

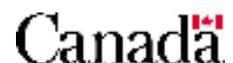
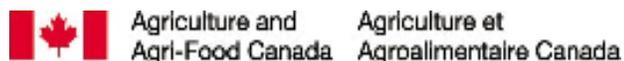
# **A Guide to Understanding the Canadian Organic Standards**

## **General Principles and Management Standards**

Prepared by **Canadian Organic Growers**

January 2010

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## Foreword

This guidance document is designed to help all organic operators, certifying bodies (CBs), and certifying body inspectors across Canada to comply with the **Canadian Organic Standards**, and to assist certifying bodies to verify that compliance. The standards become law throughout Canada on June 30, 2009 and are comprised of the **General Principles and Management Standards** (CAN/CGSB-32.310-2006) and the **Permitted Substances Lists** (CAN/CGSB-32.311-2006) of the Organic Production Systems. If those involved in the certification process follows uniform practices, this will lead to greater consumer protection.

The **General Principles and Management Standards** and the accompanying **Permitted Substances Lists** are two separate **National Standards of Canada**. They are owned by the **Canadian General Standards Board (CGSB)** but are maintained through a consensus process involving representatives of producers, regulators, general interest groups, and users<sup>1</sup>. The standards' official status means that they can be referenced in the **Organic Products Regulations**. The Canadian organic sector is unique in the world in that it has control over the content of standards that are part of national law.

The organic community is used to organic standards having many paragraphs referring to certifying bodies allowing this or that practice or material. However, by international agreement, **National Standards of Canada** are prohibited from containing regulatory references – they must be stand-alone documents. All regulatory requirements under the **Canada Organic Regime**<sup>2</sup> are contained in the **Organic Products Regulations** (which oversee organic labelling requirements), and the **Canada Organic Office (COO) Quality Management Systems Manual**, but these are not readily available to most organic operators.

Therefore, in this nonregulatory guidance document, Canadian Organic Growers interprets the standards and includes necessary certification information. In this document, “**standard**” refers to CAN/CGSB-32.310-2006 or CAN/CGSB-32.311-2006, “**section**” refers to the whole numbered parts of the standards (1,2,3, etc.), “**paragraph**” refers to subsections (5.2, 5.2.3, etc.), and “**passage**” refers to parts of paragraphs.

## Disclaimer

This is a document developed voluntarily by the Canadian organic sector. It is not an official part of the **Canada Organic Regime**. The views and opinions expressed in this document are those of the authors and not of the competent authority (the Canadian Food Inspection Agency). Persons using this document are cautioned that the interpretations presented here may not be those of the entire organic certification system, nor of the competent authority.

Every attempt has been made to develop an authoritative work that respects the principles of organics and follows international procedures. However, interpretation is subjective by nature – if someone feels one way about something, there is bound to be someone who feels the opposite way. In the end, users of this document must bear ultimate responsibility for their own decisions on their operation.

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<sup>1</sup> All amendments to the Canadian Organic Standards are presented for a period of public comment before adopted. If you are interested in proposing amendments to the Canada Standard or the Permitted Substances List, submissions may be made to the Canadian General Standards Board.

<sup>2</sup> The Canadian Organic Regime refers to the regulatory system for organic in Canada—managed by the Canadian Food Inspection Agency (CFIA).

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## Organic Production Systems General Principles and Management Standards (CAN/CGSB-32.310-2006, Amended October 2008)

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<p><b>INTRODUCTION (INFORMATIVE)</b></p> <p><i>I. Description</i></p> <p>Organic production is a holistic system designed to optimize the productivity and fitness of diverse communities within the agro-ecosystem, including soil organisms, plants, livestock and people. The principal goal of organic production is to develop enterprises that are sustainable and harmonious with the environment.</p> <p>CAN/CGSB-32.310, <i>Organic Production Systems – General Principles and Management Standards</i>, describes the principles and management standards of organic production systems.</p> <p>CAN/CGSB-32.311, <i>Organic Production Systems – Permitted Substances Lists</i>, provides lists of substances that are allowed for use in organic production systems.</p> <p>As in the case of all products sold in Canada, organic inputs, such as, but not limited to, fertilizers, feed supplements, pesticides, soil amendments, veterinary treatments, processing additives or aids, sanitizing and cleaning material; and products derived from organic agriculture, such as, but not limited to, feed and food should comply with all applicable regulatory requirements.</p>	<p>This <b>introduction</b> section of the standards is what the Canadian General Standards Board (CGSB) refers to as ‘<b>informative</b>’, meaning that it is for information purposes only and does not describe aspects of organic management required by certifying bodies. However, the introduction does describe the principles of organic production that are the foundation for the regulatory requirements in the main body of the standards. For this reason, certifying bodies and others who are trying to determine the intent of a particular paragraph should always refer to the introduction.</p> <p>This statement is a reminder to organic operators that they are required to follow all applicable laws. All official Canadian standards follow a similar format—such statements are standard practice.</p>
<p><i>II. General Principles of Organic Production</i></p> <p>Organic 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.</p> <p>The general principles of organic production include the following:</p> <ol style="list-style-type: none"> <li>1. Protect the environment, minimize soil degradation and erosion, decrease pollution, optimize biological productivity and promote a sound state of health.</li> <li>2. Maintain long-term soil fertility by optimizing conditions for biological activity within the soil.</li> <li>3. Maintain biological diversity within the system.</li> <li>4. Recycle materials and resources to the greatest extent possible within the enterprise.</li> <li>5. Provide attentive care that promotes the health and meets the behavioural needs of livestock.</li> <li>6. Prepare organic products, emphasizing careful processing, and handling methods in order to maintain</li> </ol>	<p>The principles are similar to the IFOAM Organic Principles and those found in the Codex Alimentarius “Guidelines for the Production, Processing, Labelling and Marketing of Organically Produced Foods”. They are the result of many years of applied research and anecdotal evidence (farmers observing their environment and thinking about their place within it), scientific research (though chronically underfunded and thus inadequate), and vigorous and unrelenting discourse within the organic movement. It is understood that the principles are a high ideal that the organic movement strives towards, and these change little. By contrast, the standards change continually as the organic movement discovers new ways to bring them closer to the principles. The difficult task of standards writers is to remain true to the principles of organic farming while being pragmatic regarding the production of quality organic food. Organic standards are written according to how close participants can come to the principles, and not in response to market demand. The organic movement is</p>

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<p>the organic integrity and vital qualities of the products at all stages of production.</p> <p>7. Rely on renewable resources in locally organized agricultural systems.</p>	<p>continually seeking new ways to help organic operators comply with the principles themselves, and does not seek to adjust its standards to subscribe to or to compete with marketing categories such as ‘sustainable’ or ‘natural’.</p>
<p><b>III. Organic Practices</b></p> <p>Neither this standard [CAN/CGSB-32.310-2006] nor organic products in accordance with this standard represent specific claims about the health, safety and nutrition of such organic products.</p> <p>Management methods are carefully selected in order to restore and then sustain ecological stability within the enterprise and the surrounding environment. Soil fertility is maintained and enhanced by promoting optimal biological activity within the soil and conservation of soil resources. Weeds, pests and diseases are managed using biological and mechanical control methods, and cultural practices, including minimized tillage. Crop selection and rotation are important for managing nutrient cycling, recycling of plant and animal residues, water management, augmentation of beneficial insects to encourage a balanced predator–prey relationship, and the promotion of biological diversity, and ecologically based pest management.</p> <p>Under a system of organic production, livestock 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.</p> <p>Organic products are produced and processed under a system that strives to preserve the integrity of the principles in this standard.</p> <p>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.</p> <p>In the development of the standard, it was recognized that differences between Canada’s agricultural regions require varying practices to meet production needs.</p>	<p>This statement affirms the current labelling laws. Organic standards are about a specific set of production rules – they do not provide for any claims about the health, safety or nutrition of organic products.</p> <p>This paragraph provides some general information regarding the management methods organic farmers employ to achieve environmental benefits.</p> <p>This paragraph is an expansion of the general principles as appropriate for livestock.</p> <p>Organic processing is required to maintain the organic integrity of the ingredients inside a multi-ingredient product. Single-ingredient processing is required to maintain the organic integrity of the product through its transformation into a consumer product.</p> <p>This paragraph provides guidance to both users of the standard and consumers of organic products. It states that there is pollution in our environment that is beyond the control of the individual farmer and that unintended contamination is a possible consequence. Consumers of organic products want assurance that those products are free of prohibited substances. The best assurance that the Canadian organic movement can provide is that organic products have been produced according to strict standards (designed to avoid contamination) and that the system of verification (certification) is set in law. The standards do not require residue testing<sup>3</sup> and no contamination threshold has been established in Canada beyond those</p>

<sup>3</sup> See Appendix A for guidance regarding residue testing

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<p>This standard is intended for certification and regulation to prevent deceptive practices in the marketplace. The certification of a process, rather than a final product, demands responsible action by all involved parties.</p>	<p>established for food in general.</p> <p>This paragraph, derived from the Codex Alimentarius <i>Guidelines for the Production, Processing, Labelling and Marketing of Organically Produced Foods</i>, reinforces the differences between the certification of a product and that of a process. A product can be certified individually through a simple inspection procedure. The certification of an organic process requires cooperation throughout the supply chain to confirm the audit trail, even from those who are not required to be certified (e.g. brokers, distributors, retailers, restaurants). In practice, organic certification refers to both process and product certification. For instance, a farm (or a portion of it) can be ‘certified organic’ for the production of certain organic vegetables. In practice, both the farm and the products of the farm referred to in the certification are considered ‘certified organic’.</p>
<p><b>1. SCOPE</b></p> <p><b>1.1</b> Foods and other agricultural products shall refer to organic production methods only if they come from a farm system employing management practices that seek to nurture ecosystems in order to achieve sustainable productivity; and that provide weed, pest and disease control through enhancement of biodiversity, recycling of plant and animal residues, crop selection and rotation, water management, tillage and cultivation.</p>	<p>The following (numbered) sections of the standards are normative requirements (that is, they are enforceable by certifying bodies).</p> <p>The term <b>scope</b> refers to those products or processes which can be certified under these standards. This paragraph says that you must follow organic practices in order to call your product organic.</p>
<p><b>1.2</b> This standard applies to the following products:</p> <p>a. unprocessed plants and plant products, livestock and livestock products, to the extent that the principles of production and specific verification rules for them are described in the standard</p>	<p>Paragraph 1.2 provides the details of what can be certified under the Canada Organic Regime.</p> <p>a. Only <b>primary</b> (unprocessed) organic products that have specific production rules included in the standard may be certified under the Canada Organic Regime. The standards include specific production rules for the following primary (unprocessed) products:</p> <ul style="list-style-type: none"> <li>• Agricultural crops (anything grown/cultivated in the soil – this includes field crops, vegetables, flowers, shrubs and nursery plants)</li> <li>• Livestock (herbivores, poultry, swine and wild livestock if raised in a farm setting – not hunted)</li> <li>• Apiculture (including all products produced by bees)</li> <li>• Maple products</li> <li>• Mushrooms</li> <li>• Sprouts</li> <li>• Greenhouse crops</li> <li>• Wild crops (does not include animal species)</li> </ul> <p>Organic <b>aquaculture</b> cannot be certified under the Canada Organic Regime at this time because aquaculture is not included in the <i>Canada Agricultural Products Act</i> (the parent legislation for the <i>Organic Products Regulation</i>). However, the Canadian Food Inspection Agency is working with the organic aquaculture industry to find a way to include aquaculture in the standards.</p>

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<ul style="list-style-type: none"> <li>b. processed agricultural crop and livestock products intended for human consumption or use derived from the items mentioned in par. 1.2 a.</li> <li>c. livestock feed</li> <li>d. processed agricultural crop and livestock products intended for animal consumption or use and derived from the items mentioned in par. 1.2 a.</li> </ul>	<p>Organic <b>cosmetics, textiles, and forestry</b> products are specifically excluded from the <i>Organic Products Regulations</i>. Organic claims for such products (e.g. organic shampoo, organic cotton underwear, and organic pine rocking chairs) are subject to the <i>Consumer Packaging and Labelling Act</i> (truth in advertising legislation).</p> <ul style="list-style-type: none"> <li>b. The standards cover all organic <b>processed</b> products that are derived from the primary products mentioned in Passage ‘a’. Passage ‘b’ refers specifically to processed human food.</li> <li>d. Organic crop and livestock products that are processed into products for animal consumption (feed) may be certified under the Canada Organic Regime. This includes pet food, which will soon be under the jurisdiction of the Canadian Food Inspection Agency.</li> </ul>
<p><b>1.3</b> Quantities and dimensions in this standard are given in metric units with yard/pound equivalents, mostly obtained through soft conversion, given in parentheses. The metric units shall be regarded as official in the event of dispute or unforeseen difficulty arising from the conversion.</p>	
<p><b>1.4 Prohibited Substances, Methods or Ingredients in Organic Production and Handling</b></p> <p><b>1.4.1</b> When producing or handling organic products, it is forbidden to use any of the following substances or techniques:</p> <ul style="list-style-type: none"> <li>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</li> <li>b. synthetic pesticides (e.g. defoliant and desiccants, fungicides, insecticides and rodenticides), wood preservatives (e.g. arsenate) or other pesticides, except as specified in CAN/CGSB-32.311, <i>Organic Production Systems – Permitted Substances Lists</i></li> <li>c. fertilizer or composted plant and animal material that contains a substance prohibited by par. 1.4.1 (and not included in CAN/CGSB-32.311, <i>Organic Production</i></li> </ul>	<p>Paragraph 1.4.1 is referenced throughout the standards. It describes prohibited practices and materials.</p> <ul style="list-style-type: none"> <li>a. This refers to the ‘products of genetic engineering’ rather than the more commonly used ‘GMO’ (genetically modified organism) because there is an official definition for ‘genetic engineering’ (GE) (see CAN/CGSB 32.15-2004), but none for ‘GMO’. The paragraph does not provide threshold or testing limits for the presence of products of genetic engineering in organic products. It should not be assumed that the absence of testing limits infers that organic products must be guaranteed free (via testing) of products of genetic engineering in order to be certified organic. See Appendix A for detailed guidance regarding residue testing.</li> <li>b. This includes all synthetic pesticides except those approved for use in the Permitted Substances Lists (PSL) (CAN/CGSB-32.311-2006). Pest control products approved for use are ones which are less harmful to the environment (than the alternatives) and have less (or no) toxic residues. For a review of the vetting of permitted substances, see Section 10. Operators should ensure that any wood preservatives used in their organic operation (including treated fence posts) are included in the PSL.</li> <li>c. Fertilizer and compost cannot contain any products prohibited by Paragraph 1.4.1, and may only contain those substances listed in the PSL. Some fertilizers use the word ‘organic’ to describe the nature of the</li> </ul>

