted if the system supports the health, growth, and well-being of the species.

6.6.4 Prolonged light periods are permitted up to the day length naturally encountered by the species being reared.

6.6.5 Construction materials and housing containing leachable toxic chemical agents are prohibited.

6.6.6 Maximum stocking density is set out in Appendix A. Density requirements are quite variable depending on many factors such as production system (e.g. recirculation systems, type of water), species, production stage of the animal and water quality. Other appropriate stocking densities may be considered. Water quality and condition of the fish shall be monitored and maintained, so that natural behaviors are promoted and aggressive and dominant behaviors from other aquaculture animals are limited. In considering the effects of stocking density on the welfare of farmed fish, parameters such as fin damage, other injuries, growth rate, behavior expressed and overall health shall be evaluated.

6.6.7 The culture system shall be managed to minimize the risk of losses of cultured stock, stress to cultured aquaculture animals caused by predators, and harm to predators.

6.6.7.1 An Integrated Predator Deterrence Plan shall be developed. The plan shall identify potential predators, appropriate deterrence methods, how predator behavior will be modified by application of deterrence methods, documentation of control methods and effects, contingencies for failure to achieve objectives, and how plan implementation conserves biodiversity in the ecosystem adjacent to and including the aquaculture facility. Examples of such control measures include, but are not limited to, site selection, physical barriers, repellents, and legal predator deterrence methods.

6.6.7.2 Non-lethal deterrents shall be used as a first course of action.

6.6.7.3 Lethal measures may be taken only when predators threaten human safety or are necessary for predator welfare and shall include appropriate documentation. Lethal measures shall be in compliance with local regulations.

6.6.8 The purposeful release of cultured aquaculture animals from any rearing unit into the environment is prohibited, unless approved by the local authority.

6.7 **Antifouling Measures and Cleaning of Production Equipment and Facilities**

6.7.1 Bio-fouling organisms shall be removed by mechanical means and disposed of in an appropriate manner, or by using substances permitted for that use in par. 10.3 or section 12.

6.7.2 Cleaning of equipment and facilities shall be carried out by physical or mechanical means. Where this is not satisfactory, only the substances listed in section 12 may be used.

6.8 **Harvesting, Transporting Live Aquaculture Animals and Slaughtering**

6.8.1 Techniques used to capture, handle and harvest aquaculture animals shall be selected such that they cause minimal physiological stress or injury, and that natural habitats are preserved. In order to keep stress levels to a minimum, only essential handling shall take place.

6.8.2 Vehicles and boats used shall be adapted to the types of live aquaculture animals being transported. Water quality requirements shall be met (including temperature, oxygen, etc.), and population densities shall meet the aquaculture animal welfare requirements with special consideration being given to aquaculture animals that are transported live to market and for slaughter.

6.8.3 The use of tranquillizing chemicals, paralyzing toxins and carbon dioxide is prohibited.

6.8.4 Slaughtering shall minimize pre-slaughter and slaughter stress.

6.8.5 Slaughter techniques shall render aquaculture vertebrate animals immediately unconscious and insensible to pain. Differences in harvesting sizes, species, and production sites shall be taken into account when considering optimal slaughtering methods.

6.8.6 Aquaculture vertebrate animals shall not be slaughtered in ponds, cages or tanks where other aquaculture animals are living.

6.8.7 Aquaculture vertebrate animals shall not be slaughtered by suffocation.

6.8.8 Harvesting, transporting, slaughtering and subsequent handling of organic and non-organic aquaculture animals shall be clearly separated in time or space in order to completely avoid commingling.

6.9 **Specific Requirements for Aquatic Invertebrate Production**

6.9.1 ***Water Quality and Environment***

6.9.1.1 In addition to the requirements in par. 6.1, growing areas shall be classified as “approved.” Growing areas classified as “conditionally approved,” “restricted” and “conditionally restricted” are not permitted for organic aquatic invertebrate production.

Note: *In Canada, classification criteria are as per specified in the* Canadian Shellfish Sanitation Program — Manual of Operations.

6.9.1.2 Depuration of bivalve molluscs for the purpose of eliminating or reducing amounts of substances prohibited by this standard is prohibited.

6.9.1.3 In the event of a closure ordered by a local authority for environmental reasons and biotoxin events, the waters under organic production shall remain closed for an additional five days after these waters are reopened by that authority and that requirements under par. 6.9.1.1 are satisfied.

6.9.2 ***Sourcing of Seed***

6.9.2.1 Where applicable, requirements in par. 6.2 and 6.3 apply.

6.9.2.2 Except as provided in par. 6.9.2.3, larvae or spat shall come from organic sources.

6.9.2.3 The use of seed from non-organic sources is permitted if organic material is not commercially available. If seed originates from non-organic sources, then the product may be considered as organic provided that at least the final 95% of biomass gain occurs while the animals are under continuous organic management.

6.9.2.4 The collection of wild seed shall

a. be done according to local regulations;

b. not compromise the ecological integrity of the aquatic ecosystem;

c. ensure sustainable wild populations; and

d. minimize overset of wild seed, when possible.

