

The draft of the Organic Aquaculture Standards that is currently submitted for the approval of the CGSB Committee on Organic Aquaculture (in the blue column), as compared with the National Standard of Canada - Organic Production Systems – CAN/CGSB-32.310 and Permitted Substances Lists CAN/CGSB-32.311 (in the green column). Please note that the Aquaculture standard is fully listed, the Agriculture standard sections corresponding to the content of the Aquaculture standard being reported “en vis-à-vis” in the green column.

## Section 6 – Animal Production

**Note :** Section 6 about water quality and environment is very descriptive in aquaculture, to prevent escapes, negative impacts on surroundings, on wild fish populations. The environment protection is not as much detailed in agriculture section of animal production.

### **Similar requirements:**

Origin and species: « shall come from organic sources »

Breeders not having been under continuous organic management cannot be organic for slaughter purposes

Artificial insemination is permitted; human intervention to extract gametes and fertilize eggs is permitted

If hormones are needed for spawning, broodstock treated with hormones lose organic status

No genetic engineering

Same principles apply to feed requirements; but main issue: *At the time of the original publication of the standard, insufficient supplies of organic fishmeal exist to satisfy the sector.*

Health and welfare: almost the same principles, worded with same identical sentences

No antibiotics to slaughter animals; otherwise, loss of organic status

Vaccines are allowed

Physical alterations are prohibited except when absolutely necessary

Homeopathic or similar products shall be used in preference to chemical allopathic veterinary drugs or antibiotics

Withdrawal periods equivalent to double the label requirement, or 14 days

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;

Stocking densities are prescribed

Transport and slaughter managed to minimize stress

AQUACULTURE OF ANIMALS - SECTION 6	AGRICULTURE – ANIMAL PRODUCTION SECTION 6
<p><b>6.1 Water Quality and Environment</b></p> <p>6.1.1 Operations shall be situated in locations where water is not subject to contamination by products or substances not authorised for organic production, or pollutants that would compromise the organic nature of the products.</p>	

<p>6.1.2 The operator shall detail the environmental effects of the operation, the environmental monitoring to be undertaken, and list measures to be taken to minimise 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 flora and fauna.</p> <p>6.1.3 Open water units shall be sited and managed, so that sediment build-up underneath the unit does not exceed the assimilation capacity at 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.</p> <p>6.1.4 Nutrient cycling through practices such as Integrated Multi-Trophic Aquaculture is encouraged.</p> <p>6.1.5 For aquaculture in fishponds, 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 which contribute to improving the quality of the effluent. Mechanical filters are permitted.</p> <p>6.1.6 Feed waste, manure and mortalities which have been collected shall be recycled.</p> <p>6.1.7 Retired equipment used from growing aquaculture animals shall be re-used or recycled where possible.</p>	
<p><b>6.2 Aquaculture Animal Species and Origins</b></p> <p>6.2.1 Aquaculture animals intended for organic production shall be taken from indigenous species or adapted to rearing conditions.</p> <p>6.2.2 Aquaculture animals that are introduced on a production unit shall come from organic sources.</p>	<p>6.2.2 Livestock used for organic livestock products shall</p> <ul style="list-style-type: none"> <li>a. be born or hatched on production units conforming to this standard;</li> <li>b. have been the offspring of parents raised under the conditions specified in this standard;</li> <li>c. be raised under this system throughout their life;</li> </ul>