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<p><i>Systems – Permitted Substances Lists</i>)</p> <p>d. sewage sludge, in any form, as defined in this standard, as a soil amendment</p> <p>e. synthetic growth regulators</p> <p>f. synthetic allopathic veterinary drugs, including antibiotics and parasiticides, except as specified in this standard</p> <p>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, <i>Organic Production Systems – Permitted Substances Lists</i>.</p> <p>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, <i>Organic Production Systems – Permitted Substances Lists</i>.</p> <p>i. equipment, packaging materials and storage containers, or bins that contain a synthetic fungicide, preservative or fumigant</p> <p>j. substances that are not included in CAN/CGSB-32.311, <i>Organic Production Systems – Permitted Substances Lists</i>, except as provided by this standard</p> <p>k. cloned farm animals and their descendants. A producer shall know the lineage of any non-organic animal brought under organic management.</p> <p>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</p>	<p>soil or material used, but are not intended to meet the organic standard. These should not be used in the production of organic products under these standards. Operators should ensure that any product they use are composed entirely of substances listed in the PSL.</p> <p>d. See Section 3 for the definition of ‘sewage sludge’.</p> <p>e. This include all formulations of the propagation hormone IBA (Indole-3-butyric acid), as well as the growth regulator NAA (1-Naphthaleneacetic acid), among others. There are nonsynthetic growth regulators that are allowed– see the PSL under ‘amino acids’, and ‘growth regulators for plants’.</p> <p>f. See the definition and guidance for ‘allopathic’. There are specific circumstances where antibiotics and parasiticides (wormers and external parasite control products) are allowed. See the livestock section for details.</p> <p>g. This prohibits many food production aids and ingredients. See Section 3 for the definition of ‘synthetic’. Only synthetics products included in the PSL are allowed.</p> <p>h. By its definition (in Section 3), ‘ionizing radiation’ does not include microwave ovens or microwave dryers.</p> <p>i. Operators are not allowed to use bins, equipment, packaging materials or storage containers that contain synthetic fungicides, preservatives, or fumigants. Storage and shipping containers are sometimes treated with pesticides at the point of manufacture (such as chlordane, which is now banned). There are no exceptions to this prohibition.</p> <p>j. Operators are allowed to use certain substances that are mentioned in the standards, even if these are not in the PSL. For example, Paragraph 7.2.12.3 allows the use of Sodium metabisulfite in the storage of filters used in Maple Syrup production, but this substance is not listed in the PSL. Also, nonorganic agricultural ingredients that comply with Paragraph 8.2.3 of these standards are allowed. Otherwise, all production inputs must be listed in the PSL.</p> <p>k. Cloned animals are prohibited. See Section 3 for a definition of ‘cloned animals’.</p>

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functions of the materials at the macro scale, except naturally occurring nano sized 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.	
<b>1.4.2</b> The same ingredient in both an organic and non-organic form shall not be present in an organic product.	
<b>2. REFERENCED PUBLICATIONS</b>  <b>2.1</b> The following publications are referenced in this standard:	
<b>2.1.1</b> Canadian General Standards Board (CGSB) CAN/CGSB-32.311 – Organic Production Systems – Permitted Substances Lists.	
<b>2.1.2</b> Health Canada <i>Food and Drug Regulations</i> (C.R.C., c. 870)	
<b>2.2</b> 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.	
<b>3. DEFINITIONS AND TERMINOLOGY</b>  <b>3.1</b> The following definitions and terms apply in this standard:	
<b>Aeroponics</b> (Aéroponie) A soil-free cultivation method whereby plants are suspended with their roots partially or even totally exposed to the air.	Aeroponic production is prohibited in Paragraph 7.5
<b>Agricultural Product</b> (Produit agricole) An animal, a plant, an animal or a plant product, or a product, including any food or drink wholly or partly derived from an animal or a plant.	
<b>Agro-ecosystem</b> (Agroécosystème) A system consisting of the form, function, interaction and equilibrium of the biotic and abiotic elements present within the environment of a given agricultural enterprise.	
<b>Allopathic</b> (Allopathique) Using allopathy. <b>Allopathy</b> (Allopathie) A method of treating disease with substances that produce a reaction or effects different from those caused by the disease itself.	Allopathy is a term used by American homeopaths, naturopaths, chiropractors and other advocates of alternative health practices to refer to modern mainstream medicine. The word was invented by homeopath Samuel Hahnemann as a term for those medical practitioners who are not homeopaths (or naturopaths, or chiropractors, or osteopaths). In North America, the term has not caught on, and is used mainly by alternative health practitioners, some osteopaths, and (for some reason) these standards.
<b>Annual Seedling</b> (Semis annuel) A young plant grown from seed that will complete its life cycle or produce a yield and be able to be harvested within the same crop year or season in which it was planted.	
<b>Antibiotic</b> (Antibiotique) Various substances that contain any quantity of any chemical substance produced by a micro-organism, like penicillin, and that are used to inhibit or destroy the growth	

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of micro-organisms to prevent or treat disease.	
<b>Apiculture</b> (Apiculture) The management and production of honeybees and queens and their products (e.g. honey, beeswax, pollen, royal jelly, propolis and bee venom).	
<b>Biodegradable</b> (Biodégradable) Capable of biological decomposition into simpler biochemical or chemical components.	
<b>Buffer Zone</b> (Zone tampon) A clearly defined and identifiable boundary area that separates an organic production unit from adjacent non-organic areas.	
<b>Cloned animals</b> (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.	
<b>Commercially Available</b> (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, preparation or handling system.	Certifying bodies should ensure that operators log their efforts to obtain organic sources of seeds, plants, ingredients and other materials where this is required by these standards or the Permitted Substances Lists (PSL) (CAN/CGSB-32.311-2006). Logs can include letters and records of phone calls, email correspondence, or internet searches.
<b>Commingling</b> (Mélange) Physical contact between bulk, unbound or unpackaged organic products and non-organic products during production, preparation, transportation, storage or handling.	
<b>Compost</b> (Compost) The product of a carefully managed aerobic process by which non-synthetic materials are digested by micro-organisms. Organic materials for compost shall be managed appropriately to reach temperatures for the duration necessary to effectively stabilize nutrients and kill human pathogens.	See “Compost” annotations in Paragraph 4.2 of the Permitted Substances Lists (PSL) (CAN/CGSB-32.311-2006).
<b>Compost Tea</b> (Thé de compost) A soil amendment solution created by steeping mature compost in order to promote beneficial bacterial growth.	See “Compost tea” annotations in Paragraph 4.2 of the Permitted Substances Lists (PSL) (CAN/CGSB-32.311-2006).
<b>Crop Rotation</b> (Rotation des cultures) The practice of alternating crops grown on a specific field in a planned sequence in successive crop years so that crops of the same species or family are not continuously grown on the same field. Perennial cropping systems employ techniques such as alley cropping, intercropping and hedgerows to introduce biological diversity in lieu of crop rotation. <b>Perennial Crop</b> (Culture vivace) Any crop, other than a biennial crop, that can be harvested from the same planting for more than one crop year or that requires at least one year after planting before harvest.	
<b>Feed Additive</b> (Additif pour alimentation animale)	

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A substance added to feed in small quantities to fulfil a specific nutritional need (i.e. essential nutrients in the form of amino acids, vitamins and minerals).	
<b>Feed Supplement</b> (Supplément alimentaire) A feed that is used with another feed to improve the nutritive balance of the total and that is intended to be fed undiluted as a supplement to other feeds; or offered free choice with other parts of the ration separately available; or diluted and mixed to produce a complete feed that is acceptable for registration.	
<b>Fertilizer</b> (Engrais) A single or blended substance composed of one or more recognized plant nutrient(s).	
<b>Food Additive</b> (Additif alimentaire) Food additive has the same meaning as in Section B.01.001 of Part B of the <i>Food and Drug Regulations</i> .	
<b>Food Irradiation</b> (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.	This definition does not include microwaves. Microwave ovens and microwave dryers do not use ionizing radiation.
<b>Forage</b> (Fourrage) Vegetative material in fresh, dried or ensiled state (pasture, hay or silage), which is fed to livestock.	
<b>Genetic Engineering</b> (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 <ul style="list-style-type: none"> <li>• recombinant DNA (rDNA) techniques that use vector systems</li> <li>• techniques involving the direct introduction into the organism of hereditary materials prepared outside the organism</li> <li>• 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</li> <li>• Unless the donor/recipient organism is derived from any of the above techniques, examples of techniques not covered by this definition include <ul style="list-style-type: none"> <li>○ in vitro fertilization;</li> <li>○ conjugation, transduction, transformation, or any other natural process;</li> <li>○ polyploidy induction;</li> <li>○ cell fusion (including protoplast fusion) or hybridization techniques where the donor</li> </ul> </li> </ul>	All uses of products of genetic engineering are prohibited according to Paragraph 1.4.1.

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cells/protoplasts are in the same taxonomic family.	
<b>Handling</b> (Manutention) Any operation or portion of operation that receives or otherwise acquires agricultural products for resale, including final retailers of agricultural products, who process and transform, repack or relabel such products.	
<b>Herbivore</b> (Herbivore) An animal that feeds chiefly on plants.	The intent of this definition is to include animals that feed only on plants and do not eat other animals. This definition includes all types of cows, sheep, goats, bison, deer, rabbits, and horses. It is probably easier to describe the domestic livestock that are not considered herbivores, such as pigs and poultry (geese are not true herbivores as they will eat small insects and even tiny fish).
<b>Homeopathic</b> (Homéopathique) Using homeopathy. <i>Homeopathy</i> (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.	
<b>Hydroponics</b> (Hydroponie) Cultivation of plants (flowers and vegetables) in aqueous nutrients solutions without the aid of soil. The soil is replaced by an inert culture medium (e.g. coarse sands, expanded clay, rockwool). Plants are cultivated by using a nutritive solution which is brought to each plant by taking into account the requirements of the species.	Hydroponic production is prohibited in Paragraph 7.5
<b>Ingredient</b> (Ingrédient) Any substance, including a food additive, used in the manufacture or preparation of a product. The substance is present in the final product, possibly in a modified form.	
<b>Input</b> (intrans) Substances which are used or directly applied to the organic production system: particularly fertilizers, feed supplements, pesticides, soil amendments, veterinary treatments, processing additives or aids, sanitizing and cleaning materials.	
<b>Livestock</b> (Animaux d'élevage) Livestock means any domestic or domesticated animal including bovine (e.g. buffalo and bison), ovine, porcine, caprine, equine, poultry and bees raised for food or in the production of food. The products of hunting or fishing of wild animals shall not be considered part of this definition.	
<b>Manure</b> (Déjections animales) Livestock feces, urine and other excrement, and bedding used (or soiled) by livestock and that have not been composted.	
<b>Nanotechnology</b> (nanotechnologie) Nanotechnology is a field described generally as the control and structuring of matter at dimensions typically between 1 and 100 nanometres to create materials, devices,	

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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.	
<b>Non-synthetic</b> (Non synthétique) A substance derived from mineral, plant or animal matter that does not undergo a synthetic process as defined in accordance with this standard.	This definition should be considered when the word 'natural' is used in these standards or the Permitted Substances Lists (CAN/CGSB-32.311-2006).
<b>Nutrient Management Plan</b> (Plan de gestion des nutriments) A nutrient budgeting plan in which the timing and rate of nutrient application is based on soil nutrient status (soil test results), crop nutrient needs, amendment (manure, compost, plow-down crop or other permitted substance), nutrient contents and expected nutrient release rates. The goal of a nutrient management plan is to minimize nutrient loss, protect water quality, maintain soil fertility and ensure effective use of permitted soil amendments.	
<b>Operator</b> (Exploitant) Any person, firm or organization that produces, prepares or imports, with a view to the subsequent marketing of products referred to as organic. <i>Marketing (Commercialisation)</i> The holding or the display of a product for sale, such as offers for sale, selling, delivering or placing on the market in any form.	
<b>Organic Integrity</b> (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.	Note that this definition requires conformity with the standards by everyone involved in the production and supply chain until the product is delivered to the consumer. This conformity applies to final retailers as well, whether they themselves need to be certified or not.
<b>Organic Product</b> (Produit biologique) Any commodity or output produced by a system conforming to this standard.	
<b>Organic Production</b> (Production biologique) A method of agricultural production, including any subsequent preparation, storage and transportation, conforming to this standard.	
<b>Parallel Production</b> (Production parallèle) The simultaneous production, preparation or handling of organic and non-organic (including transitional) crops, livestock and other organic products of the same or similar, visually indistinguishable varieties.	Paragraph 5.1.2 prohibits parallel production as defined here. However, this definition specifically refers to products that are <b>visually indistinguishable</b> .
<b>Pest</b> (Organisme nuisible) An organism causing damage to humans or to resources used by humans, such as some viruses, bacteria, fungi, weeds, parasites, arthropods and rodents.	
<b>Pesticide</b> (Pesticide) Any substance or mixture of substances intended to prevent, destroy or mixel or mitigate any pests or plants.	Note that a pesticide can be either synthetic or nonsynthetic and can be permitted within the standard or prohibited within the standard.
<b>Planting Stock</b> (Matériel de reproduction végétale) Any plant or plant tissue, other than annual seedlings but	Some examples of planting stock: garlic and onion sets, potato seed, raspberry canes, strawberry plants and

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including rhizomes, shoots, leaf or stem cuttings, roots or tubers, bulbs or cloves, used in plant production or propagation.	sunchoke seed.
<b>Preparation</b> (Préparation) Includes, in respect of an agricultural product, processing, slaughtering, storing, inspecting, grading, packing, assembling, pricing, marking and labelling.	
<b>Processing Aids</b> (Auxiliaires de production) Substances that are added to a food for a technological effect during processing and that are not present in the finished food product or are present at insignificant and non-functional levels.	
<b>Production Unit</b> (Unité de production) A portion of an enterprise that produces an organic product under a specific management plan.	
<b>Records</b> (Registres) Any information in written, visual or electronic form that documents the activities undertaken by a producer or a person engaged in the preparation of organic products, in accordance with this standard.	
<b>Sewage Sludge</b> (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.	
<b>Soil</b> (Sol) A mixture of minerals, organic matter, and living organisms.	
<b>Split Production – Split Operation</b> (Production fractionnée – Exploitation fractionnée) An operation that produces, prepares or handles organic and non-organic agricultural products (including transition).	<b>Split production</b> refers to (organic and nonorganic) products that are <b>visually distinguishable</b> , while <b>parallel production</b> does not.
<b>Synthetic Substance</b> (Substance synthétique) A man-made substance formulated or manufactured by a chemical process or by a process that chemically alters compounds extracted from 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.	
<b>Traceability</b> (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.	
<b>Transition</b> (Conversion) Set of steps taken by the operator of a non-organic production system to establish organic management	