6.9.3 ***Setting Larvae***

6.9.3.1 The use of epinephrine to expedite setting is prohibited.

6.9.4 ***Collection of Wild Spat***

6.9.4.1 All equipment temporarily placed in an area of aquatic invertebrates shall be adequately identified, of orderly appearance, and securely anchored.

Note: *In Canada, such equipment shall be removed from the area as required by the local authority.*

6.9.4.2 Intertidal cultch shall be adequately spaced or elevated to ensure that habitat is not smothered or otherwise damaged.

6.9.5 ***Feed and Feeding***

6.9.5.1 Where applicable, requirements in par. 6.4 apply.

6.9.5.2 Filter-feeding aquatic invertebrates shall receive all their nutritional requirements from nature or organic Integrated Multi-Trophic Aquaculture except in the case of animals reared in hatcheries and recirculation systems.

6.9.5.3 In hatcheries and recirculation systems, feed supplied to aquatic invertebrates shall be in compliance with this standard.

6.9.6 ***Health and Welfare***

6.9.6.1 Where applicable, requirements in par. 6.5 apply.

6.9.7 ***Cultivation Conditions***

6.9.7.1 The requirements in par. 6.6 apply except requirements in par. 6.6.2.

6.9.7.2 *Cultch (Setting Substrate)*

6.9.7.2.1 The following materials are prohibited as setting substrate:

a. Tires

b. PVC French tubes that have not been weathered.

6.9.7.2.2 Cultch disinfection is permitted, provided that the substances used are listed in section 12.

6.9.7.3 *Aquatic Invertebrate Density*

6.9.7.3.1 Density levels shall reflect due considerations of the optimal health and welfare of the cultured organisms.

6.9.7.3.2 Density levels shall not exceed the sustainable yield of the ecosystem in which the operation is located. This shall take into account the production of other tenures of aquatic invertebrates in the area.

6.9.7.4 *Predator and Pest Control*

6.9.7.4.1 Requirements in par. 6.6.7 and 6.6.7.1 apply.

6.9.7.4.2 Any modification of the tenure substrate (e.g. removal of rock or gravelling) shall follow a management plan that demonstrably minimizes habitat impacts.

6.9.7.4.3 Predator exclusion devices (e.g. predator netting on clam beaches and vertical fencing) shall be secured at all times to ensure they not do present undue risk of entanglement or injury to wildlife.

6.9.7.4.4 All predator and pest control practices shall target specific animals, with minimal impact on aquatic animal and wildlife habitat.

6.9.7.4.5 The following materials and methods are permitted in pest control:

a. Physical barriers (e.g. clam netting, vertical predator fences, traps, natural bait as attractant to traps)

b. Manual removal

c. High-pressure water washing

d. Dehydration through exposure to air and sun

e. Hot water treatment

f. Substances permitted in par. 10.3

g. Dips with substances permitted in par. 10.3

h. Release of natural predators (e.g. sea urchins to eat bissel thread of mussels and control seaweed growth)

i. Creation of environments fostering natural predators.

6.9.7.4.6 Disturbance of endangered aquatic organisms or critical animal habitat is prohibited.

6.9.7.4.7 Unnecessary destruction of aquatic organisms or aquatic habitat is prohibited.

6.9.7.4.8 Killing, capturing or injuring migratory birds and disturbing their nests is prohibited.

6.9.7.4.9 The following materials and methods are prohibited in pest control:

a. Fumigants

b. Synthetic pesticides, petroleum distillates and solvents

c. Traps containing prohibited materials

d. Poison, natural or otherwise.

6.9.8 ***Waste Management***

6.9.8.1 Only products that can be recycled or that have a long life span shall be used in the production system.

6.9.8.2 All wastes produced by an operation shall be collected and disposed of properly. Shells and non-edible wastes shall be disposed of in such a manner as to not attract vermin or insects or otherwise increase risks of food contamination.

6.9.8.3 The use of expanded cellular polystyrene as a flotation device is prohibited for new installations and for replacement purposes.

6.9.9 ***Access, Private Property Rights and Riparian Rights***

6.9.9.1 Aquaculture sites shall be well marked.

6.9.9.2 Producers shall provide clearly marked public access through or around tenures of aquatic invertebrates.

7. PEST MANAGEMENT IN FACILITIES (e.g. feed storage facilities, warehouse, buildings housing production equipment, processing facilities)

7.1 Good production practices shall be adopted to prevent pests. Pest management practices shall first involve the removal of pest habitat and food; second, the prevention of access and environmental management (light, temperature and atmosphere) to prevent pest intrusion and reproduction; and third, mechanical and physical methods (traps), lures and repellents listed in par. 6.7 of CAN/CGSB-32.311, *Organic Production Systems — Permitted Substances Lists*.

7.2 If the practices given in par. 7.1 are ineffective, the operator may use pest control substances listed in par. 6.7 of CAN/CGSB-32.311, *Organic Production Systems — Permitted Substances Lists*. The operator shall record the use and disposition of all such substances.