<p>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 must be in compliance with all local regulations, and be in collaboration with government agencies, to assure that natural populations and the collected individuals are protected, and that biodiversity in the ecosystem is supported.</p> <p>6.2.4 Broodstock that has not been under continuous organic management shall never be organic for slaughter purposes. However, their offspring may be organic if they have been raised according to this standard.</p> <p>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 the biomass gain occurs under continuous organic management.</p>	<p>6.2.3 Animals purchased for breeding shall be from organic enterprises. By way of derogation, when it can be shown that suitable organic breeding stock are not available, non-gestating breeder animals and breeding males may be brought from a non-organic operation onto an organic operation and integrated into the organic system. However, the meat from such animals shall not be organic. Livestock from non-organic sources shall not be considered as organic breeding stock outside the organic operation if raised according to this standard for less than 12 months.</p> <p>6.2.4 All livestock or edible livestock products that are removed from an organic enterprise and subsequently managed on a non-organic enterprise shall not be considered as organically produced, in accordance with this standard.</p>
<p><b>6.3</b>            <b>Reproduction</b></p> <p>6.3.1            Cultivation methods shall allow natural methods of hatching or spawning with the following exceptions:</p> <p>                  a. The use of methods involving human intervention to extract gametes and fertilize eggs is permitted.</p> <p>                  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.</p> <p>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.</p>	<p><b>6.5 Breeding</b> — Breeding methods shall conform to the principles of organic production in this standard. The operator shall</p> <p>a. select breeds and types of livestock that are suitable for site-specific conditions within the local environment and production system and that are resistant to prevalent diseases and parasites;</p> <p>b. use natural methods of reproduction; however, artificial insemination is permitted;</p> <p><b>6.5 Breeding</b> — Breeding methods shall conform to the principles of organic production in this standard. The operator shall a. select breeds and types of livestock that are suitable for site-specific conditions within the local environment and production system and that are resistant to prevalent diseases and parasites;</p>

<p>6.3.3 Techniques using genetic engineering are prohibited.</p>	<p>b. use natural methods of reproduction; however, artificial insemination is permitted;  c. not use embryo transfer techniques or breeding techniques using genetic engineering or related technology;  d. not use reproductive hormones to trigger and synchronize estrus.</p>
<p><b>6.4 Feed and Feeding</b></p> <p>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.</p> <p>6.4.2 Fish meal and fish oil derived from aquatic animals and other feed sources shall be organic, when commercially available.</p> <p>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.  <i>Note: see Implementation of the 1995 FAO Code of Conduct for Responsible Fisheries.</i></p> <p>6.4.4 When non-organic feed sources are used, they shall not exceed 80% of the Maximum Residue Limits (MRL) for toxic materials.   <i>Note: In Canada, the Maximum Residue Limits are issued by the CFIA.</i>  <i>Note It is the intention to develop these supplies and to revise the standard in 5 years with the goal of eliminating non-organic feed supplies.</i></p> <p>6.4.5 Feed shall only be offered in a way that minimizes loss of feed to the environment.</p> <p><u>6.4.6 Reserved due to numeric formatting only to show continuity of previous version. Would be removed in final numeration of document.</u></p> <p>6.4.7 Feed, feed additives and feed supplements listed in table 10.2 may be used in organic aquaculture.</p>	<p><b>6.4.1</b> The operator of an organic livestock operation shall provide livestock with a feed ration balanced to meet their nutritional requirements and consisting of feedstuffs produced in accordance with this standard.</p> <p><b>6.4.2</b> Livestock feed shall consist of substances that are necessary and essential for maintaining the animals' health, well-being and vitality and that meet the physiological and behavioural needs of the species in question.</p>