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practices, in accordance with this standard.	
<p><b>Transitional Period</b> (Période de conversion) The period of time between the start of an organic management program in a production unit and the attainment of organic status by a production unit, in accordance with this standard.</p>	
<p><b>Transplant</b> (Plant repiqué) A seedling that has been removed from its original place of production, transported and replanted.</p>	
<p><b>Veterinary Biologic</b> (Produit biologique vétérinaire) A helminth, protozoa or micro-organism; or a substance or mixture of substances derived from 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, immunoglobulin products, diagnostic kits and any veterinary biologic derived through biotechnology.</p>	<p>The <i>Canadian Health of Animals Regulations</i> stipulate that, “veterinary biologic does not include an antibiotic except when it is used as a preservative or when it is an integral part of the veterinary biologic.”</p>
<p><b>Veterinary Drug</b> (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.</p>	
<p><b>Wild Crop</b> (Plante sauvage) Naturally growing plants in their natural habitat collected or harvested from a site that is not maintained under cultivation or other agricultural management.</p>	
<p><b>4. ORGANIC PLAN</b></p> <p><b>4.1</b> The operator of an enterprise shall prepare an organic plan outlining the details of transition, production, preparation, handling and management practices, in accordance with this standard.</p>	<p>In practice, most certifying bodies supply operators with an application form that, once completed, becomes the ‘organic plan’ for the operation. See also Paragraph 6.7.9, which requires a parasite management plan for livestock operations and Paragraph 7.1.6, which requires an organic plan for apiculture operations. Generally, <b>an organic plan for crop production</b> includes:</p> <ol style="list-style-type: none"> <li>1. detailed map of the operation, a description of the rotation plan and production plan, a description of changes in the general condition of the soil and ongoing monitoring of the soil condition, field histories documenting previous crops, inputs used, and transition status;</li> <li>2. detailed description of the sources of seed, including seed inoculants, germ plasm, scions, rootstock and other propagules;</li> <li>3. description of the cultivation techniques and types of machinery and equipment used; a profile of erosion risks and proposed corrective measures;</li> <li>4. description of the fertilization program, including</li> </ol>

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	<p>origin and source of manure, storage and handling techniques, quantity applied, application period and composting methods; a description of other production methods aimed at increasing organic matter, such as green manure crops and harvest residue management, and a plan to prevent the leaching of breakdown products of liquid and solid manure;</p> <ol style="list-style-type: none"> <li>5. detailed listing of all production inputs (including pest control products) and the justification for their use;</li> <li>6. description of the watershed on the operation and the measures to prevent its exposure to or contact with prohibited substances; a description of the sources and quality of water used for irrigation;</li> <li>7. description of crop protection issues and management strategies; a description of problems with past practices, if applicable;</li> <li>8. description of potential sources of exposure to or contact with prohibited substances; concerns associated with neighbouring areas and buffer zones; in cases where the operation is not fully converted to organic production, a description of the management system to maintain organic integrity;</li> <li>9. description of the facility's management plan for the storage and handling of organic inventory, and the steps or procedures taken to prevent the commingling of organic and any nonorganic stocks that may be present; and</li> <li>10. for wild crops, a detailed plan of the harvest areas of wild plant species and a history of the last 36 months of compliance with these standards, including a description of the harvesting methods used and the proposed measures for protecting wild plant species.</li> </ol> <p>Generally, an <b>organic handling and processing plan</b> includes:</p> <ol style="list-style-type: none"> <li>1. description of all specifications and steps under the control of the operation, such as the harvesting, preparation, packaging, labelling, processing, storage and distribution of organic product; as well as a description of the controls required at other levels of processing and/or handling (in the supply chain) in order to maintain the status of organic in accordance with the requirements of these standards;</li> <li>2. schematic flowchart or written description with sufficient information for a general understanding of the flow of organic products during handling and processing;</li> <li>3. description of a control system for processing and/or handling that addresses the prevention of commingling of an organic product with nonorganic products and potential exposure or contact through the following:</li> </ol>

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	<ul style="list-style-type: none"> <li>i. ingredients;</li> <li>ii. containers and packaging;</li> <li>iii. enzymes;</li> <li>iv. pest control substances;</li> <li>v. prohibited handling and processing procedures, such as the use of food irradiation;</li> <li>vi. sanitizers, boiler chemicals, lubricants, processing aids and prohibited substances; and</li> <li>vii. transportation and storage;</li> </ul> <p>4. listing of all material inputs including:</p> <ul style="list-style-type: none"> <li>i. all ingredients and substances used in handling and processing of organic and nonorganic products;</li> <li>ii. for each product labelled organic containing one or more nonorganic agricultural products as ingredients, a written description of the rationale for not using organic ingredients; the efforts made to locate or develop a source of the form of the organic ingredient, in accordance with these standards; and progress made over the previous year(s) to eliminate nonorganic agricultural products as ingredients;</li> <li>iii. processing aids used; and</li> <li>iv. description of water usage in the handling operation.</li> </ul> <p>5. listing of all pest management inputs including:</p> <ul style="list-style-type: none"> <li>i. pest problems encountered in the handling operation, and pest monitoring techniques employed;</li> <li>ii. pest management plan;</li> <li>iii. nonchemical pest control methods used in the handling operation; and</li> <li>iv. chemical pest control methods used in the handling operation.</li> </ul> <p>6. description of livestock handling practices, where applicable (abattoirs), including:</p> <ul style="list-style-type: none"> <li>i. health plan identifying nutrient supplementation;</li> <li>ii. handling methods used to minimize stress in livestock;</li> <li>iii. arrangements made at the packing plant for supplying livestock with fresh water; and</li> <li>iv. arrangements made at the packing plant for feeding and bedding livestock held for more than 24 hours;</li> </ul> <p>7. description of waste management practices including:</p> <ul style="list-style-type: none"> <li>a. efforts taken to reduce solid and/or liquid waste and airborne emissions produced by the handling operation; and</li> <li>b. recycling efforts, such as the use of recycled</li> </ul>

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	<p>materials and any efforts to reduce packaging in the handling operation.</p> <p>Generally, an organic <b>Livestock Production Plan</b> includes:</p> <ol style="list-style-type: none"> <li>1. description of the sources of livestock;</li> <li>2. description of the production method; and</li> <li>3. description of livestock management plans for diet, disease, pests, breeding and related problems production issues, in compliance with these standards.</li> <li>4. requirements of the crop production plan, as appropriate</li> </ol>
<p><b>4.2</b> 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.</p>	<p>Certifying bodies will request an update of an operation's organic plan every year, in the form of the yearly application for certification. Paragraph 4.2 describes the minimum requirements for the updated plan.</p>
<p><b>4.3</b> 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.</p>	<p>This paragraph reinforces the requirements in Paragraph 4.4.1. Certifying bodies should ensure that their application forms include a description of the operation's record keeping system. The standards mention documents – the intent is that the types of documents used by the operator should be identified in the plan. These records should be available for review by certifying body inspectors at the annual inspection, but may not need to be attached to the plan.</p>
<p><b>4.4 Record Keeping and Identification</b> – The operator seeking to comply with this standard shall maintain records and relevant supporting documents concerning the inputs and details of use, production, preparation and handling of organic crops, livestock and products. The operator shall guarantee the organic integrity of the product through continuous traceability from the receipt of the raw material to release of the product.</p>	<p>This describes the records that must be kept by an operation. 'Input' generally refers to farm production, such as fertilizers or livestock health products, but can also mean ingredients and cleaning products – anything that is brought on site in order to produce an organic product. This paragraph also introduces the concept of traceability, which is the basis of organic certification. The guarantee of organic certification is that a certain product was produced according to the standards, and that the product can be traced from consumer sale back to the farm where it was grown. These standards require an operator to confirm the audit trail (written records) of a product while it is in their ownership. 'Release of the product' refers to the point at which an operator no longer owns a product, whether it is in their possession or not.</p>
<p><b>4.4.1</b> Records shall make it possible to trace</p> <ol style="list-style-type: none"> <li>a. the origin, nature and quantities of organic products, as stated within this standard, that have left the production unit;</li> <li>b. the nature, quantities and consignees of products, as stated within this standard, that have left the production unit;</li> </ol>	<p>This describes in more detail the specific records necessary to ensure traceability (also called the audit trail).</p> <ol style="list-style-type: none"> <li>a. these records include receipts, invoices and expense journals, which are also production records.</li> <li>b. these records include invoices, copies of receipts, bills of lading, sales journals and financial (tax) records. In particular, sales records must ensure the traceability of the product, including such information as batch or lot numbers, production dates, label SKU, livestock tags and slaughterhouse documentation, or any other invention that will allow the purchaser (and further consumers in the supply</li> </ol>

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<p>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.</p>	<p>chain) of a product to identify the origin of the product.</p> <p>The records identified in ‘a’ and ‘b’ also facilitate an ‘input/output’ verification; that is, to ensure that an operation has not produced more ‘organic’ product than is possible from the organic ingredients it purchased.</p> <p>c. These records allow the certifying body to evaluate a product to ensure that it has been produced according to these standards.</p>
<p><b>4.4.2</b> Records shall be maintained for not less than five years beyond their creation.</p>	<p>This is consistent with international requirements for organic certification.</p>
<p><b>4.4.3</b> An identification system shall be provided for distinguishing organic and non-organic crops, livestock (e.g. general appearance, colour, variety and types), and products.</p>	<p>Organic and nonorganic crops must be distinguishable from each other, regardless of their intended use (e.g. a nonorganic cow for home use must be distinguishable from the herd of organic cows and steers). This is particularly important for livestock operations, where an organic animal can become nonorganic the instant it is treated with a prohibited medication (Note: there are specific exceptions for dairy animals and for the use of parasiticides). A treated animal which is not removed from the herd and continues to be managed organically can never be sold as an organic meat animal.</p> <p>Certifying bodies will want to ensure that every livestock operation has a plan to deal with nonorganic animals that remain part of the herd. Livestock ear tags (leg rings and bands for poultry) are one method, but the operator must be prepared to regard any animal without a tag (tags can be lost) as nonorganic. If an operator does not use an identification system for their herd, they must develop a method of positively identifying nonorganic animals (or they should keep them separate forever). If treated animals are shipped immediately, the operator must have records to confirm this. Unless the herd is very small, the statement that “there are no nonorganic animals” should be backed up with evidence that the operator has an excellent health program (using approved health products) and/or that treated animals are quickly shipped into the nonorganic market.</p> <p>Organic and nonorganic crops that are indistinguishable cannot be grown by the same operation (see 5.1.2). This statement refers to the appearance of a product – it is not adequate to put nonorganic apples in special bins and say that they are now distinguishable from organic apples of the same variety. If an operator grows both organic and nonorganic crops, the operator must ensure that they are easily distinguishable – e.g. organic wheat and nonorganic barley. In this example, the operator could not</p>

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	<p>grow any organic barley on their operation. Here are some examples of organic and nonorganic varieties of the same crops which could be visually distinguishable:</p> <ul style="list-style-type: none"> <li>• Nugget and mature potatoes – in this case, a producer could grow the same variety, as the organic and nonorganic potatoes would be distinguishable</li> <li>• Visually distinct varieties – red onions and yellow onions; red potatoes and white potatoes; green apples and red apples</li> </ul> <p>Manufactured organic products must be distinguishable from nonorganic products. The most common way to achieve this is through the use of product labels. Bulk organic products must be labelled in such a way that they cannot be confused with nonorganic products.</p>
<p><b>5. CROP PRODUCTION</b></p> <p><b>5.1 Land Requirements for Transition to Organic</b></p> <p><b>5.1.1</b> This standard shall be fully applied on a production unit for at least 12 months before the first harvest of products. Substances prohibited by par. 1.4.1 and substances not in CAN/CGSB 32.311, <i>Organic Production Systems – Permitted Substances Lists</i>, shall not have been used for at least 36 months before the harvest of any organic crop.</p> <p><i>Note: The Canadian Organic Products Regulations require operators to document that they have not used substances prohibited by this standard and substances not listed in CAN/CGSB 32.311, Organic Production Systems – Permitted Substances Lists. Operators may also be required to be under the supervision and inspection of a certification body for at least 12 months before making organic claims on agricultural products.</i></p>	<p>See also Paragraphs 7.2.8, 7.3.1, 7.4.5, 7.5.1, and 7.6.1 for other crop production transition requirements. “Fully applied” means that the operation must be under the surveillance of a certifying body that is accredited to the Canada Organic Regime for at least 12 months before the harvest of organic crops, and the certifying body must have determined that the operation is complying with the standards (this would require active management of the land - especially soil fertility management during that time, rather than just a lack of prohibited substances). In the application of this paragraph, certifying bodies should ensure that the 12-month period begins on the date that the operator provides documentation to the certifying body which states that the standards are fully applied on the appropriate production units (this documentation is subsequently verified by the certifying body inspector). For most certification programs, this would be the date of receipt of the completed Farm Plan.</p> <p>Before the harvest of organic crops, an operation must be under the supervision of a certifying body for 36 months, or must be able to prove that prohibited products have not been used on the soil or on any crops grown in it for 36 months. Certifying bodies should have some method to verify this – a producer declaration would be the minimum, but official income tax expense forms could also be verified (to see if any prohibited products have been purchased in the previous 36 months). Of course, the entire farm would still need to be thoroughly inspected.</p> <p>This section is intended for operations that are new to organic. Existing operators adding fields to their management must demonstrate compliance with all other aspects of transition, including the withdrawal periods for</p>

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<p><b>5.1.2</b> The enterprise shall aim at a complete transition of its production. During the transition period, the enterprise can maintain, in addition to the production in transition, a non-organic system of production (split operation) that shall be entirely separate and identified pending its incorporation into the overall transition process. Parallel production (where the products of the organic and non-organic system are indistinguishable) is not allowed. The enterprise can be converted one unit at a time, and each converted unit shall respect the requirements of this standard.</p>	<p>prohibited substances.</p> <p>The intent of this paragraph is as stated – that the entire operation aim (through planning) to become organic. In the enforcement of this paragraph by certifying bodies, there has always been the commonsense understanding that:</p> <ol style="list-style-type: none"> <li>1. some crops cannot be produced organically (on a commercial scale) at this time;</li> <li>2. this paragraph does not intend to prohibit nonorganic production for home use;</li> <li>3. this paragraph does not apply to preparation (processing)– see Paragraph 8.3.10;</li> </ol> <p>It is very clear that a single operation cannot produce organic and nonorganic blueberries, even on different sites; but the standards do not indicate how long an operator could manage organic vegetable production along with nonorganic sheep production, for example. When making this decision, certifying bodies should investigate the intent of the operator – do they have a plan to transition their whole farm to organic production? If not, do they have a credible excuse? Without a credible reason to maintain nonorganic production, the split operation cannot be maintained indefinitely – eventually, this standard must be enforced. See the guidance to Paragraph 4.4.3</p>
<p><b>5.1.3</b> All production units shall have distinct, defined boundaries.</p>	<p>The intent of this paragraph is to ensure that the certifying body can verify exactly what is being certified. In practice, this paragraph generally refers to tracts of land or fields owned by an operation that must be identifiable from fields of neighbouring farms. If there are no landmarks such as roads or fences, the operator must install some boundary markers. These can be as simple as posts with identifiable marks on them, or as complex as GPS coordinates, with no markers on the land at all. Depending on the type of production, a certifying body may require the physical identification of every separate field, or simply boundary markers around the entire farm. A ‘production unit’ (see Section 3) refers to livestock production as well, which includes pasture and range for forage species, and buildings and runs for other species. For processing, the paragraph refers to a manufacturing plant, but there may be distinct organic areas within that plant. These areas would need to be defined.</p>
<p><b>5.1.4</b> When unintended contact with substances prohibited by par. 1.4.1 is possible, distinct buffer zones or other features may be sufficient to reasonably prevent contamination are required:</p> <ol style="list-style-type: none"> <li>a. Buffer zones shall be at least 8 m wide</li> <li>b. Permanent hedgerows or plant windbreaks, artificial windbreaks, permanent roads or other adequate physical barriers may be used instead of buffer zones.</li> </ol>	<p>Buffer zones are most importantly used when the uses of neighbouring land are not conducive to the organic status of an operation. These should be examined in depth. Certifying bodies should develop a risk assessment tool. This can be as simple as a series of questions, asked by the certifying body inspector.</p> <ol style="list-style-type: none"> <li>1. Could the neighbour apply prohibited products that would contaminate organic crops? (a horse paddock next to an organic farm provides little risk of</li> </ol>