7.3 If the practices given in par. 7.1 and 7.2 are ineffective, the operator may use pest control substances not listed in par. 6.7 of CAN/CGSB-32.311, *Organic Production Systems — Permitted Substances Lists*. In situations in which pest control substances not listed in par. 6.7 of CAN/CGSB-32.311, *Organic Production Systems — Permitted Substances Lists*, are used indoors, the operator shall ensure that no organic products or packaging materials for those products are present. Documentation shall be maintained showing the movement of organic products in order to avoid contact with these substances and to record the use and disposition of all such substances.

7.4 Organic products shall be exposed only to pesticides or pest control substances listed in par. 6.7 of CAN/CGSB-32.311, *Organic Production Systems — Permitted Substances Lists*, during any stage of production, transit, storage or border crossing.

8. PROCESSING, HANDLING, TRANSPORTATION AND STORAGE OF ORGANIC PRODUCTS

8.1 Processing, handling, transportation and storage of organic products are subject to the requirements of section 8 of CAN/CGSB-32.310, *Organic Production Systems — General Principles and Management Standards*, and CAN/CGSB-32.311, *Organic Production Systems — Permitted Substances Lists*.

9. PERMITTED SUBSTANCES LISTS FOR AQUACULTURE SEAWEED AND AQUATIC PLANT PRODUCTION

9.1 **Classification** — Crop production substances are classified according to the following uses and applications:

a. Amendments and Crop Nutrition

b. Crop Production Aids and Materials.

9.2 **Amendments and Crop Nutrition** — Substances permitted in par. 4.2 of CAN/CGSB-32.311, *Organic Production Systems — Permitted Substances Lists*, are permitted in Aquaculture Seaweed and Aquatic Plant Production provided that the origin and use are consistent with the annotation for that substance. Unless otherwise specified, the soil amendments and crop nutrients listed below shall not contain substances prohibited by par. 1.4.1, or not permitted by this standard.

Substance Name(s)	Origin and Usage
Carbon dioxide	Non-synthetic and synthetic sources. As seaweed and plant nutrient.
Ethylenediaminetetra-acetate (EDTA), salts	To maintain trace elements in solution and available as micronutrients in recirculation systems.
Vitamins	Non-synthetic sources of all vitamins and synthetic sources of thiamine (B1), biotin (H) and cyanocobalamin (B12).

9.3 **Crop Production Aids and Materials** — Substances used in crop production (par. 4.3 of CAN/CGSB-32.311, *Organic Production Systems — Permitted Substances Lists*) are permitted in Aquaculture Seaweed and Aquatic Plant Production provided that the origin and use are consistent with the annotation for that substance. Unless otherwise specified, the crop production aids and materials listed below shall not contain substances prohibited by par. 1.4.1, or not permitted by this standard.

Substance Name(s)	Origin and Usage
Carbon dioxide	Non-synthetic and synthetic sources. For maintaining pond water alkalinity and controlling pH of water.
Sodium hydroxide	For neutralizing acids in recirculation systems. The amount used shall not exceed the minimum needed to raise the pH to 7.

10. PERMITTED SUBSTANCES LISTS FOR AQUACULTURE ANIMAL PRODUCTION

10.1 **Classification** — Aquaculture animal production substances are classified according to the following uses and applications:

a. **Feed, Feed Additives and Feed Supplements**

b. **Health Care Products and Production Aids** — Health care products include medications, remedies, parasiticides and other substances used to maintain or restore the well-being of an aquaculture animal. Production aids include all other substances used for aquaculture animals and their living areas, such as water conditioners.

10.2 **Feed, Feed Additives and Feed Supplements**

Note: *In Canada, feed shall meet minimum nutritional standards described in table 4 of the* Feeds Regulations, 1983. *Ingredients used in feed shall be approved in Schedule IV or V of the* Feeds Regulations, 1983. *Some ingredients and products require registration (e.g. enzymes and milk replacers).*

Substance Name(s)	Origin and Usage
Agar	As a feed binder.
Alginates	As a feed binder.
Amino acids	Non-synthetic sources only. Exception granted for use of synthetic DL-methionine, DL-methionine—hydroxy analog and DL-methionine—hydroxy analog calcium. ***Note:*** *This exception will be re-evaluated at the next revision of this standard.*
Antioxidants	Non-synthetic sources only. Water, alcohol, acid and base extracts permitted by this standard, CAN/CGSB-32.310 and CAN/CGSB-32.311only. Synthetic sources are permitted when legally required.
Carrageenan	As a feed binder.