<p>6.4.8 Pigments from organic sources may be added to the feed. When organic sources are not commercially available, only non-synthetic pigments may be used.</p> <p>6.4.9 The following shall not be fed:</p> <ul style="list-style-type: none"> <li>a. Urea, antibiotic and hormones used to promote growth and synthetic growth agents;</li> <li>b. silage preservation products except for products listed in table 10.2;</li> <li>c. synthetic appetite-enhancers or synthetic flavour-enhancers;</li> <li>d. synthetic colouring-agents.</li> </ul>	<p><b>6.4.4</b> The operator of an organic operation shall not provide organic livestock with</p> <ul style="list-style-type: none"> <li>a. feed and feed additives, including amino acids and feed supplements that contain substances not in accordance with CAN/CGSB-32.311, <i>Organic Production Systems — Permitted Substances Lists</i>;</li> <li>b. feed medications or veterinary drugs, including hormones and prophylactic antibiotics, to promote growth;</li> <li>c. approved feed supplements or additives used in amounts above those required for adequate nutrition and health maintenance for the species at its specific stage of life;</li> <li>d. feeds chemically extracted or defatted with substances prohibited by par. 1.4.1;</li> <li>e. feed that contains mammalian or avian slaughter by-products;</li> <li>f. feed that contains synthetic preservation agents;</li> <li>g. silage preservation products except for products listed in CAN/CGSB-32.311, <i>Organic Production Systems— Permitted Substances Lists</i>;</li> <li>h. synthetic appetite-enhancers or synthetic flavour-enhancers;</li> <li>i. feed formulas containing manure or other animal waste;</li> <li>j. feed that contains synthetic colouring-agents.</li> </ul>
<p><b>6.5 Health and Welfare</b></p> <p>6.5.1 Aquaculture facilities shall be designed, operated and managed in a manner that seeks to maximize the welfare and minimize the stress of aquaculture animals, and minimizes the spread of disease within the facility, and to all adjoining ecosystems and native fish species.</p> <p>When net pen systems are used producers must implement measures to minimize transmission of diseases and parasites between cultured and wild aquatic animals and must site net pens in such a manner as to minimize contamination and disease from conventional fish pens or native fish populations taking into account factors like current and seasonal changes.</p> <p>6.5.2 Management shall be based on the five following domains of welfare:</p>	<p>6.7.1 The operator shall establish and maintain preventive livestock health care practices, including</p> <ul style="list-style-type: none"> <li>a. the choice of appropriate breeds or strains of animals, as specified in par. 6.2.1;</li> </ul>

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

6.5.3 Holding systems, equipment and utensils shall be properly cleaned according to a defined protocol. Only products listed in table 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 6.5.2.

6.5.6 There shall be hygienic routines and routine examinations shall be carried out 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.

- b. the provision of a feed ration sufficient to meet nutritional requirements, including vitamins, minerals, protein, fatty acids, energy sources and fibre (ruminants), in accordance with this standard;
- c. the establishment of appropriate housing, pasture conditions, space allowance and sanitation practices, to minimize crowding and the occurrence and spread of diseases and parasites;
- d. the provision of prompt treatment for animals with detectable disease, lesions, lameness, injury and other physical ailments;
- e. the provision of conditions that allow for exercise, freedom of movement, and a reduction in stress appropriate to the species;

**6.8.4** Housing, pens, runs, equipment and utensils shall be properly cleaned and disinfected to prevent cross infection and build-up of disease-carrying organisms.

<p>6.5.7 Vaccinations are permitted. Prophylactic treatment with other synthetic veterinary drugs is prohibited.</p> <p>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.</p> <p>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.</p> <p>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.</p> <p>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.</p> <p>6.5.12 The use of veterinary medicinal substances in organic production systems shall conform to the following:</p> <ul style="list-style-type: none"> <li>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.</li> <li>b. Phytotherapeutic (i.e. algal, herbal or botanical substances</li> </ul>	<p><b>6.7.1 f.</b> the administration of vaccines in accordance with this standard when it has been documented that the targeted diseases are communicable to livestock on the enterprise and cannot be combatted by other means.</p> <p><b>6.7.2</b> Physical alterations are prohibited except when absolutely necessary to improve the health, welfare or hygiene of 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, sedatives and non-steroid anti-inflammatory analgesics (e.g. ketoprofen).</p> <p><b>6.7.3</b> 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 CAN/CGSB-32.311, <i>Organic Production Systems — Permitted Substances Lists</i>.</p> <p><b>6.7.4</b> Medical treatment for sick or injured livestock shall not be withheld to preserve their organic status. All appropriate medications shall be used to restore livestock to health when methods acceptable to organic production fail. Shipping of diseased livestock to slaughter for human consumption is prohibited. Sick and medicated animals shall be quarantined from healthy livestock.</p> <p><b>6.7.5</b> Products from sick animals or those undergoing treatment with restricted substances shall not be organic or fed to organic livestock</p> <p><b>6.7.6</b> The use of veterinary medicinal substances in organic production systems shall conform to the following:</p> <ul style="list-style-type: none"> <li>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 allowed, in accordance with this standard, or are required by law.</li> <li>b. Phytotherapeutic (i.e. herbal or botanical substances excluding antibiotics), homeopathic or similar products shall be used in preference to chemical</li> </ul>
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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, 6.5.14d 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 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.