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	<p>contamination, for example).</p> <ol style="list-style-type: none"> <li>2. Is there a highway next to the organic farm? If so, a buffer zone is probably required, unless the verge of the highway adequately prevents contamination from vehicle exhaust.</li> <li>3. Is there a source of airborne contamination close by, but not adjacent?</li> <li>4. Are there prohibited fence posts next to a vegetable garden? If so, and if they are not removed, a buffer zone may need to be established.</li> <li>5. Are genetically engineered crops grown next to or close to organic crops?</li> </ol> <p>Once it is established that a buffer zone is required, certifying bodies must determine the best method of protecting the organic crop within the parameters of the standards. Buffer zones wider than 8 metres may be required, but certifying bodies should be able to document the reasons for a larger buffer zone. One reason would be to prevent contamination from products of genetic engineering. In this case, 8 metres is similar to what is required for a self-pollinated crop like soybeans, or crops that do not typically pollinate, such as sugar beets. However, other factors and larger buffer zones would have to be considered for genetically engineered corn and canola. Certifying bodies should assess the need for buffer zones yearly, depending on changes in neighbouring land use. Operators with consistently problematic neighbours should consider planting windbreaks to control wind-borne contamination.</p>
<p><b>5.1.5</b> Crops grown in buffer zones shall be considered non-organically grown products whether they are used on the farm or not.</p>	<p>Operators should be prepared to document what they have done with a crop grown in buffer zones. For example, “I sold it to a neighbour as nonorganic. Here is the receipt with nonorganic clearly indicated”, or “I fed the hay to my nonorganic milk cow. I stored it separate from my organic hay in this shed.” See the guidance for Paragraph 5.1.2 in this document.</p> <p>Seeds that are grown in buffer zones are treated the same as seeds grown on conventional farms.</p>
<p><b>5.1.6</b> Production units shall not be alternated between organic and non-organic production methods.</p>	<p>This paragraph means that an organic farmer cannot remove a portion (or all) of the farm from the organic program and then bring it back into the program, even if they are willing to go through another three-year transition. This paragraph also includes livestock production units. For example, a chicken or pork barn is treated similarly to a vegetable garden because such barns also include the outside runs, which must be managed organically. The intent of this paragraph is to prohibit opportunistic alternations of a farm by the same farm operator. There may be instances where a farm is brought out of organic production and brought back in (with an appropriate transition period) because of factors beyond the farmers’ control, such as a family emergency, aerial pesticide spraying, or other type of emergency. In</p>

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	this case, the certifying body could decide how to handle the specific situation. See Appendix A for guidance regarding certifying body discretion.
<p><b>5.2 Environmental Factors</b></p> <p><b>5.2.1</b> Measures shall be taken to minimize the physical movement of substances prohibited by par. 1.4.1 from neighbouring areas onto organic farmland and crops. Similarly, measures shall be taken to minimize the contamination of land and crops with such substances.</p>	<p>Though this paragraph looks to be a repetition of Paragraph 5.1.4, it is actually a reminder to organic operators and certifying bodies to continually monitor the quality of the water, air and soil used in organic production.</p>
<p><b>5.2.2</b> The use of posts or wood treated with materials other than those in CAN/CGSB-32.311, Organic Production Systems – Permitted Substances Lists, is prohibited.</p> <p>a. Continued use and recycling of existing (prohibited) posts within the farm are allowed.</p> <p>b. Acquisition of any additional material with these wood treatments is prohibited for new installations or replacement purposes. Exceptions may be granted in vast rangeland and semi-arid regions, and will consider the availability of alternate materials.</p>	<p>The most commonly available treated fence posts are those treated with Copper Chromium Arsenate (CCA) (the green ones) – these posts are prohibited by this paragraph.</p> <p>a. Certifying bodies should develop an inventory of prohibited posts for every farm, so that they can ensure that new posts are not being brought onto the farm.</p> <p>b. ‘Semi-arid’ (a steppe climate) refers to areas that receive between 250 and 500 mm of rain per year. In Canada, this characterizes the southern prairies and some other very specific regions of the country – but the classification ‘semi-arid’ would not apply to irrigated production (of tree fruits, grapes and berries, for example) that may exist in semi-arid regions. Vast rangeland refers to large pastures for livestock (often many thousands of acres), and not to crop fields, paddocks or dairy pastures. Operators should not consider this exception a loophole allowing the installation of treated fence posts anywhere. Certifying bodies should not allow treated posts to be installed in gardens, crop areas, or confined livestock areas. Additionally, exceptions may only be granted in cases where alternate materials are not available (i.e., the certifying body “...will consider the availability of alternate materials”).</p>
<p><b>5.3 Seeds and Planting Stock</b></p> <p><b>5.3.1</b> The operator shall use organic seed, bulbs, tubers, cuttings, annual seedlings, transplants and other propagules produced in accordance with this standard.</p>	<p>The intent of this paragraph is to ensure that organic practices are implemented along the entire production chain, from propagation to final product.</p>
<p><b>5.3.2 Exceptions or Conditions</b></p> <p><b>5.3.2.1</b> A variety of non-organic untreated seed and planting stock or seed only treated with substances in accordance with this standard may be used provided that the organically produced seed or planting stock variety</p> <p>a. is not available from the enterprise</p> <p>b. is not commercially available, and a reasonable search involving potential, known organic suppliers has been conducted.</p>	<p>Ideally, all seeds and planting stock should be organic, but it is recognized that these are not yet available in the diversity needed for all operations – hence the exceptions.</p> <p>Before using nonorganic seed or nonorganic planting stock, the operator must provide written evidence of their search, showing that the variety they seek is not available in sufficient form, quantity and/or quality. This evidence</p>

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	<p>could be in the form of email correspondence, records of phone calls, or records of searches of seed catalogues or the Internet.</p> <p>Treatments are limited to mechanical treatments such as scarification (to break the outer cover of hard seeds to aid germination) or to those using substances listed in the Permitted Substances Lists (PSL) (CAN/CGSB-32.311-2006) such as clay (pelleted seed), hot water, hydrogen peroxide and inoculants not prohibited by Paragraph 5.3.2.3 below.</p> <p>Note that this paragraph applies to all types of seed (forage, cereals, vegetable, and oilseeds), as forage seed is often overlooked by operators and certifying bodies. Some nonorganic forage seed is treated with genetically engineered inoculants and fungicide. Operators should check with their supplier to ensure that all seed complies with this standard.</p> <p>No exceptions are allowed for seeds used for sprouts (See Paragraph 7.4.1).</p>
<p><b>5.3.2.2</b> Non-organic perennial planting stock may be used provided that the organic products were harvested after such plants have been maintained in accordance with this standard for at least one year.</p>	<p>For example, to meet this requirement, nonorganic strawberry runners would need to be managed organically for one year before organic strawberries could be harvested. The year is calculated from the planting date. If strawberries are managed as annual crops, then nonorganic runners would not be allowed to produce organic fruit within that growing season.</p>
<p><b>5.3.2.3</b> Plant varieties, seeds, seed inoculants, germ plasm, scions, rootstocks or other propagules developed through the use of genetic engineering are prohibited, in accordance with par. 1.4.1.</p>	<p>Though redundant (because there is a general prohibition on all uses of products of genetic engineering in Paragraph 1.4.1), operators are often reminded of this prohibition throughout these standards. It is especially pertinent for those operating in areas with high risks of contamination.</p>
<p><b>5.4 Soil Fertility and Crop Nutrient Management</b></p> <p><b>5.4.1</b> The main objective of the soil fertility and crop nutrient management program shall be to establish and maintain a fertile soil using practices that maintain or increase soil humus levels, that promote an optimum balance and supply of nutrients, and that stimulate biological activity within the soil.</p>	<p>This paragraph requires organic operators (where relevant) to establish a soil fertility and crop nutrient management program. This program should be part of the farm plan, and should be updated every year. Coupled with 5.4.2 below, this paragraph requires organic farmers to work actively to improve the quality of the soil on their farm. It is not enough to have good soil and to ‘settle’ for whatever yields result – organic farming is an active soil improvement process.</p>
<p><b>5.4.2</b> The fertility and biological activity of the soil shall be maintained or increased, where appropriate, by</p> <ol style="list-style-type: none"> <li>crop rotations, which shall be as varied as possible and include plough-down, legumes, catch crops or deep-rooting plants;</li> <li>incorporating plant and animal matter that can be obtained from organic production in compliance with this standard and that include the following:</li> </ol>	<p>This paragraph lists the activities that should be included in the soil fertility and crop nutrient management program, where appropriate. Certifying bodies should verify that operators are following their soil fertility and crop nutrient management programs.</p>

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<ul style="list-style-type: none"> <li>i. composted animal and plant matter</li> <li>ii. non-composted plant matter, specifically legumes, plough-down crops or deep-rooting plants within the framework of an appropriate multiyear rotation plan</li> <li>iii. non-processed animal manure, including liquid manure and slurry.</li> <li>iv. Animal manures which have been processed using physical (e.g. dehydration), biological or chemical treatment only with substances permitted by CAN/CGSB-32.311 <i>Organic Systems – Permitted Substance Lists</i>. Techniques for processing animal manure shall minimize the loss of nutritional elements.</li> </ul>	
<p><b>5.4.3</b> The operator shall select and implement tillage and cultivation practices that maintain or improve the physical, chemical and biological condition of soil, that minimize damage to the structure and tilth of soil, and that minimize soil erosion.</p>	<p>Cultivation for crop production should:</p> <ul style="list-style-type: none"> <li>• be done when the ground is at the right moisture level, to ensure suitable tilth while avoiding damage to the soil structure;</li> <li>• cause minimal disruption of the soil profile by using shallow ploughing or no-till systems;</li> <li>• enable deep loosening of the subsoil to break plough or compaction pans;</li> <li>• avoid overuse of ploughing and rototilling, which tend to create hardpan.</li> </ul> <p>Certifying bodies should verify that tillage and cultivation practices are maintaining or improving the overall structure of the soil.</p>
<p><b>5.4.4</b> The operator shall manage plant and livestock materials to maintain or improve soil organic matter content, crop nutrients, and soil fertility in a manner that does not contribute to the contamination of crops, soil or water, by plant nutrients, pathogenic organisms, heavy metals or residues of substances prohibited by par. 1.4.1.</p>	<p>This paragraph requires operators to protect the health of soil and water on their farm by not overfertilizing. Too much manure (especially raw manure) can cause excessive buildup of nitrates and phosphorous in the soil, which can harm soil organisms and livestock, and result in runoff, which can pollute waterways. Pasturing animals or spreading manure (or compost) near watercourses can pollute the water. Plant or animal products that are brought onto the farm do not generally contribute to heavy metal contamination of the soil – most heavy metal contamination results from non-farm source wastes. See restrictions in Paragraph 5.4.5.</p>
<p><b>5.4.5</b> Except as provided in par. 5.5.1, the organic matter produced on the enterprise shall be the basis of the nutrient cycling program and may be supplemented with off-farm organic and non-organic nutrient sources specified in CAN/CGSB-32.311, <i>Organic Production Systems – Permitted Substances Lists</i>.</p>	<p>This paragraph directs organic farmers to design their organic farming systems so that they are self-sufficient in organic matter through green manure practices, composting of plant material from the farm or through utilising manure from on-farm livestock, or both. This paragraph is specific in its requirement that an organic farm cannot be wholly dependent on off-farm sources of plant nutrition – Paragraph 5.4.5 stipulates that on-farm sources “may be supplemented” with products compliant with the Permitted Substances Lists (PSL) (CAN/CGSB-32.310-2006).</p>

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<p><b>5.4.6</b> The operator shall not use burning to dispose of crop residues produced on the operation, except that burning may be used to suppress the spread of disease or to stimulate seed germination.</p>	<p>Crop residue includes straw, as well as prunings such as raspberry canes and orchard branches. Operators must verify how crop residues are managed, and must verify that burning is only used to suppress disease or to stimulate seed germination (there are no commercial instances where burning is necessary for seed germination). Note that this paragraph refers to burning, and not to flame weeding.</p>
<p><b>5.5 Manure Management</b></p> <p><b>5.5.1 Manure Sources</b> – The operator shall first use all available animal manure produced on the organic operation (on-farm) and then may use manure from other organic operations (off-farm). When manure from organic operations is not available in sufficient quantities, the operator may use manure from non-organic farm operations provided that</p> <ol style="list-style-type: none"> <li>the non-organic operation is not a fully caged system where livestock is not able to turn 360°;</li> <li>livestock is not permanently kept in the dark;</li> <li>source of manure, type of livestock, evaluation of the criteria mentioned in par. 5.5.1 a. and b., and quantity shall be recorded.</li> </ol> <p><i>Note: Organic operations should make it a priority to use manure obtained from transition or extensive livestock operations and not originating from landless livestock production operations or from livestock operations using genetically modified organisms (GMOs) and their derivatives in animal feeds.</i></p>	<p>This paragraph describes the sources of manure that is acceptable for use on organic farms.</p> <ol style="list-style-type: none"> <li>This passage prohibits manure from livestock operations which utilize veal crates, and from hog barns where farrowing crates are used. It does not prohibit manure from caged poultry.</li> <li>This passage includes veal production – again, certifying bodies need to investigate to ensure that nonorganic manure complies with the requirements.</li> <li>This passage requires operators to keep a log of all nonorganic manure used on the farm, and to be able to use the records to demonstrate that the manure complies with the standards. Certifying body inspectors should verify that this information is recorded and available.</li> </ol> <p>This informative note provides guidance to organic farmers on how to reduce the risk of exposure to products of genetic engineering. Certifying bodies, certifying body inspectors, and persons using nonorganic manure should make themselves familiar with a research study available from the Organic Agriculture Center of Canada, “<b>Does composting degrade modified DNA?</b>”, wherein the authors conclude that, “[T]he results indicate that if composting is done well, modified DNA can be degraded in four months. There is concern that modified DNA may persist longer under less favourable composting conditions.” A similar Danish study called “<b>Composting rapidly degrades DNA from genetically modified plants</b>” (Darcov eNews, June 2004), researches the composting of genetically engineered plant materials. The authors conclude “...that composting of GM [genetically modified] plant residues greatly increases the rate of degradation of transgenic DNA compared to the rate for plant residues left in the soil. If this is considered as the only risk factor, composting is a ‘DNA-safe’ method to treat GM plant residues.” Certifying bodies can perform risk assessments for products of genetic engineering (GE) on a particular operation (because of the GE prohibition in Paragraph 1.4.1), and</p>