Substance Name(s)	Origin and Usage
Diatomaceous earth and mineral clay	Approved as an anti-caking agent in feed to a maximum of 2% of the total diet.
Enzymes	Non-synthetic sources. May not be used to stimulate growth or production.
Feeds	Shall be obtained from organic sources and may include silage preservation products (e.g. bacterial or enzymatic additives derived from bacteria, fungi and plants and food by-products [e.g. molasses and whey]). Note that if weather conditions are unfavourable to fermentation, lactic, propionic and formic acid and their salts may be used. See also fish oil and fish meal.
Feed stabilizers	Calcium propionate, sodium propionate.
Fish	See requirements that apply in par. 6.4 of this standard.
Fish oil	See requirements that apply in par. 6.4 of this standard.
Fish meal	See requirements that apply in par. 6.4 of this standard.
Micro-organisms and yeasts	
Minerals, trace minerals, elements	Non-synthetic chelated or sulphated minerals such as but not limited to calcium chloride. Synthetic nutrient minerals may be used when non-synthetic sources are not commercially available. Minerals may not be used to stimulate growth or production.
Molasses	May be used as a flavouring agent; shall be organic unless not commercially available.
Nucleotides	
Pigments	From organic sources. When organic sources are not commercially available, non-synthetic pigments may be used.
Plankton	See requirements that apply in par. 6.4 of this standard.
Probiotics	
Seaweed meal	From sustainable sources.
Vitamins	Used for enrichment or fortification of aquaculture animal feed. Synthetic vitamins may be used if non-synthetic sources are not commercially available.

10.3 **Health Care Products and Production Aids**

Note: *In Canada, substances that appear on the Permitted Substances Lists are subject to applicable laws and regulations (see Introduction, I. Description), and most products require registration.*

Substance Name(s)	Origin and Usage
Acetic acid	Organic sources only when used for internal use. Non-organic sources may be used for external use.
Acetylsalicylic acid	Aspirin.
Alcohol, ethyl (ethanol)	Permitted as a disinfectant and sanitizer only.
Alcohol, isopropyl	Permitted as a disinfectant only.
Androgens	See requirements that apply in par. 6.3.2 of this standard.
Anesthetics	Use requires a withdrawal period of twice the label requirement.
Antibiotics	See requirements that apply in par. 6.5 of this standard.
Anti-inflammatories	For health care use, to reduce inflammation. Preference shall be given to natural alternatives.
Botanical compounds	Botanical preparations according to label specifications.
Calcium carbonate	As a water conditioner.

Substance Name(s)	Origin and Usage
Diatomaceous earth and mineral clay	For use in control of external parasites, as a filtering aid and as a production aid.
Electrolytes	
Formaldehyde	Bath treatment for the control of fungus on eggs and for broodstock. Broodstock shall never be organic for slaughter purposes.
Glucose	
Herbs and herbal preparations	Used internally or externally. Shall be organic unless not commercially available. They may not be extracted with synthetic chemicals. See also *Botanical compounds*.
Homeopathic preparations	
Honey	Organic honey is permitted.
Hydrogen peroxide	External use: pharmaceutical grade.
Iodine	For use as a topical disinfectant. Sources include potassium iodide and elemental iodine.
Lime, hydrated	Not permitted to cauterize physical alterations or deodorize animal wastes.
Micro-organisms	Water treatment.
Mineral oil	For external use only.
Minerals	Minerals from any source are permitted for medical use.
Oxygen	May be added to water to maintain oxygen levels.
Ozone	
Parasiticides	Natural substances. Synthetic parasiticides are subject to the requirements in par. 6.5.15 b.
Plant oils	To control external parasites.
Potassium chloride	May be used to treat diagnosed illnesses.
Potassium hydroxide	From natural sources. As a water conditioner.
Potassium permanganate	For disease control, and removal of iron and hydrogen sulfide from water.
Releasing hormones	Gonadotropin-releasing hormone GnRH, GnRH-A. Requirements in par. 6.3.1 b. apply.
Sodium bicarbonate	
Sodium chloride	
Sodium hydroxide	For neutralizing acids. The amount used shall not exceed the minimum needed to raise the pH to 7.
Thiosulfate	For neutralizing chlorine in incoming water in recirculation systems.
Veterinary biologics, including vaccines	
Vitamins	Used for enrichment or fortification. Synthetic vitamins may be used if non-synthetic sources are not commercially available. Vitamins from any source are permitted for medical use.
Water	

11. PEST CONTROL SUBSTANCES

11.1 Pest control substances used in organic agriculture production (par. 6.7 of CAN/CGSB-32.311, *Organic Production Systems — Permitted Substances Lists*) are permitted in aquaculture production provided that the origin and use are consistent with the annotation for that substance.

12. SUBSTANCES FOR CLEANING AND DISINFECTION OF EQUIPMENT AND FACILITIES, IN THE ABSENCE OF SEAWEEDS, AQUATIC PLANTS AND AQUACULTURE ANIMALS

Note: *In Canada, substances that appear on the Permitted Substances Lists are subject to applicable laws and regulations (see Introduction, I. Description), and most products require registration.*

Substance Name(s)	Origin and Usage
Acetic acid	Non-synthetic and synthetic sources may be used.
Alcohol	
Bleach a. calcium hypochlorite b. chlorine dioxide c. sodium hypochlorite	Not to exceed 10% solution by volume.
Chlorhexidine	
Chlorine	See *Bleach*.
Citric acid	Non-synthetic and synthetic sources may be used.
Copper sulphate	
Detergents	Biodegradable only (whose biodegraded components are not more harmful than the original components).
Hydrogen peroxide	
Iodine	Non-elemental only and not to exceed 5% solution by volume (e.g. iodophors).
Lactic acid	
Lime	
Ozone	
Peracetic (peroxyacetic) and peroctanoic acids	
Potassium bicarbonate	
Potassium hydroxide (caustic potash)	
Potassium permanganate	Not to exceed 1% solution by volume.
Potassium peroxymonosulfate sulfate	
Soaps	Soaps consisting of fatty acids derived from animal or vegetable oils are permitted.
Soap-based algicide (demossers)	
Sodium bicarbonate (baking soda)	
Sodium borate	
Sodium carbonate (soda ash)	
Sodium chloride	
Sodium hydroxide (lye or caustic soda)	
Surfactants	See *Detergents*, *Soaps*.
Thiosulfate	For neutralizing chlorine.
Ultraviolet	