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. 6.7.6 a. and b. is unlikely to be effective in combatting illness or injury, chemical allopathic drugs (not listed in CAN/CGSB-32.311, *Organic Production Systems — Permitted Substances Lists*) may be administered under veterinary supervision. Some restrictions apply when meat animals are treated (see par. 6.7.7, 6.7.8 e. and 6.7.9).
- d. When veterinary drugs other than those with specific requirements listed in this standard or CAN/CGSB-32.311, *Organic Production Systems — Permitted Substances Lists*, are used, a withholding period equivalent to double the label requirement or 14 days, whichever is longer, shall be observed before the products from treated livestock can be considered organic.
- e. Antibiotic treatment of dairy animals is permitted in emergencies under the following conditions:
  - i. The operator shall have written instructions from a veterinarian indicating the product and the treatment method used.
  - ii. Such treatment shall result in a milk withdrawal time of at least 30 days or two times the specific medication's withdrawal period, whichever is longer.
  - iii. Antibiotic use shall be documented in herd health records.
  - iv. Dairy animals shall undergo only two treatments (of combined parasiticides and antibiotics) per year. Dairy animals that require more than two treatments



<p>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.</p> <p>6.5.14 The operator of an organic aquaculture animal operation shall not administer:</p> <ul style="list-style-type: none"> <li>a. synthetic compounds to stimulate or retard growth or production, including hormones for growth promotion;</li> <li>b. synthetic parasiticides to slaughter aquaculture animals, except as provided in par. 6.5.15;</li> <li>c. antibiotics to slaughter aquaculture animals;</li> <li>d. chemical allopathic veterinary drugs (e.g. pharmaceuticals, antibiotics, hormones and steroids) for preventive treatments.</li> </ul> <p>6.5.15 Organic aquaculture operations shall have a comprehensive plan to minimize parasite problems in aquaculture animals.</p> <ul style="list-style-type: none"> <li>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.</li> <li>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</li> </ul>	<p>shall undergo a 12-month transition period.</p> <p>v. Dairy animals with chronic conditions requiring repeated use of this practice shall be removed from the herd.</p> <p><b>6.7.7</b> Hormonal treatment shall only be used for therapeutic reasons and under veterinary supervision. The meat from animals so treated shall not be organic meat unless the treatment is permitted by CAN/CGSB-32.311, <i>Organic Production Systems — Permitted Substances Lists</i>.</p> <p><b>6.7.8</b> The operator of an organic livestock operation shall not administer</p> <ul style="list-style-type: none"> <li>a. veterinary drugs, other than vaccines, in the absence of illness, with the exception of anaesthetics and analgesics used in permitted physical alterations;</li> <li>b. synthetic compounds to stimulate or retard growth or production, including hormones for growth promotion;</li> <li>c. synthetic parasiticides to meat animals, except as provided in par. 6.7.9;</li> <li>d. antibiotics to meat animals and birds for egg production;</li> <li>e. chemical allopathic veterinary drugs (e.g. pharmaceuticals, antibiotics, hormones and steroids) for preventive treatments.</li> </ul> <p><b>6.7.9</b> Organic livestock operations shall have a comprehensive plan to minimize parasite problems in livestock.</p> <ul style="list-style-type: none"> <li>a. The plan will include preventive measures such as pasture management and fecal monitoring, as well as emergency measures in the event of a parasite outbreak.</li> <li>b. By way of derogation, when preventive measures fail (because of climatic conditions or other uncontrollable factors), the operator may use parasiticides not listed in CAN/CGSB-32.311, <i>Organic Production Systems — Permitted Substances Lists</i>, provided that</li> </ul>
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<ul style="list-style-type: none"> <li>i. observation of the animal, as appropriate for the species, indicate the aquaculture animals are infected with parasites;</li> <li>ii. the operator has received written instructions from a veterinarian indicating the product and method for parasite control that shall be used;</li> <li>iii. withdrawal times shall be twice the legal requirement or 14 days whichever is longer;</li> <li>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;</li> <li>v. the operator shall provide a written action plan (including timing), describing how they will amend their parasite control plan, to avoid similar emergencies.</li> </ul> <p>6.5.16 Treated stock shall be clearly identifiable.</p>	<ul style="list-style-type: none"> <li>i. observation of the animal or fecal samples, as appropriate for the species, indicate the livestock is infected with parasites;</li> <li>ii. the operator has received written instructions from a veterinarian indicating the product and method for parasite control that shall be used;</li> <li>iii. withdrawal times shall be twice the label requirement or 14 days whichever is longer;</li> <li>iv. there shall be only one treatment for slaughter animals under a year old and a maximum of two treatments for older slaughter animals. Slaughter animals that require further treatment will lose organic status;</li> <li>v. dairy animals requiring more than two treatments per year (of combined antibiotics and parasiticides) will lose organic status and shall go through a 12-month transition. These dairy animals shall never be organic for slaughter purposes;</li> <li>vi. under this derogation, a dam may be treated during gestation;</li> <li>vii. treatment of a poultry flock is allowed. Laying hens requiring more than one treatment of parasiticides per 12 month period will lose organic status;</li> <li>viii. the operator shall provide a written action plan (including timing), describing how they will amend their parasite control plan, to avoid similar emergencies.</li> </ul>
<p><b>6.6 Cultivation Conditions</b></p> <p>6.6.1 Cultivation conditions shall promote health and welfare as specified in par. 6.5.2.</p> <p>6.6.2 Cultivation shall occur within a secure and well-managed production system where controls are in place to prevent</p>	<p><b>6.8.1</b> The operator of an organic livestock operation shall establish and maintain animal living-conditions that accommodate the health and natural behaviour of all animals...</p>