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	require the composting of high-risk manure as a result. See also the Permitted Substances Lists (PSL) (CAN/CGSB-32.311-2006) annotation for ' <b>compost feedstocks</b> '.
<p><b>5.5.2 Land Application of Manure</b></p> <p><b>5.5.2.1</b> The essential elements of an organic manure application program shall address land area, rate of application, time of application, soil incorporation and retention of nutrient components.</p>	<p>This paragraph, combined with Paragraphs 5.2.2.2 and 5.5.2.4, requires farmers who apply manure (and other soil amendments) to have a documented manure management plan. The application rate of manure should not be greater than the crop rotation needs. It will vary with the degree of decomposition, the crop and cropping program, the soil texture and organic matter, and the frequency of previous applications. The maximum numbers of animals per acre or amounts of manure applied should be consistent with local conditions, crop responsiveness to applied nitrogen, the quantity of nitrogen, and other nutrients removed in crops exported from the field. Organic farmers may cooperate with other farms with the intention of spreading surplus manure from livestock production.</p> <p>Operators should make themselves aware of provincial legislation on the handling of manure (sometimes called 'farm waste').</p>
<p><b>5.5.2.2</b> All soil amendments including liquid manure, slurries, compost tea, solid manure, raw manure, compost and other approved substances shall be applied to land in accordance with nutrient management planning principles.</p> <p><i>Note: In Canada, some additional provincial requirements may also apply.</i></p>	<p>'Nutrient management planning' refers to a nutrient budgeting process in which the timing and rate of nutrient application is based on soil nutrient status (e.g. soil test results), crop nutrient needs, amendments (manure, compost, ploughed down crops or other permitted substances), nutrient content and expected nutrient release rates. The goal of a nutrient management plan is to minimize nutrient loss, protect water quality, maintain soil fertility, and ensure effective use of permitted soil amendments. This paragraph refers to the <b>principles</b> of nutrient management planning (rather than saying that the farmer must have a nutrient management plan). This provides some flexibility for farmers to apply nutrient management in their own way (i.e., they do not need to hire a farm/environmental consultant to show that they are following the principles of nutrient management). Farmers who are affected by this requirement should make themselves familiar with nutrient management principles, which are available from most provincial ministries of agriculture (environmental farm planning, where available, will provide nutrient management planning for free). Farmers should be prepared to prove to certifying body inspectors that they have assessed their crop nutrient needs, the nutrient value of their soil, and the value of their soil amendments (They can calculate the value of the material that went into it, or get such information from the manufacturers of products using). Farmers should also be prepared to prove that they are applying the right amount of soil amendments for their</p>

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	particular cropping needs. Much to their dismay, many organic farmers only realize after a proper soil assessment that they have been applying too much compost to their soil. In an attempt to increase the nitrogen content (for yield), they often increase phosphorus levels beyond the capacity of the soil (which can result in leaching of phosphorus and environmental damage). The most salient principle in nutrient management planning is the quest to achieve a proper nutrient balance in your soil, and to maintain that balance over time. Soil assessment methods include: soil tests, plant symptom analysis, plant tissue analysis, assessing crop yields, and evaluating weed characteristics and pressure.
<b>5.5.2.3</b> Where manure is applied, the soil shall be sufficiently warm and moist to ensure active bio-oxidation.	Biooxidation involves the use of bacteria to promote oxidation reactions in aqueous environments. This means that bacteria in the soil will turn the manure into stable soil nutrients (as in composting), but this will only work when the soil is warm and moist. Otherwise, the nutrients in the manure will be leached and end up as pollution rather than soil nutrition. This paragraph refers to manure (fresh or aged), not compost or other soil amendments. Aged manure is defined as that which has been piled for at least 6 months but has not been turned or monitored to ensure that the material has passed through a thermophilic phase. ‘Sufficiently warm’ soil is generally around 10°C. Certifying bodies should ensure that manure is applied during the time of year when there is no frost, no threat of heavy rain, and when plants are actively growing.
<b>5.5.2.4</b> In season, the timing, rate and method of manure application shall be designed to ensure that manure application a. does not contribute to the contamination of crops by pathogenic bacteria; b. minimizes the potential for run-off into ponds, rivers and streams; c. does not significantly contribute to ground and surface water contamination.	The restrictions in this paragraph are law in most provinces. To comply, farm plans (where appropriate) should show how the application of manure on a farm will not contaminate crops, pollute watercourses, or pollute ground and surface water. The most effective and responsible use of manure is accomplished by land application followed by immediate or simultaneous incorporation. Incorporation prevents nutrient losses due to volatilization and runoff, and allows microbial cycling and soil retention processes to stabilize the added material. The retention of readily available plant nutrients (e.g. NH <sub>4</sub> <sup>+</sup> , NO <sub>3</sub> <sup>-</sup> , and soluble forms of P) in the rooting zone should be maximized by cropping immediately after application. Green manure and/or “catch” crops should be used if land is not already in crop and is intended to lay fallow for any length of time.
<b>5.5.2.5</b> The non-composted solid or liquid manure shall be a. incorporated into the soil at least 90 days before the harvesting of crops for human consumption that do not come into contact with soil;	This paragraph is similar to the United States organic rule and is designed to minimize the risk of crop contamination while still allowing the use of fresh (i.e., raw, not composted) or aged manure. a. Sweet corn and grain are good examples of crops for human consumption that have edible parts that do not come in contact with soil. Other examples include broccoli, cabbage, staked tomatoes, peppers,

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<p>b. incorporated into the soil at least 120 days before the harvesting of crops having an edible part that is directly in contact with the surface of the soil or with soil particles.</p>	<p>and beans. Obviously, this is not true of root crops.</p> <p>b. This means that an operator is allowed to incorporate raw manure (spreading alone is not sufficient) no less than 120 days before the harvest of root crops, pumpkins, most squash, field peas, lettuce, field tomatoes, and any other crop that has an edible part that contacts the soil. Though it is not specifically mentioned, the intent of this passage is the same as that of paragraph a (i.e., it only applies to crops destined for human consumption).</p> <p>Paragraphs a and b both refer to incorporating the manure into the soil. Thus, spreading manure on a cereal crop (for example) and then harvesting it for human consumption within 90 days would not be allowed. This paragraph is silent on the production of crops that are not for human consumption; so it can be inferred that it does not cover such crops.</p>
<p><b>5.6 Crop Pest, Disease and Weed Management</b></p> <p><b>5.6.1</b> Pest, disease and weed control shall be centred on organic management practices aimed at enhancing crop health and reducing losses caused by weeds, disease and pests. Organic management practices include cultural practices (e.g. rotations, establishment of a balanced ecosystem, and use of resistant varieties) and mechanical techniques (e.g. sanitation measures, cultivation, traps, mulches and grazing).</p>	<p>This paragraph provides the principle that pests, weeds, and disease should be controlled through effective management (rather than through inputs), and provides some advice about what those management practices might be. Other suggestions include:</p> <p>Pest problems may be managed through mechanical or physical methods, such as:</p> <ol style="list-style-type: none"> <li>1. augmentation or introduction of natural predators and parasites of pest species;</li> <li>2. promotion of conditions within the operation conducive to establishing, protecting, encouraging and maintaining natural predators and parasites of pests (e.g. hedges, nesting sites, and ecological buffer zones that maintain the original vegetation to sustain natural pest enemies);</li> <li>3. mowing;</li> <li>4. use of stale seedbeds;</li> <li>5. grazing of animals;</li> <li>6. mechanical cultivation and hand weeding;</li> <li>7. flame, heat or electrical methods, if alternative methods of soil renewal or rotation are not feasible.</li> <li>8. mulching - plastic mulch, tunnels, hay wrappers and other plastics used for crop production or protection are permitted provided they are not incorporated into the soil or left in the field to decompose; they shall be removed at the end of the growing season. Plastic mulches in perennial crops may be left for more than one season but shall be removed before the plastic decomposes. The use of polyvinyl chloride as plastic mulch or row cover is prohibited (see the Permitted Substances Lists (PSL) (CAN/CGSB-32.311-2006) annotation for mulch).</li> </ol>
<p><b>5.6.2</b> When the organic management practices alone</p>	<p>This paragraph provides an exception to the principles</p>

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cannot prevent or control crop pests, disease or weeds, a biological or botanical substance, or other substances in CAN/CGSB-32.311, <i>Organic Production Systems — Permitted Substances Lists</i> , may be applied. However, the conditions for using the substance shall be documented in the organic plan, in accordance with par. 4.	expressed in Paragraph 5.6.1. It states that an organic farmer may only resort to inputs for pest, disease, or weed control when organic management practices have not worked, and then only to substances included in the Permitted Substances Lists (PSL) (CAN/CGSB-32.311-2006). When a farmer intends to use an input for pest, disease, or weed control, their organic plan must say so and provide the rationale for doing so. This applies to ‘substances’ as diverse as plastic mulch and nonsynthetic tools, including lures, traps and repellents (all listed in the PSL).
<b>5.6.3</b> Application equipment (e.g. spray equipment) used for soil nutrient supplements, disease or pest management on the enterprise shall be cleaned thoroughly between applications to remove residues of applied substances. If products presenting a contamination risk have been previously applied with the equipment, equipment parts from which residue cannot be removed shall be replaced.	‘Equipment parts’ generally refers to hoses, but may include tanks, if a tank cannot be properly cleaned. Proper equipment cleaning procedures can be obtained from the manufacturer.
<p><b>6. LIVESTOCK PRODUCTION</b></p> <p><b>6.1 General</b></p> <p><b>6.1.1</b> Livestock for organic production shall be raised according to this standard.</p>	<p>For the most part, the livestock standards are not highly prescriptive, recognizing that there are many different types of livestock and many different possibilities for systems which, in accordance with the basic principles, provide attentive care that promotes the health and meets the behavioural needs of livestock.</p> <p>It is therefore important that the intent of the standards be understood and that producers and certifying body inspectors have a basic understanding of the natural behaviour of the livestock and the conditions necessary for a high standard of animal welfare. For more information on animal welfare in the context of the standards, see the work of the Animal Welfare Task Force (a task force of the Expert Committee on Organic Agriculture) posted on the Organic Agriculture Centre of Canada website: <a href="http://www.organicagcentre.ca">www.organicagcentre.ca</a>.</p>
<p><b>6.1.2</b> Livestock can make an important contribution to an organic farming system by</p> <ol style="list-style-type: none"> <li>improving and maintaining the fertility of the soil;</li> <li>managing the flora through grazing;</li> <li>enhancing biodiversity and facilitating complementary interactions on the farm.</li> </ol>	These are informative statements rather than requirements. They emphasize the need for a holistic approach which integrates livestock and crop production on the same farm.
<p><b>6.1.3</b> Livestock production is a land-related activity.</p> <ol style="list-style-type: none"> <li>Herbivores shall have access to pasture during the grazing season, and access to the open air at other times when weather conditions permit. Calculated on the basis of dry matter intake, the consumption of grazed forage during the grazing season of the region</li> </ol>	<p>An organic system recognizes the interdependence of soil, plants and animals. ‘Land-related’ means that production is inherently connected to land. Livestock production that is not connected to land does not meet the intent of the standards (an example is a chicken barn without outdoor runs – though the barn is obviously sited on land, the production of chickens has no relationship to the land).</p> <ol style="list-style-type: none"> <li>This concept is a basic premise of organic livestock production and means that animals cannot be confined to indoor facilities. The intent of the forage requirements is that the size of the production unit</li> </ol>

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<p>shall represent a minimum of 30% of the total forage intake during this period for ruminants that have reached sexual maturity. On all farms a minimum of 0.13 ha (1/3 acre) per animal unit must be devoted to grazing. (1 animal unit = one cow or one bull or two calves (225 to 500 kg) or five calves (each less than 225 kg) or four ewes and their lambs or six does and their kids).</p> <p>b. All other animals, including poultry, shall have access to the outdoors whenever weather conditions permit.</p> <p>c. See 6.8.2 and 6.8.4 for exceptions.</p>	<p>should take into consideration the availability of land for outdoor access and the potential for environmental pollution.</p> <p>In addition, there must be enough land available for ruminants to obtain feed from grazing during the grazing season. Minimum requirements ensure that producers actually meet the intent rather than just providing an open door or outdoor areas consisting of little more than bare ground.</p> <p>Although 1/3 acre is given as a minimum requirement, there are regions of Canada where a larger area is needed if pasture is to provide at least 30% of the forage intake. Note that this provision applies only to sexually mature ruminants.</p> <p>It is also recognized that there are times when outdoor or pasture access is inappropriate. This paragraph mentions the grazing season and weather conditions as temporary exemptions.</p>
<p><b>6.1.4</b> Livestock stocking rates shall recognize the differences between Canada's agro-climatic regions and take into consideration feed production capacity, stock health, nutrient balance and environmental impact.</p>	<p>The number of animals per unit area should be such that any pollution of soil, surface water, and groundwater is minimized, and overgrazing of pastures or poaching of soil does not occur. Integrated management of livestock and crop production should allow for the spreading of manures without adverse effects.</p> <p>Evidence of land degradation or excess nutrient runoff would indicate inadequate consideration of appropriate stocking rates.</p>
<p><b>6.1.5</b> Organic livestock management shall aim to utilize natural breeding methods, minimize stress, prevent disease, progressively eliminate the use of chemical allopathic veterinary drugs (including antibiotics), and maintain animal health and welfare.</p>	<p>This paragraph requires organic farmers to manage livestock in a manner that ensures a high standard of animal welfare and keeps animal stress to a minimum. If animals are stressed, there will be a greater incidence of disease requiring treatment.</p>
<p><b>6.2 Origin of Livestock</b></p> <p><b>6.2.1</b> The choice of breeds, strains and breeding methods shall be consistent with the principles of this standard and, in particular, shall take into account</p> <p>a. adaptation of livestock to local conditions;</p> <p>b. vitality and resistance of livestock to disease;</p> <p>c. absence of disease and health problems specific to breeds or strains.</p>	<p>Livestock bred to perform well in nonorganic management systems (and those with controlled environment housing) do not necessarily perform well under organic management or in alternative pasture-based systems. The objective of organic livestock management is to eliminate the need for health interventions. Assuming there are no identified animal welfare issues, certifying bodies should question the choice of breed when there is a high incidence of health problems requiring intervention, or requests to allow an exception to a particular part of the standards.</p>
<p><b>6.2.2</b> Livestock used for organic livestock products shall</p> <p>a. be born or hatched on production units conforming to this standard;</p> <p>b. have been the offspring of parents raised under the</p>	<p>The intention is that organic livestock products come from an organic production unit where all the animals (parents and offspring) are raised organically. Breeding animals cannot be moved in and out of organic</p>