Substance Name(s)	Origin and Usage
Vinegar	
Wetting agents	Natural wetting agents, including saponins and microbial wetting agents, are permitted. See also *Detergents*, *Soaps*.

13. NOTES (Informative)

13.1 **Related Publications**

13.1.1 Canadian Food Inspection Agency (CFIA)

Feeds Act (R.S.C., 1985, c. F-9)

Feeds Regulations, 1983 (SOR/83-593)

Health of Animals Act (S.C. 1990, c. 21)

Health of Animals Regulations (C.R.C., c. 296).

13.1.2 Canadian Food Inspection Agency (CFIA)

RG-1 Regulatory Guidance: Feed Registration Procedures and Labelling Standards, Chapter 7 — Contaminants in Feed

Canadian Shellfish Sanitation Program — Manual of Operations.

13.1.3 Canadian Organic Aquatic Producers (COAP) Association

COAP Organic Standards, 2005.

13.1.4 Conseil des appellations réservées et des termes valorisants (CARTV)

Quebec Organic Reference Standards.

13.1.5 Health Canada

Food and Drugs Act (R.S.C., 1985, c. F-27)

Food and Drug Regulations (C.R.C., c. 870)

Pest Control Products Act (S.C. 2002, c. 28)

Pest Control Products Regulations (SOR/2006-124).

13.1.6 BioGro New Zealand

BioGro Organic Standards, 2009.

13.1.7 BioSuisse

Bio Suisse Standards for the production, processing and marketing of produce from organic farming, 2009.

13.1.8 Codex Alimentarius Commission

CAC/GL 20-1995 — Principles for Food Import and Export Certification and Inspection

CAC/GL 32-1999 — Guidelines for the Production, Processing, Labelling and Marketing of Organically Produced Foods

13.1.9 Council of the European Union

Council Regulation (EC) No 834/2007 of 28 June 2007 on organic production and labelling of organic products and repealing Regulation (EEC) No 2092/91

Commission Regulation (EC) No 889/2008 of 5 September 2008 laying down detailed rules for the implementation of Council Regulation (EC) No 834/2007 on organic production and labelling of organic products with regard to organic production, labelling and control.

13.1.10 Debio

Standards for Organic Aquaculture, 2009.

13.1.11 Food and Agriculture Organization of the United Nations (FAO)

Implementation of the 1995 FAO Code of Conduct for Responsible Fisheries.

13.1.12 International Federation of Organic Agriculture Movements (IFOAM)

IFOAM Norms for Organic Production and Processing, 2005.

13.1.13 KRAV

Krav Standards, 2010.

13.1.14 Naturland — Association for Organic Agriculture

Naturland Standards for Organic Aquaculture, 2010.

13.1.15 U. S. Department of Agriculture, Agricultural Marketing Service, National Organic Program

NOP Regulations (Standards) & Guidelines, 7 CFR Part 205

Aquaculture Standards Recommendation — Formal Recommendation by the National Organic Standards Board (NOSB) to the National Organic Program (NOP), March 29, 2007

Recommendation on Farmed Aquatic Plants in Organic Agriculture — Formal Recommendation by the National Organic Standards Board (NOSB) to the National Organic Program (NOP), May 22, 2008

Aquaculture: Fish Feed — Fish Oil and Fish Meal & Related Issues — Formal Recommendation by the National Organic Standards Board (NOSB) to the National Organic Program (NOP), November 19, 2008

Aquaculture — Net Pens and Related Issues — Formal Recommendation by the National Organic Standards Board (NOSB) to the National Organic Program (NOP), November 19, 2008

Molluscan Shellfish (Bivalves) — Formal Recommendation by the National Organic Standards Board (NOSB) to the National Organic Program (NOP), November 5, 2009.

13.1.16 Culver, Keith and Castle, David

Aquaculture, Innovation and Social Transformation, Springer Science+Business Media B.V., 2008.

13.2 **Sources of Referenced Publications**

The following addresses were valid at the date of publication.

13.2.1 The publications referred to in par. 2.1.1 may be obtained from the Canadian General Standards Board, Sales Centre, Gatineau, Canada K1A 1G6. Telephone 819-956-0425 or 1-800-665-2472. Fax 819-956-5740. E-mail ncr.cgsb-ongc@tpsgc-pwgsc.gc.ca. Web site www.tpsgc-pwgsc.gc.ca/ongc-cgsb/index-eng.html.

13. 3 **Sources of Related Publications**

The following addresses were valid at the date of publication.