breaches of containment. A contingency plan for all units shall describe how escapes can be limited 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 must immediately be reported to the certification body as well as 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

6.8.11.8 Natural light shall be provided indoors for all poultry. If day length is artificially prolonged, the total duration of light shall not exceed 16 hours and shall be terminated by gradual reduction of light intensity.

6.8.8 **Cattle** — The minimum indoor and outdoor space requirements for cattle are as follows:...

6.8.9 **Sheep and Goats** — The minimum indoor and outdoor space requirements for sheep and goats are as follows:...

6.8.11.9 The maximum indoor and outdoor densities for poultry are as follows:

6.8.12.2 The minimum indoor and outdoor space requirements for rabbits are as follows:

6.8.13.9 The minimum indoor and outdoor space requirements for sows and piglets are as follows:

6.8.11.1 d. Operators shall have an organic plan for their poultry operation that describes outdoor access and how they will protect birds from disease and predators.

<p>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.</p> <p>6.6.7.2 Non-lethal deterrents shall be used as a first course of action.</p> <p>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.</p> <p>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.</p>	
<p><b>6.7 Antifouling measures and cleaning of production equipment and facilities</b></p> <p>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 table 10.3 or table 12.</p> <p>6.7.2 Cleaning of equipment and facilities shall be carried out by physical or mechanical measures. Where this is not satisfactory, only substances as listed in table 12 may be used.</p>	<p><b>6.10 Pest Management</b> — Pest management shall involve in descending order of preference</p> <ul style="list-style-type: none"> <li>a. preventive methods;</li> <li>b. mechanical, physical and biological control methods;</li> <li>c. the use of pesticides included in CAN/CGSB-32.311, <i>Organic Production Systems — Permitted Substances</i></li> </ul>
<p><b>AQUACULTURE OF ANIMALS</b></p> <p><b>6.8 Harvesting, Transporting Live Aquaculture Animals and Slaughtering</b></p> <p>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.</p> <p>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),</p>	<p><b>6.6.1</b> Livestock shall be managed responsibly with care and respect. Stress shall be minimized in all handling practices. <i>Note: In Canada, see also the Health of Animals Regulations under the Health of Animals Act (Canadian Food Inspection Agency).</i></p> <p><b>6.6.3</b> The animals shall have suitable shelter against inclement weather conditions (e.g. wind, rain, excessive heat and cold) during transportation and before slaughter.</p>