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<p>conditions specified in this standard;</p> <p>c. be raised under this system throughout their life;</p> <p>d. exceptions to the requirements in par. 6.2.2 a., b. and c. are allowed for poultry and for herds or individual animals that are being converted to organic production:</p> <p>i. Poultry used for edible poultry products shall be poultry that have been under continuous organic management, in accordance with this standard, beginning no later than the second day of life; birds shall not have been given medication other than vaccines.</p> <p>ii. Animals used for milk production shall have been under continuous organic management, in accordance with this standard, for at least one year.</p> <p>iii. Animals used for meat shall have been under continuous organic management, in accordance with this standard, from the beginning of the last third of the gestation period (of the dam).</p>	<p>management.</p> <p>c. Allowances are made for situations in which a nonorganic herd or flock is brought under organic management, either during the farm transition period or when a breeding herd is expanded.</p> <p>i. Exceptions are allowed for poultry because there are not yet established operations supplying organic chicks in the quantities required for commercial production. There is, however, no other allowance for a transition period; chicks and pullets must be raised organically if they are to become an organic layer flock. A bird raised to organic standards from the beginning of life will be better suited to organic management when they reach production age.</p> <p>These standards also infer that laying flocks must not be treated with prohibited products (antibiotics, parasiticides). When it happens, the animals and the products of those animals become nonorganic.</p> <p>Vaccines for Marek's disease and Newcastle disease in poultry typically contain the antibiotic Gentamicin as a preservative at a concentration of less than 1%. The intent of the standards is that all vaccines should be allowed until vaccines produced without the use of antibiotics become available.</p> <p>ii. Replacement dairy animals on an organic farm must also be raised organically. This exception is only used when a herd is transitioned, if organic breeding stock is not available for herd expansion, or if an individual cow is returned to the herd or flock after treatment with prohibited products.</p> <p>iii. Livestock that are converted to organic production can never be sold for organic meat. This passage is not meant to allow breeding animals to be managed nonorganically (fed nonorganic feed, for example) and then returned to organic production at the beginning of the last third of gestation.</p> <p>Good records are needed to demonstrate when organic management of parent animals commenced, in order to comply with Passage 6.2.2 c iii.</p>
<p><b>6.2.3</b> 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</p>	<p>Before using nonorganic breeder stock, a producer must have a written record of the efforts made to find organic breeder stock. Availability is not well defined, but should include the notion of proximity. For example, transporting organic heifers over several days from</p>

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<p>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>Quebec to Alberta or British Columbia will be stressful for the animals and should not be encouraged. From an animal welfare perspective, if transit time is over 12 hours, producers should be allowed to purchase local nonorganic stock.</p> <p>If nonorganic animals acquired for breeding on an organic farm are sold, full disclosure of the origin of the animal must be provided to the buyer. These animals can never be sold for organic meat.</p> <p>These standards lacks specific requirements for rabbit production. The following paragraph from the Quebec standard provides some guidance: “Replacement rabbits shall not exceed 10% of livestock and shall be raised in compliance with organic standards for a period of 2 months. Note that only resultant litters may be marketed as ‘organic certified meat.’”</p>
<p><b>6.2.4</b> 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 being organically produced, in accordance with this standard.</p>	<p>Livestock cannot be moved in and out of organic production unless there are specified allowances for a transition period after treatment with a veterinary drug. Once removed from an organic operation, an animal ceases to be organic. Sales receipts and other livestock records should allow for the tracking of animals, including their destination upon leaving an organic operation.</p>
<p><b>6.3 Transition to Organic</b>  <b>6.3.1</b> When an entire dairy herd is being converted to organic production, the operator shall,</p> <ol style="list-style-type: none"> <li>a. in the first nine months of the transition year, provide a minimum of 80% feed, calculated by dry matter, that is either organic or raised from land included in the organic system plan and that is managed in accordance with organic crop requirements;</li> <li>b. in the final three months of the transition year, provide only organic feed conforming to this standard.</li> </ol>	<p>Producers in transition are encouraged to provide certified organic feed or transitional feed for the 12 months before the production of organic milk. However, for the first 9 months of the transition year, nonorganic sources are allowed for up to 20% of the total ration, calculated on the basis of dry matter intake. Detailed records of feed sources, quantities and dates fed will be necessary to verify the actual percentage of conventional feed used. This only applies when an entire dairy herd is being converted for the first time, and does not apply to replacement heifers or single animals that are brought onto the farm.</p> <p>Only organic feed can be used in the final three months, but Paragraph 6.3.3 allows for one exception: This feed can include that produced on the same farm, as long as the farm itself is in the third year of its own transition period, even though the feed is not yet certified organic.</p>
<p><b>6.3.2</b> The transition of the land intended for feed crops or pasture shall comply with par. 5.1.</p>	<p>i.e., 36 months without the use of prohibited materials before the harvest of the feed crop.</p>

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<p><b>6.3.3</b> During the final year of transition, animal feed and pasture of the enterprise can be used as organic by the production unit of the enterprise. The feed shall not be considered as organic outside of this unit.</p>	<p>This allows animals and crops on an organic farm to transition simultaneously, rather than waiting until all forages are certified before starting the transition of the herd or flock. Pasture and hay from the same farm that is in the third year of transition can be fed to the organic herd as organic. The feed cannot be used on another farm as organic.</p> <p>In the case of a layer flock when outdoor pasture and runs are utilized, the pasture/run can be considered organic in the 3<sup>rd</sup> year of transition so that eggs can also be organic when the farm achieves certification status providing all other requirements have been met since hatching.</p> <p>It was not the intent that this section of the standards apply to meat birds given their short life span.</p>
<p><b>6.4 Livestock Feed</b></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. During a local farm scale catastrophic event (e.g. fire, flood, or extreme climatic conditions) where organic feed is unobtainable, an exception to this specification of up to 10 consecutive days may be allowed so that the livestock are provided a balanced diet. Under this exemption, feed from land in transition to organic production and known to be free of substances prohibited by par.1.4.1 shall be used in preference to non-organic feed.</p>	<p>Generally, if organic feed cannot be sourced in sufficient quantity and type to provide a balanced ration suited to the type of livestock, the livestock cannot be considered organic.</p> <p>This exception allows for a producer to source whatever feed is available to feed animals in a short-term emergency situation without losing organic status and without first having to get specific permission from the certifier. However, the certifying body should be notified when such events occur. There is no allowance for long-term use of nonorganic feed in situations of short supply that are due to ongoing circumstances such as drought. If organic feed is not available, the livestock cannot be considered organic.</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>This paragraph states that not only must feedstuffs meet the nutritional requirements of the animals (which will be reflected in the observed physical condition of the animals), they must also be of a type suited to the animal's physiology and natural feeding behaviours. See Paragraph 6.4.3 for specific examples.</p>
<p><b>6.4.3</b> Specific livestock rations shall take into account the following:</p> <ol style="list-style-type: none"> <li>for young mammals, the need for natural milk, including colostrum within the first day of life</li> <li>for ruminants, that at least 60% of dry matter in daily rations consists of hay, fresh/dried fodder or silage</li> <li>for ruminant animals, when silage is fed, dry hay is provided for at least 25% of the forage ration</li> <li>for poultry, when in the finishing phase, the need for grains</li> <li>for poultry and pigs, the need for vegetable matter other than grain.</li> </ol>	<ol style="list-style-type: none"> <li>calves should receive whole milk until 3 months of age, sheep and goats until 45 days of age. In order to achieve the maximum health benefits in an organic management system, piglets should not be weaned until at least 5 weeks of age (and preferably not until 8 weeks), unless this adversely affects the welfare of the sow or piglets.</li> <li>Vegetable matter is required for pigs <ul style="list-style-type: none"> <li>to satisfy hunger</li> <li>to satisfy their need to chew</li> <li>to allow for natural foraging behaviour</li> </ul> </li> </ol>

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	<ul style="list-style-type: none"> <li>• because they need access to roughage.</li> </ul> <p>Green matter can provide a natural source of vitamins, minerals and amino acids for poultry (e.g. grass/clover forage with chicory can contribute 70% of requirements for lysine and methionine). Green matter is also considered an important environmental enrichment aid which helps decrease or prevent feather pecking.</p> <p>These standards do not contain specific production requirements for rabbits. The following passage from the Quebec standard provides some guidance: “Full weaning of rabbits shall not take place before the age of 35 days.”</p>
<p><b>6.4.4</b> The operator of an organic operation shall not provide organic livestock with</p> <ol style="list-style-type: none"> <li>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>feed medications or veterinary drugs, including hormones and prophylactic antibiotics, to promote growth;</li> <li>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>feeds chemically extracted or defatted with prohibited substances prohibited by par. 1.4.1;</li> <li>feed that contains mammalian or avian slaughter by-products;</li> <li>feed that contains synthetic preservation agents;</li> <li>silage preservation products except for products listed in CAN/CGSB-32.311, <i>Organic Production Systems – Permitted Substances Lists</i>;</li> <li>synthetic appetite-enhancers or synthetic flavour-enhancers;</li> <li>feed formulas containing manure or other animal waste;</li> <li>feed that contains synthetic colouring-agents.</li> </ol>	<p>These prohibitions ensure that livestock are fed as naturally as possible without the use of drugs to promote growth. Also, feeds cannot contain veterinary drugs such as coccidiostats or antibiotics as disease prevention measures.</p> <p>The Permitted Substances Lists (PSL) (CAN/CGSB-32.311-2006) list in broad categories the types of additives and supplements that are allowed and any conditions that apply to their use. Recognizing that the feed available for rations may not always provide the trace minerals and vitamins needed for good health and adequate nutrition, supplements are allowed but should be of nonsynthetic origin whenever possible. Supplements of synthetic origin are only allowed when nonsynthetic ones are unavailable. Probiotics, enzymes and microorganisms are allowed.</p> <p>e. The prohibition of the byproducts of mammalian or avian slaughter is just that– it does not preclude the use of milk, milk products, eggs, or egg products as poultry feed.</p> <p>g. Allowed silage preservatives are sea salt, coarse rock salt, yeasts, bacteria, enzymes, whey, sugar or sugar products such as molasses and honey. Weak acids such as lactic acid, acetic acid, formic acid and propionic acid are allowed when weather conditions are unfavourable for adequate fermentation using other methods. The speed of bacterial action, resulting from inoculating high numbers of bacteria, improves the quality of silage, particularly that of alfalfa silage.</p>
<p><b>6.4.5</b> Animals shall be provided with clean fresh water on demand.</p>	<p>Water used for livestock drinking water should be tested and remedial action taken if the water is found to be contaminated. Certifying body inspectors will need to determine if water is readily accessible for the numbers of animals housed.</p> <p>For example, there should be 1 bell drinker per 120 broiler chickens, or 5-20 birds per nipple; 50-75 layer chickens per round waterer, 6-10 per nipple or cup; one nipple for 1-15 pigs or 6 sows. 10% of cattle should be able to drink at one time</p>
<p><b>6.4.6</b> The force feeding of ducks and geese is prohibited.</p>	<p>Force-feeding ducks and geese by inserting a tube into</p>

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	the throat to enlarge the liver (to produce an organic version of <i>foie gras</i> ) is not compatible with the principles of organic production. It is considered cruel and stressful for the birds, negatively affecting liver function and potentially causing wounds.
<p><b>6.5 Breeding</b> – Breeding methods shall conform to the principles of organic production in this standard. The operator shall</p> <ol style="list-style-type: none"> <li>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;</li> <li>use natural methods of reproduction; however, artificial insemination is permitted;</li> <li>not use embryo transfer techniques or breeding techniques using genetic engineering or related technology;</li> <li>not use reproductive hormones to trigger and synchronize estrus.</li> </ol>	<p>See guidance for Paragraph 6.2.1.</p> <ol style="list-style-type: none"> <li>For example, this can refer to selecting polled cattle (to avoid the need for dehorning), and employing breeding programs that select for sows with good mothering abilities.</li> <li>Artificial insemination must be performed by a person proficient in the procedure. Trained personnel should be used to collect semen for semen testing of breeding males. Collections must be done in a manner which minimizes stress and distress. Electroejaculation should not be carried out.</li> <li>Organic methods respect natural behaviours and cycles; human manipulation using hormones or technologies such as embryo transfer or cloning are not appropriate. Calving aids should only be used to assist delivery, and not to produce a calf as quickly as possible.</li> </ol> <p>This standard does not contain specific production requirements for rabbits. The following paragraph from the Quebec standard provides some guidance: “The minimum age for the first litter is 16 weeks. The number of litters per female should not exceed 6 per year.”</p>
<p><b>6.6 Transport and Handling</b></p> <p><b>6.6.1</b> Livestock shall be managed responsibly with care and respect. Stress shall be minimized in all handling practices.</p> <p><i>Note: In Canada, see also the Health of Animals Regulations under the Health of Animals Act (Canadian Food Inspection Agency).</i></p>	<p><i>Recommended Code of Practice for the Care and Handling of Farm Animals during Transport (2001)</i> should be followed as a minimum standard. For poultry, the following documents should be followed:</p> <ul style="list-style-type: none"> <li><i>Recommended Code of Practice for the Care and Handling of Farm Animals - Chickens, Turkeys and Breeders from Hatchery to Processing Plant;</i></li> <li><i>Recommended Code of Practice for the Care and Handling of Pullets, Layers and Spent Fowl.</i></li> </ul> <p>These documents are currently managed by the National Farm Animal Care Council.</p> <p>Producers are advised to study the recommendations of Temple Grandin (<a href="http://www.grandin.com">www.grandin.com</a>) for handling facilities and methods which are the least stressful for livestock and handler.</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>The inspection of slaughter facilities needs to consider the design of the facility as well as the methods used. Pens and races need to be in good condition so as not to cause injury. Facilities need to allow animals to move</p>

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	without stress to ensure that they do not become agitated. For poultry, operators and certifying bodies should consider how the birds are handled, that crates are not dropped or tipped, that belts, lines and shackles are in good repair, and that birds are only hung on a shackle by both legs.
<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.	Inspection should verify the modes of transportation and determine if they are suitable for the type and number of livestock being moved, while also taking into consideration the time of year.
<b>6.6.4</b> Efforts shall be made to transport animals directly from the farm to their final destination.	The standards do not prohibit auctions or the use of sale yards, but their use is discouraged for animal welfare reasons, even for cull animals.
<b>6.6.5</b> The duration of transportation shall be as short as possible.	For red meat animals, the duration of transportation ideally should be less than 8 hours, with good ventilation provided regardless of distances travelled. Transportation longer than 8 hours should include sufficient bedding and feed. Water must be provided at the end of the journey. Transit time must not exceed 24 hours unless a 5-hour rest period is provided (Health of Animals Regulations state that the rest period must be at least 5 hours, and more if not all animals have had the opportunity to satisfy their feed and water requirements). Only approved haulers should be used.  Thirty-six hours is the maximum travel time for poultry according to the <i>Recommended Code of Practice for the Care and Handling of Farm Animals during Transport (2001)</i> .
<b>6.6.6</b> Animals too ill to be transported shall be suitably euthanized, without cruelty.	To euthanize without cruelty implies the use of a trained competent person or veterinarian and well maintained equipment to achieve quick and painless death. Manually applied blunt trauma to the head is not an appropriate method for cattle.  Penetrating captive bolt and gunshot are methods which can be used by nonveterinarians. Lethal injection by a licensed veterinarian is recommended for emergency euthanasia. For poultry, cervical dislocation (for smaller birds) and a quick firm blow to the head after proper restraint of the bird (for larger birds) are acceptable.
<b>6.7 Livestock Health Care</b>  <b>6.7.1</b> The operator shall establish and maintain preventive livestock health care practices, including a. the choice of appropriate breeds or strains of animals, as specified in par. 6.2.1; 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	Paragraph 6.7.1 outlines the combination of management practices that are necessary in order to prevent disease, develop a strong immune system, and promote wellness. Diet, housing, handling and observation all contribute to good health. If there are health problems, it is up to the producer to look at all aspects of the operation to determine the contributing factors and develop a plan to rectify the problems. A certifying body should ensure that producers have reviewed the operation in its entirety, and that they consult with a licensed veterinarian when there are recurrent health problems.