13.3.1 The publications referred to in par. 13.1.1 may be viewed at canada.justice.gc.ca.

13.3.2 The publications referred to in par. 13.1.2 may be viewed at inspection.gc.ca.

13.3.3 The publication referred to in par. 13.1.3 may be obtained from the Canadian Organic Aquatic Producers Association, 21222 24th Avenue, Langley, British Columbia V2Z 2A8. E-mail bhicks@firstmate.com.

13.3.4 The publication referred to in par. 13.1.4 may be viewed at cartv.gouv.qc.ca.

13.3.5 The publications referred to in par. 13.1.5 may be viewed at canada.justice.gc.ca.

13.3.6 The publication referred to in par. 13.1.6 may be viewed at bio-gro.co.nz.

13.3.7 The publication referred to in par. 13.1.7 may be viewed at www.bio-suisse.ch.

13.3.8 The publications referred to in par. 13.1.8 may be viewed at www.codexalimentarius.net.

13.3.9 The publications referred to in par. 13.1.9 may be viewed at eur-lex.europa.eu/.

13.3.10 The publication referred to in par. 13.1.10 may be viewed at debio.no.

13.3.11 The publication referred to in par. 13.1.11 may be viewed at fao.org/docrep/005/v9878e/v9878e00.htm.

13.3.12 The publication referred to in par. 13.1.12 may be viewed at ifoam.org.

13.3.13 The publication referred to in par. 13.1.13 may be viewed at krav.se.

13.3.14 The publication referred to in par. 13.1.14 may be viewed at www.naturland.de.

13.3.15 The publications referred to in par. 13.1.15 may be viewed at ams.usda.gov/AMSv1.0/nop.

13.3.16 The publication referred to in par. 13.1.16 may be viewed at springer.com.

(This Appendix forms a mandatory part of the standard.)

MAXIMUM STOCKING DENSITY

A1. Maximum stocking density is provided for some species in particular production systems as indicated in table A1. Density requirements are quite variable depending on many factors such as production system (e.g. recirculation systems, type of water), species, production stage of the animal and water quality. Other stocking densities may be considered if they meet the requirements in par. 6.6.6.

Table A1 — Culture Densities for Grow-out Organic Production

Species	Fresh water ponds	Fresh water net pens	Fresh water flow through tanks	Fresh water re-circulation	Salt water ponds	Salt water net pens	Salt water flow through tanks	Salt water recircula-tion
Brown trout (*Salmo trutta)*			25 kg/m^3					
Rainbow trout *(Oncorhynchus mykiss)*			25 kg/m^3	60 kg/m^3		10 kg/m^3		40 kg/m^3
Brook trout *(Salvelinus fontinalis)*			15 kg/m^3					
Atlantic salmon *(Salmo salar)*			20 kg/m^3	60 kg/m^3		10 kg/m^3	40 kg/m^3	40 kg/m^3
Chinook salmon *(Oncorhynchus tshawytscha)*			20 kg/m^3	60 kg/m^3		10 kg/m^3	40 kg/m^3	40 kg/m^3
Coho salmon *(Oncorhynchus kisutch)*			30 kg/m^3	60 kg/m^3		10 kg/m^3	40 kg/m^3	40 kg/m^3
Arctic charr *(Salvelinus alpinus)*			140 kg/m^3	140 kg/m^3				
Arctic grayling *(Thymallus arcticus)*			15 kg/m^3					
Lake trout *(Salvelinus namaycush)*			15 kg/m^3					
Hunchen *(Hucho hucho)*			15 kg/m^3					
Turbot *(Psetta maxima [= Scophthalmus maximus])*						25 kg/m^3		
Cod *(Gadus morhua)* and other Gadidae						15 kg/m^3		

Species	Fresh water ponds	Fresh water net pens	Fresh water flow through tanks	Fresh water re-circulation	Salt water ponds	Salt water net pens	Salt water flow through tanks	Salt water recircula-tion
Sea bass *(Dicentrarchus labrax)*					4 kg/m^3	15 kg/m^3		
Gilthead bream *(Sparus aurata)*					4 kg/m^3	15 kg/m^3		
Croaker *(Argyrosomus regius)*					4 kg/m^3	15 kg/m^3		
Red porgy *(Pagrus pagrus [= Sparus pagrus])*						15 kg/m^3		
Red drum *(Sciaenops ocellatus)*						15 kg/m^3		
Sparidae and Spinefoot (*Siganus spp.*)						15 kg/m^3		
Mullets *(Liza, Mugil)*					4 kg/m^3			
Eel (*Anguilla spp.*)					4 kg/m^3			
Sturgeon (*Acipenser)*	0.15 kg/m^3	30 kg/m^3		100 kg/m^3				
Carp *(Cyprinidae)*	0.15 kg/m^3							
Perch, pike, catfish, coregonid fishes	0.15 kg/m^3							
Milkfish *(Chanos chanos)*	20 kg/m^3	20 kg/m^3						
Tilapia (*Oreochromis spp.*)	20 kg/m^3	20 kg/m^3		75 kg/m^3				
Basa (*Pangasius spp.*)	10 kg/m^3	10 kg/m^3						
Sablefish *(Anoplopoma fimbria)*						10 kg/m^3		

(This Appendix does not form a mandatory part of the standard.)