<p>and population densities shall meet the aquaculture animal welfare requirements with special considerations being given to aquaculture animals that are transported live to market and for slaughter.</p> <p>6.8.3 The use of tranquillizing chemicals, paralyzing toxins and carbon dioxide is prohibited.</p> <p>6.8.4 Slaughtering shall minimize pre-slaughter and slaughter stress.</p> <p>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.</p> <p>6.8.6 Aquaculture vertebrate animals shall not be slaughtered in ponds, cages or tanks where other aquaculture animals are living.</p> <p>6.8.7 Aquaculture vertebrate animals shall not be slaughtered by suffocation.</p> <p>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.</p> <p><i>6.9 Reserved due to numeric formatting only to show continuity of previous version. Would be removed in final numeration of document.</i></p>	<p><b>6.6.2</b> The transport and slaughter of livestock shall be managed to minimize stress, injury and suffering. The use of electrical stimulation or allopathic tranquilizers is prohibited.</p>
<p><b>6.10 Specific Requirements for Aquatic Invertebrates Production</b></p> <p><b>6.10.1 Water Quality and Environment</b></p> <p>6.10.1.1 In addition to the requirements in section 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 invertebrates production.</p>	

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

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

6.10.1.3 In the event of a closure ordered by a local authority for environmental reasons and bio-toxin 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 6.10.1.1 are satisfied.

#### **6.10.2 Sourcing of Seed**

6.10.2.1 Where applicable, requirements in sections 6.2 and 6.3 apply.

6.10.2.2 Except as provided in par. 6.10.2.3, larvae or spat shall come from organic sources.

6.10.2.3 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 only if it has achieved 95% of its biomass gain under organic management.

6.10.2.4 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;
- d. Minimize overset of wild seed, when possible.

#### **6.10.3 Setting Larvae**

6.10.3.1 The use of epinephrine to expedite setting is prohibited.

#### **6.10.4 Collection of Wild Spat**

6.10.4.1 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 must be removed from the area as required by the local authority.*

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

### **6.10.5 Feed and Feeding**

6.10.5.1 Where applicable, requirements in section 6.4 apply.

6.10.5.2 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.

6.10.5.3 In hatcheries and recirculation systems, feed supplied to aquatic invertebrates shall be compliant with this standard.

### **6.10.6 Health and Welfare**

6.10.6.1 Where applicable, requirements in section 6.5 apply.

### **6.10.7 Cultivation Conditions**

6.10.7.1 Requirements in section 6.6 apply except requirements in par. 6.6.2.

#### **6.10.7.2 Cultch (setting substrate)**

6.10.7.2.1 The following material are prohibited as setting substrate:

- a. Tires
- b. PVC French tubes that have not been weathered

6.10.7.2.2 Cultch disinfection is permitted, providing the substances used are permitted by table 12.

**6.10.7.3 Aquatic invertebrate density**

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

6.10.7.3.2 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.

**6.10.7.4 Predator and Pest Control**

6.10.7.4.1 Requirements in par. 6.6.7 and 6.6.7.1 apply.

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

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

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

6.10.7.4.5 The following materials and methods are permitted in pest control

- a. Physical barriers (e.g. clam netting, vertical predator fences, traps, and natural bait as attractant to traps)
- b. Manual removal
- c. Water high-pressure washing
- d. Dehydration through exposure to air and sun
- e. Hot water treatment
- f. Substances permitted in table 10.3
- g. Dips with substances permitted in table 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

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

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

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

6.10.7.4.9 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

## **6.10.8 Waste Management**

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

6.10.8.2 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.

6.10.8.3 The use of Styrofoam as flotation device is prohibited for new installations or replacement purposes.

## **6.10.9 Access, Private Property Rights and Riparian Rights**

6.10.9.1 Farm sites shall be well marked.

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