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<p>of diseases and parasites;</p> <p>d. the provision of conditions that allow for exercise, freedom of movement, and a reduction in stress appropriate to the species;</p> <p>e. the provision of prompt treatment for animals with detectable disease, lesions, lameness, injury and other physical ailments;</p> <p>f. 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 combated by other means.</p>	<p>Livestock should be checked regularly, particularly for lameness and foot ailments which are often associated with inadequate housing, pen or pasture conditions. If lameness is detected in more than 10% of a herd (or flock), it is an indicator of poor welfare standards and requires corrective action on the part of the producer. Producers should be aware of the possible risk factors and provide adequate foot care for all animals. For dairy cattle this would include regular feet trimming at least twice per year.</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>a. Beak trimming and de-toeing of birds, tail docking of pigs and trimming of needle teeth in piglets are only allowed when necessary to control problem behaviour that has a negative impact on the welfare of other animals. Operators shall document the measures taken to control or eliminate the behaviour.</p> <p>b. Tail docking of cattle is prohibited except when necessary for veterinary treatment of injured animals.</p> <p>c. The following procedures are allowed under the conditions specified in par. 6.7.2</p> <p>i. castration of piglets, lambs and calves</p>	<p>Producers should be aware of the methods that cause the least pain and stress when carrying out these procedures. Pain can be reduced by using local anaesthetics, nonsteroid analgesics (painkillers), and sedatives which are allowed for this purpose.</p> <p>a. The procedures listed in Passage 6.7.2.a should not be undertaken as a matter of course. It is assumed that these aggressive procedures are used only when inevitable.</p> <p>Beak trimming is considered necessary to reduce damage caused by feather pecking or outbreaks of cannibalism in large flocks, and the procedure should be carried out at an early age (i.e., before the problems arise). However, it does not address the cause of the behaviour.</p> <p>Producers should be able to demonstrate that they have investigated the causes of problems and made any necessary adjustments to the environment, stocking densities or other management practices. Trimming of needle teeth is not considered absolutely necessary. Litters should be monitored carefully; there are more likely to be problems with larger litters where competition is greater. If needle teeth are causing injury, a grinder can be used to blunt the tips.</p> <p>b. Although tail docking of pigs is not specifically prohibited, it is not considered a necessary practice. Tail biting is related to welfare deficiencies such as overcrowded pens without bedding. It can be prevented by providing a behaviourally-appropriate and comfortable environment— one that allows nosing, chewing and rooting in straw for example, rather than having the pigs redirect this behaviour towards companions in an aggressive manner.</p> <p>c. Castration methods include:</p> <ul style="list-style-type: none"> <li>• rubber rings, which can be used only in the first 7 days of life;</li> <li>• bloodless castration by crushing (using a</li> </ul>

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<ul style="list-style-type: none"> <li>ii. docking of lambs' tails</li> <li>iii. branding and ear tagging</li> <li>iv. dehorning and debudding (use of anaesthetics or sedatives is required for dairy calves).</li> </ul>	<p>Burdizzo); and</p> <ul style="list-style-type: none"> <li>• surgical castration</li> </ul> <p>All three methods cause pain, irrespective of the age of the animal. The use of rubber rings shortly after birth causes the least acute pain, but is stressful for a much longer time than surgical or Burdizzo castration. Procedures are best performed at a young age with the use of analgesics and sedatives. If pigs are castrated, it should be done before the piglets reach 2 weeks of age, unless anaesthetics and analgesics are used.</p> <p>Branding is not necessary for dairy cattle and should only be used when all other viable identification alternatives have been shown not to work.</p> <p>Ear notching of pigs within the first week of life is considered an acceptable alternative to the use of ear tags for identification, because ear tags have a poor retention rate in pigs.</p> <p>Removal of the horn buds of calves with caustic paste (lime is prohibited), analgesics and sedatives is less traumatic than hot-iron dehorning with an anaesthetic (lidocaine). Adult cattle should not undergo dehorning procedures.</p> <p>Nose rings have not yet been discussed by the Canadian General Standards Board's (CGSB) Committee on Organic Agriculture. They are not explicitly prohibited, but do inhibit natural behaviours. Producers should be encouraged to develop other strategies for controlling pasture damage (rotation, stocking density adjustments, raising different breeds, etc.) before resorting to the use of nose rings.</p> <p>Spaying of female beef cattle is not specifically mentioned but is unnecessary and should not be allowed.</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>Even with preventive measures in place, it is probable that one or more animals will need treatment for disease or injury. Methods of treatment that do not require the use of antibiotics or other veterinary drugs are encouraged as the first course of action. Allowed treatments include homeopathy, the use of ayurvedic and herbal products, acupuncture, provision of trace elements or vitamins, and the use of probiotics. Early intervention is essential to the success of such treatments.</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>If the animal is not responding to biological treatment, then appropriate antibiotic or other veterinary drugs must be given so as to prevent further pain and suffering, even if it means the animal can no longer be considered organic.</p> <p>Animals should be monitored regularly for health, and</p>

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	sick or diseased animals separated and placed in suitable housing unless separation causes further distress. In such situations, visual and auditory contact should be maintained with other animals.
<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>Under this paragraph, once a sick animal has completed a course of treatment, including</p> <ul style="list-style-type: none"> <li>• the period of withdrawal from organic status stipulated on the medicine label;</li> <li>• the minimum 14 day withdrawal from organic status. The animal's milk can be used to feed young organic animals even though the milk cannot be sold as organic for 30 days after treatment.</li> </ul>
<p><b>6.7.6</b> The use of veterinary medicinal substances in organic production systems shall conform to the following:</p> <p>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.</p> <p>b. Phytotherapeutic (i.e. 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.</p> <p>c. If the use of products in par. 6.7.6 a. and b. is unlikely to be effective in combating illness or injury, chemical allopathic drugs (not listed in CAN/CGSB-32.311, <i>Organic Productions Systems – Permitted Substances Lists</i>) may be administered under veterinary supervision. Some restrictions apply when meat animals are treated (see 6.7.7, 6.7.8 e. and 6.7.9.</p> <p>d. When veterinary drugs other than those with specific requirements listed in this standard or CAN/CGSB-32.311, <i>Organic Productions Systems – Permitted Substances Lists</i>, are used, a withholding period equivalent to double the label requirement or 14 days, whichever is longest shall be observed before the products from treated livestock can be considered organic.</p> <p>e. Antibiotic treatment of dairy animals is permitted in emergencies under the following conditions:</p> <ol style="list-style-type: none"> <li>i. The operator shall have written instructions from a veterinarian indicating the product used and treatment method used.</li> <li>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.</li> </ol>	<p>The standards encourage the use of alternative treatments (e.g. homeopathy and herbal treatments) over regular veterinary drugs. Vaccines are allowed for a known disease risk. However, if the animal is not responding to biological treatment, the use of antibiotics, parasiticides and other medications is allowed with the additional restrictions outlined here.</p> <p>c. ‘Chemical allopathic drugs’ refer to synthetic drugs used in mainstream medicine. ‘Administered under veterinary supervision’ means that the drug must be administered or at least prescribed by a veterinarian.</p> <p>d. The intent of this passage is to allow the use of certain veterinary drugs without loss of organic status even though they are not specifically listed in the Permitted Substances List. It only applies when the drug type is not prohibited by 6.7.7 and 6.7.8 or if there are no other conditions on their use e.g. 6.7.6e, and 6.7.9. The label on any veterinary medication states the length of time required after the use of the medication before a livestock product from the animal (e.g. meat, milk) can be consumed. In organic production, this time must be doubled. In cases where there is no withdrawal listed or it is very short, a minimum of 14 days is required unless the Permitted Substances Lists state otherwise.</p> <p>e. Treatment of dairy animals with antibiotics is allowed only in emergencies, and not on a regular basis. It is not possible to keep the animal in organic production if it has to be treated more than twice during any year. It makes no difference whether the treatments are with antibiotics or parasiticides; after a third treatment the animal must undergo a 12-month transition before milk can be organic. If an animal has to be treated repeatedly for the</p>

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<ul style="list-style-type: none"> <li>iii. Antibiotic use shall be documented in herd health record.</li> <li>iv. Dairy animals shall undergo only two treatments (of combined parasiticides and antibiotics) per year. Dairy animals that require more than two treatments shall undergo a 12-month transition period.</li> <li>v. Dairy animals with chronic conditions requiring repeated use of this practice shall be removed from the herd.</li> </ul>	<p>same condition, it is not well adapted to the production system and must be removed from the organic herd or flock.</p> <p>In order to comply with Passage ‘e’ of this paragraph and to ensure treated livestock are not used as organic for meat purposes, any livestock treated with a chemical allopathic drug must be clearly identified and treatments of all kinds must be recorded, including treatment with homeopathic or natural remedies. Records must include:</p> <ol style="list-style-type: none"> <li>1. details of all treatments, such as their duration and the trade names of substances used;</li> <li>2. records of all treatments in association with adequate animal/flock/colony identification at all stages of production, transportation, distribution, slaughter and processing;</li> <li>3. the disposal methods of milk, waste or other products from treated livestock.</li> </ol> <p>Dairy cows too sick or weak to make it to the milking parlour, or those with a chance of going down in the milking parlour must be milked in a hospital pen by portable machine or by hand.</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>The only hormone that can be used without affecting the organic status of an animal sold for meat is oxytocin, when used to treat postparturition conditions such as retained placenta and failure to let down milk.</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 vaccinations, 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>	<ul style="list-style-type: none"> <li>a. The only veterinary drugs that can be used in the absence of illness are those used to reduce pain and stress when dehorning, castrating or carrying out other allowed physical alterations.</li> <li>d. If a meat animal is treated with an antibiotic it loses its organic status. However, that animal may remain in the herd, provided it is permanently marked. Unless specific exceptions are provided in the standards, eggs and meat from poultry that have been treated with antibiotics are considered nonorganic.</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 parasite outbreak.</li> </ul>	<p>The plan should be documented and clearly state all the measures that are in place to prevent parasites reaching a level that negatively affects the welfare of the animals. The plan must not rely on the regular use of synthetic parasiticides (anthelmintics). Regular pasture rotations should be a key element of the plan- the length of the rotation required depends on the particular parasite and the climate.</p>

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<p><b>b.</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</p> <ul style="list-style-type: none"> <li><b>i.</b> observation of the animal or fecal samples as appropriate for the species indicate the livestock is infected with parasites;</li> <li><b>ii.</b> the operator has received written instructions from a veterinarian indicating the product and method for parasite control that shall be used;</li> <li><b>iii.</b> withdrawal times shall be twice the label requirement or 14 days whichever is longer;</li> <li><b>iv.</b> 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><b>v.</b> 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><b>vi.</b> under this derogation, a dam may be treated during gestation;</li> <li><b>vii.</b> 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><b>viii.</b> the operator shall have a written action plan (including timing), describing how they will amend their parasite control plan, to avoid similar emergencies.</li> </ul>	<p><b>b.</b> Derogation is allowed in recognition that internal parasites are problematic for young livestock and particularly so for lambs under certain climatic conditions. The operator must prove that parasites are the problem and consult with a licensed veterinarian before any treatment occurs. Such treatments cannot be a regular part of the annual management cycle.</p> <p><b>iv.</b> Young animals cannot be treated more than once if sent to slaughter before they are one year old. Older animals can maintain organic status as long as they are not treated (with parasiticides) more than twice before they are sent for slaughter. Treated livestock must be clearly identified and precise records kept of any treatment.</p> <p>Dairy animals are allowed two treatments of parasiticides per year, or two treatments of antibiotic per year, or one treatment of each per year.</p> <p><b>v.</b> If a dam is treated (with parasiticides) during gestation, it does not affect the organic status of the offspring.</p>
<p><b>6.7.10</b> Except as provided in par. 6.7.9, no breeding livestock or poultry treated with a parasiticide or veterinary drug (not listed in CAN/CGSB-32.311, <i>Organic Production Systems, Permitted Substances Lists</i>) is an organic meat animal.</p>	<p>This means that if veterinary drugs are used for poultry or breeding animals in a manner that does not comply with Paragraph 6.7 of the standards, the animals cannot be slaughtered for organic meat.</p>
<p><b>6.7.11</b> Injured, diseased or sick animals shall receive individual treatment designed to minimize pain and suffering, which may include euthanasia.</p>	<p>Any sick or injured animal must always be treated with respect, and every effort made to reduce suffering. This paragraph means that cull animals must be adequately cared for up to slaughter.</p>
<p><b>6.7.12</b> Force moulting of poultry is prohibited.</p>	
<p><b>6.8 Livestock Living Conditions</b></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</p>	<p>This paragraph covers the living conditions in any of the following areas used for livestock:</p> <ol style="list-style-type: none"> <li>1. Barns - roofed structures for animal confinement</li> </ol>