REQUIREMENTS FOR ADDING OR AMENDING SUBSTANCES IN THE PERMITTED SUBSTANCES LISTS

Note 1: *The criteria in this appendix do not apply to packaging materials, equipment surfaces, or other non-reactive substances. In creating and maintaining these lists, generic substances are not to be confused with brand name substances that may have added formulants, surfactants or wetting agents, the impact of which should be evaluated under a different process on a product-by-product basis.*

Note 2: *Substances permitted in par. 4.2 and 4.3 of CAN/CGSB-32.311,* Organic Production Systems — Permitted Substances Lists*, may be permitted in Aquaculture Plant Production. Substances permitted in par. 6.3 to 6.6 of CAN/CGSB-32.311,* Organic Production Systems — Permitted Substances Lists*, may be permitted in the processing of Aquaculture Products.*

B1. SUBSTANCE LIST REVIEW PROCEDURES

B1.1 Substances to be added to or deleted from the Permitted Substances Lists shall be evaluated for compliance with the criteria outlined in sections B2 to B5 inclusive.

B1.2 The system of review criteria detailed in this standard shall be the primary determinant for accepting or rejecting the addition of a substance to the Permitted Substances Lists.

B1.3 In evaluating substances for inclusion on the Permitted Substances Lists, all stakeholders shall have an opportunity to be involved.

B2. PERMITTED SUBSTANCE CRITERIA

B2.1 Substances included in the lists, with exceptions as noted, shall be consistent with

a. the general principles of organic aquaculture production as set out in the introduction to this standard, i.e.

   i. protect the environment, minimize benthic degradation and erosion and water quality degradation, decrease pollution, optimize biological productivity, and promote a sound state of health;

   ii. maintain long-term biological stability by optimizing conditions for biological diversity;

   iii. recycle materials and resources to the greatest extent possible within the enterprise;

   iv. provide attentive care that promotes the health and meets the behavioural needs of aquaculture animal;

   v. prepare organic products, emphasizing careful processing, and handling methods in order to maintain the organic integrity and vital qualities of the products at all stages of production;

b. the prohibitions set out in par. 1.4.1 of this standard.

B2.2 Each substance shall be reviewed concerning its necessity, origin and mode of production, and the impacts of its production and envisioned use. These criteria are intended to be evaluated as a whole in order to protect the integrity of organic production. Each review shall include a detailed description and all information that demonstrates conformance to sections B3, B4 and B5. All available alternatives, including substances and practices that may currently be in use in other production systems, shall be included in the evaluation.

B2.3 After a decision on inclusion of a substance in the Permitted Substances Lists has been made, any conditions governing its origin and usage shall be specified according to section B6.

B3. NECESSITY OF A SUBSTANCE

B3.1 **Amendments and Crop Nutrition** — Substances used as amendments or for crop nutrition and listed in par. 9.2 shall be necessary to fulfil specific requirements of crops that cannot be satisfied by the requirements and practices of this standard.

B3.2 **Crop Production Aids and Materials** — Substances used for the management of diseases, insects, weeds and other pests of seaweeds and plants and listed in par. 9.3 shall be necessary for that purpose and shall be included when no other adequate biological, physical or plant breeding alternatives or effective management practices are available.

B3.3 **Aquaculture Animal Production Substances**

B3.3.1 Substances used as aquaculture animal feed additives and supplements and listed in par. 10.2 shall be

a. necessary to correct documented essential nutrient deficiencies in the feed ration, given that other biological, cultural or physical treatments are not available; or

b. necessary for ensuring and preserving product quality, given that other biological, cultural or physical treatments are not available.

B3.3.2 Substances used as aquaculture animal health care products and production aids and listed in par. 10.3 shall be necessary to prevent or treat aquaculture animal health problems provided that other organic treatments are not available.

B3.4 **Food Ingredients and Processing Aids** — In the absence of other available technology or substances that satisfy this standard, substances added to, or used in, the processing, handling and storage of organic food products and listed in this standard shall be

a. necessary to correct documented essential nutrient deficiencies of the product (i.e. vitamins and minerals); or when required by regulations; or

b. essential for ensuring the safety of the product; or

c. used only when it is not feasible/practical to produce or store such products without having recourse to such ingredients and processing aids; or

d. necessary to achieve a technological effect during processing (e.g. filtration) or an organoleptic effect in the final product (e.g. colouring and flavouring) while respecting the principle in par. B2.1 a. v.

B3.5 **Cleaning, Disinfection and Pest Control Substances** — Substances used for cleaning and disinfecting production and processing equipment and facilities and for emergency pest control in such facilities that are listed in sections 11 and 12 shall be necessary and appropriate for the intended use.

B4. ORIGIN AND MODE OF PRODUCTION OF A SUBSTANCE

B4.1 **Amendments, Crop Nutrition and Crop Production Aids** — Substances used in crop production (par. 9.2 and 9.3) shall be of seaweed, plant, animal, microbial or mineral origin and may undergo the following processes during production:

a. Physical (e.g. mechanical or thermal)

b. Enzymatic

c. Microbial (e.g. composting, fermentation or digestion).

B4.1.1 Substances of seaweed, plant and animal origin shall be derived from crops, livestock and aquaculture animals produced in accordance with this standard or CAN/CGSB-32.310, *Organic Production Systems — General Principles and Management Standards*, unless such substances are not commercially available.

Exceptions: Substances produced by chemical processes or processes that chemically alter substances of seaweed, plant, animal, microbial or mineral origin (i.e. synthetic compounds) may be considered for inclusion in par. 9.2 or 9.3 if all of the following conditions are met:

a. They meet the criteria for necessity in section B3 and have an impact on the considerations in section B5.

b. Non-synthetic forms of these substances are not available in sufficient quality or quantity.

c. They are annotated and reviewed as required by sections B6 and B7.

B4.2 **Aquaculture Animal Production Substances**

B4.2.1 Substances of seaweed and plant origin used as or added to aquaculture animal feed (par. 10.2 of this standard) shall be obtained from organic sources in accordance with this standard or from sources occurring in nature such as for marine products. Substances of mineral origin shall only be used if they are of natural origin.

Exceptions: Synthetic substances may be included if they meet all of the following conditions:

a. They meet the criteria for necessity in section B3 and have an impact on the considerations in section B5.

b. Non-synthetic forms of these substances are not available in sufficient quality or quantity.

c. They are annotated and reviewed as required by sections B6 and B7.

B4.2.2 Substances used for aquaculture animal health care and production aids (par. 10.3 of this standard) shall be of organic or non-synthetic origin whenever possible. Synthetic substances may be included subject to the annotation and review requirements in sections 6 and 7.

B4.3 **Food Ingredients and Processing Aids** — Substances used as food ingredients or processing aids (as listed in par. 6.3 to 6.6 of CAN/CGSB-32.311, *Organic Production Systems — Permitted Substances Lists*) shall be found in nature and may have undergone the following processes during production:

a. Mechanical/physical (e.g. extraction, precipitation)

b. Enzymatic

c. Microbial (e.g. fermentation).

B4.3.1 Substances of plant and animal origin shall be derived from crops and livestock produced in accordance with CAN/CGSB-32.310 and CAN/CGSB-32.311 and from seaweeds, aquatic plants and aquaculture animals produced in accordance with this standard. Substances of microbial origin shall be obtained using organic substrate.

Exceptions: Substances that are not from organic sources or that have been chemically synthesized may be considered for inclusion under the following conditions:

a. They meet the criteria for necessity in section B3 and take into consideration the impacts described in section B5.

b. Organic sources or, as applicable, non-synthetic sources of these substances are not available in sufficient quality or quantity.

c. They are annotated and reviewed as required by sections B6 and B7.

B4.4 **Cleaning, Disinfection and Pest Control Substances** — Substances used for facility cleaning and disinfection and emergency pest control in such facilities (as listed in sections 11 and 12) may be of synthetic origin under the following conditions:

a. They meet the criteria for necessity in section B3 and take into consideration the impacts described in section B5.

b. Non-synthetic forms of these substances are not available in sufficient quality or quantity.

c. They are annotated and reviewed as required in sections B6 and B7.

B5. IMPACT OF A SUBSTANCE

B5.1 Consideration shall be given to the following impacts when evaluating a substance for inclusion in this standard.

B5.1.1 ***All Substances***

a. The impact of a substance's manufacture and disposal after use on the environment including impacts on ecology, surface and ground water, and soil and air quality including substance persistence, degradation and concentration effects.

b. The impact on equivalency and harmonization of this standard with standards and regulations of other jurisdictions.

B5.1.2 ***Substances Used in Aquaculture Seaweeds, Plant and Animal Production*** — The on-farm impact of the use and potential misuse of the substances listed in par. 9.2, 9.3, 10.2 and 10.3 on

a. benthic quality including biological diversity and activity, structure, salinity, sodicity, and erodability;

b. water quality;

c. ecosystems (in particular non-target organisms) including wildlife and wildlife habitat;

d. animal and human health, when applicable.

B5.1.3 ***Food Ingredients and Processing Aids*** — The impact of the use and potential misuse of the substances listed in this standard on

a. human health through both food and non-food exposure, including acute and chronic toxicity, allergenicity and metabolites;

b. product quality, including nutrition, flavour, taste, appearance and storage, when applicable;

c. consumer perception of the nature, substance and quality of a food product.

B6. ORIGIN AND USAGE ANNOTATION

B6.1 When applicable, the annotation accompanying a substance shall include

a. any restrictions concerning its origin and mode of production

b. any restrictions concerning its composition and usage.

B7. EXCEPTIONS

B7.1 All substances included on the Permitted Substances Lists under exception criteria shall be

a. identified as exceptions to the criteria

b. re-evaluated for compliance according to the procedures set out in section B1 each time this standard is subject to full review.

Note: *In accordance with the Canadian General Standards Board's policy, standards are subject to a full review every five years.*