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<p>animals, including</p> <ol style="list-style-type: none"> <li>a. access to the outdoors, shade, shelter, rotational pasture, exercise areas, fresh air and natural daylight suitable to the species, its stage of production, the climate and the environment;</li> <li>b. access to fresh water and high-quality feed in accordance with the needs of the animal;</li> <li>c. sufficient space and freedom to lie down in full lateral recumbency, stand up, stretch their limbs and turn freely, and express normal patterns of behaviour;</li> <li>d. space allowances appropriate to local conditions, feed production capacity, livestock health, nutrient balance of livestock and soils, and environmental impact;</li> <li>e. production techniques that foster the long-term health of livestock, especially where animals are required to provide a high level of production or rate of growth;</li> <li>f. appropriate resting and bedding areas in accordance with the needs of the animal;</li> <li>g. livestock housing shall have non-slip floors. The floor shall not be entirely of slatted or grid construction. Buildings shall have areas for bedding and resting that are sufficiently large, solidly built, comfortable, clean and dry. They shall be covered with a thick layer of dry bedding that can absorb excrement. Where bedding material is typically consumed by the animal species, it shall conform to the feed requirements of this standard. Where bedding is not typically consumed by the animal species (e.g. lactating dairy cows), straw used for the bedding shall be free from the application of substances prohibited by par 1.4.1 for at least 60 days prior to harvest;</li> <li>h. the outdoor stocking density of pasture and runs shall be low enough to prevent soil degradation by the livestock and overgrazing of vegetation.</li> </ol>	<ol style="list-style-type: none"> <li>2. Runs - exercise areas connected to barns- little or no pasture</li> <li>3. Corrals - fenced areas without pasture</li> <li>4. Paddocks - fenced areas with or without pasture</li> <li>5. Pastures - fenced areas with grass that animals can eat</li> <li>6. Rangeland - large areas of unfenced and uncultivated pasture.</li> </ol> <p>The opening sentence states the intent of the paragraph, while Passages a–h expand on the aspects that need to be considered to determine if this has been achieved. Access to the outdoors is necessary for all livestock, but it is also recognised that in the Canadian climate there will be times when outdoor access is problematic for some types of livestock. Cold temperatures are not a good reason to keep animals confined, but protection is needed from excessive exposure to sunlight, extreme temperatures, precipitation and wind (e.g. in the form or shade or windbreaks). Poultry do not utilize outdoor runs when there is snow on the ground and it is therefore unreasonable to enforce the outdoor access requirement from November to March in many parts of Canada. However, poultry will venture outside, even in very cold temperatures, if covered patios are provided.</p> <p>Although the passage does not dictate that organic pigs be raised on pasture, access to pasture or fields from spring to fall is encouraged, particularly for the breeding herd.</p> <p>All facilities used to confine livestock must protect the animals' health and welfare. They should be conducive to the animals' normal social behaviour (including the ability to make some contact with other animals and to escape from aggression), as well as allowing for normal feeding behaviour and bedding practices. In addition, facilities should provide the animals with hygienic, comfortable surroundings and fresh air, and should allow for exercise. Facilities must also be designed to reduce the potential for injury- hence the requirement for nonslip flooring.</p> <p>Some of the floor may be slatted, but not all. While the standards do not specify the allowed percentage of slatted floors, this is recommended for no more than one-third of the total floor area. Further restrictions on slatted floors are likely in the future, given the higher incidence of foot and leg injuries on slatted floors than on solid ones.</p> <p>The prohibition on totally slatted or gridded floors applies to all livestock facilities including poultry barns. In the case of poultry, "bedding" means a layer of litter material. Litter such as straw or wood shavings, which the birds can use to exhibit natural pecking and foraging</p>

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	<p>behaviour, is particularly important in winter if birds do not have access to outdoor runs.</p> <p>The operator and the certifying body inspector need to be aware of the natural behaviour patterns of the type of livestock being raised, in order to interpret the standards as intended. For example, although the standards do not say that laying hens must have perches, it is understood that perches are necessary because the natural behaviour of the bird is to roost on an elevated perch.</p> <p>Pigs should be raised in an environment which recognizes that they are strongly motivated to graze, forage and root for food, to explore and socialize with other members of their herd or litter, and to build a nest at farrowing. Availability of straw is important in this regard. They will also need access to a means of cooling (e.g. wallows, sprinklers or fans) whenever temperatures exceed 18°C.</p> <p>This paragraph does not explicitly refer to temperature or air quality in housing, but good air quality is another aspect that must be considered to ensure good health.</p> <p>Aerial contaminants inside barns (e.g. dust, ammonia) should not reach sustained levels at which they are deleterious to livestock or human health. The following guidelines are from the Canadian General Standards Board:</p> <ul style="list-style-type: none"> <li>• Ammonia: ≤10ppm</li> <li>• Carbon dioxide: ≤3000ppm</li> <li>• Hydrogen sulphide: ≤0.5ppm</li> <li>• Dust: ≤10mg per cubic metre</li> </ul> <p>Similarly, the potential negative effects on behaviour and comfort of other environmental factors such as construction design, toxic materials (e.g. lead paint), spurious electrical discharge, and excessive noise (louder than 100 dB) must be taken into account.</p>

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<p><b>6.8.2</b> The operator of an organic livestock operation may provide temporary confinement for livestock owing to</p> <ol style="list-style-type: none"> <li>inclement weather;</li> <li>animal's stage of production;</li> <li>conditions where the health, safety or well-being of the animal could be jeopardized given its stage of production;</li> <li>risks relating to soil, water or plant quality.</li> </ol>	<p>Livestock should only be confined if outside conditions will negatively affect their welfare. For example, young birds are usually confined until fully feathered. Operators should be able to identify specific risks (such as high parasite loads contaminating pasture) to justify keeping young livestock confined.</p> <p>A hypothetical risk with no scientific justification or substantive evidence, such as the threat of avian flu posed by wild birds, is not considered justification for restricting outside access for poultry.</p> <p>Systems should be designed such that livestock and stocking densities do not negatively affect soil, water or plant quality, and conversely, organic livestock operations should not be located where there are known risks which would prevent animals from being allowed outside. Certifying bodies would only allow exceptions relating to the quality of water, soil or plants in exceptional circumstances.</p> <p>These standards lack specific production requirements for rabbits. The following paragraphs from the Quebec standard provide some guidance:</p> <ul style="list-style-type: none"> <li>“The lack of outside access for rabbits is allowed from the 19th day until the 28th day of pregnancy, and also from the birthing day until the 21st day of weaning.”</li> <li>“Both the raising of rabbits until weaned and the final fattening phase for meat production may take place inside.”</li> </ul>
<p><b>6.8.3</b> Except for lactating cows, the continuous tethering of livestock is not permitted. When tie stalls are used in dairy barns in the winter season, cows shall be allowed a period of exercise each day, when possible, and at least twice a week.</p>	<p>This paragraph is a compromise. Tethering of dairy cows in winter is only allowed because it is recognized that not all producers can build a new barn in order to convert to organic production. It is not acceptable to build new facilities designed for tethering cows.</p> <p>Temporary restraint is sometimes necessary for veterinary treatment and is allowed.</p>
<p><b>6.8.4</b> Housing, pens, runs, equipment and utensils shall be properly cleaned and disinfected to prevent cross infection and build-up of disease-carrying organisms.</p>	<p>Materials allowed for cleaning and disinfecting are listed in Section 7 of the Permitted Substances Lists (PSL) (CAN/CGSB-32.311-2006). Paragraph 6.8.4 applies to methods of cleaning buildings when empty, and also to routine cleaning.</p>
<p><b>6.8.5</b> All livestock in single production units shall be reared in accordance with this standard. Other non-organic livestock production units may be present in the establishment if they are clearly identified and kept separate from organic livestock production.</p>	<p>This paragraph is equivalent to the prohibition of parallel production of crops. Different livestock types may be managed differently as they are clearly different production units.</p> <p>A breeding herd and offspring are considered a single production unit.</p> <p>If there are two layer flocks housed in different barns on</p>

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	<p>the same property, they would both have to be managed organically unless clearly distinguishable– this would only be the case if the one flock laid brown eggs and the other white eggs.</p> <p>If an operator has a herd containing both nonorganic and organic dairy livestock, the two types should be clearly separated on different farm sites and under a different operation name. See guidance to Paragraph 4.4.3.</p>
<p><b>6.8.6</b> Animals reared in accordance with the provisions of this standard may be grazed with other animals on common land (i.e. crown range or community pasture), provided that*</p> <ol style="list-style-type: none"> <li>this land has not been treated with products other than those allowed in accordance with this standard for at least three years;</li> <li>health care and feed products available to organic livestock on common land shall be in accordance with this standard;</li> <li>identification permits clear distinction between organically raised animals and non-organically raised animals.</li> </ol>	<p>Regarding activities affecting common land, the operator must obtain documentation from the relevant agencies demonstrating that no treatment with prohibited products has occurred on the common land. In the case of public land, this may be the regional forest service or any agency having jurisdiction. Assurance will also be required from other producers with livestock on common land that health care or feed products that they use (e.g. mineral licks) are compliant with the standards.</p>
<p><b>6.8.7</b> Herbivores shall have access to pasture, during the grazing season, and to the open air or outdoor exercise areas at other times, weather permitting. Exceptions to the pasture requirement are allowed for:</p> <ol style="list-style-type: none"> <li>breeding males;</li> <li>the final finishing phase - when cattle are confined for finishing there shall be at least 23 m<sup>2</sup>/animal;</li> <li>young animals when health and welfare is jeopardized.</li> </ol>	<p>Whenever possible, dairy cattle should have access to pasture in the summer months. Research has shown that this can reduce the incidence of various health problems such as mastitis, metritis and lameness. It is recommended that cattle be pastured for a minimum of 120 days per year during the appropriate seasons. Shade must be provided to prevent heat stress during hot sunny days.</p> <p>Pasture should supply the majority of dry matter intakes and nutritional requirements for cattle and sheep during the grazing season. In some areas, growing conditions (e.g. drought) during the grazing season may not always be conducive to pasturing. In these cases, exceptions may be made provided the animals have access to pasture or outdoor exercise paddocks at least 4-5 hours a day. Where pasture conditions become inadequate to meet body condition needs of the livestock, supplementary forage must be provided <i>ad hoc</i>.</p> <p>A conventional feedlot system of beef production, where cattle are confined and fed a high energy, grain-based ration, is not acceptable for organic production. However, the standards do not prohibit the confining of cattle to paddocks for the final production phase before slaughter and feeding with an appropriate forage/grain finishing ration. Depending on the breed, cattle should be pastured until they reach at least 360-400 kg. (800-900 lbs.) before finishing.</p>

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<p><b>6.8.8 Cattle</b> – The minimum indoor and outdoor space requirements for cattle are as follows:</p> <table border="1" data-bbox="155 344 787 722"> <thead> <tr> <th></th> <th>Indoor Space</th> <th>Outdoor Runs and Pens</th> </tr> </thead> <tbody> <tr> <td>Adult cows</td> <td>6 m<sup>2</sup>/head</td> <td>9 m<sup>2</sup>/head</td> </tr> <tr> <td>Calves</td> <td>Incremental increase of 2.5 m<sup>2</sup>/head for young calves to 5 m<sup>2</sup>/head for growing (1-year old) steers and heifers</td> <td>5 m<sup>2</sup>/head to 9 m<sup>2</sup>/head, depending on the size of animals</td> </tr> </tbody> </table>		Indoor Space	Outdoor Runs and Pens	Adult cows	6 m <sup>2</sup> /head	9 m <sup>2</sup> /head	Calves	Incremental increase of 2.5 m <sup>2</sup> /head for young calves to 5 m <sup>2</sup> /head for growing (1-year old) steers and heifers	5 m <sup>2</sup> /head to 9 m <sup>2</sup> /head, depending on the size of animals	<p>This paragraph means that if indoor housing is used, it must comply with these space requirements. It does not mean that cattle have to have indoor space.</p> <p>All animals in a pen should be able to lie down and rest comfortably at the same time. Space allowances should also take into account the presence or absence of horns.</p>
	Indoor Space	Outdoor Runs and Pens								
Adult cows	6 m <sup>2</sup> /head	9 m <sup>2</sup> /head								
Calves	Incremental increase of 2.5 m <sup>2</sup> /head for young calves to 5 m <sup>2</sup> /head for growing (1-year old) steers and heifers	5 m <sup>2</sup> /head to 9 m <sup>2</sup> /head, depending on the size of animals								
<p><b>6.8.9 Sheep and Goats</b> – The minimum indoor outdoor space requirements for sheep and goats are as follows:</p> <table border="1" data-bbox="155 835 787 961"> <thead> <tr> <th>Indoor Space</th> <th>Outdoor Runs and Pens</th> </tr> </thead> <tbody> <tr> <td>1.5 m<sup>2</sup>/head plus 0.35 m<sup>2</sup>/head for each additional lamb/kid</td> <td>2.5 m<sup>2</sup>/head plus 0.5 m<sup>2</sup>/head for each additional lamb/kid</td> </tr> </tbody> </table>	Indoor Space	Outdoor Runs and Pens	1.5 m <sup>2</sup> /head plus 0.35 m <sup>2</sup> /head for each additional lamb/kid	2.5 m <sup>2</sup> /head plus 0.5 m <sup>2</sup> /head for each additional lamb/kid	<p>This paragraph means that if indoor housing is used, it must comply with these space requirements. It does not mean that sheep have to have indoor space. In Canada, sheep are most often housed indoors during the winter months and at lambing. Depending on the predator threat, they may also be brought into pens or paddocks close to the barn at night. Available space should be verified based on the number of ewes, even if the flock is on pasture at the time of the inspection.</p>					
Indoor Space	Outdoor Runs and Pens									
1.5 m <sup>2</sup> /head plus 0.35 m <sup>2</sup> /head for each additional lamb/kid	2.5 m <sup>2</sup> /head plus 0.5 m <sup>2</sup> /head for each additional lamb/kid									
<p><b>6.8.10 Housing of Dairy Calves</b></p> <p><b>6.8.10.1</b> The housing of calves in individual pens and hutches is permitted provided the following conditions are met:</p> <ol style="list-style-type: none"> <li>calves may be housed in individual pens until three months of age, providing that they are not tethered and have enough room to turn around, lie down, stretch out when lying down, get up, rest and groom themselves;</li> <li>individual calf pens shall be designed and located so that each calf can see, smell and hear other calves;</li> <li>individual housing shall have an area of at least 2.5m<sup>2</sup> and a minimum width of 1.5 m;</li> <li>only hutches with access to an enclosed yard or run are acceptable for outdoor use.</li> </ol>	<p>When hutches are used outdoors, some form of fencing is required to confine calves – they cannot be tethered.</p>									
<p><b>6.8.10.2</b> Calves shall be group-housed following weaning.</p>	<p>Group housing of calves is encouraged as early as a few days after birth. Calves are social herd animals, and group pens provide them with the opportunity to socialize and exhibit natural behaviours. Freedom of movement and exercise are also enhanced in group pens.</p> <p>Where group housing is used for milk-fed calves, appropriate management techniques should be adopted to control diseases. Group sizes should be sufficiently small to allow each calf uninhibited access to lying areas, feeders and water sources, as well as to ensure easy observation of the animals in order to detect health problems. Group sizes of less than 10 are recommended, with at least 2.5m<sup>2</sup> per calf. When very young calves are</p>									

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	group-housed, age and weight variation within the group should be minimized. When milk is provided to group-housed calves only a few times a day (e.g. twice a day feeding), each calf should have access to its own source of milk, whether this is a bucket or an individual teat.
<p><b>6.8.10.3</b> As appropriate for the season, dairy replacement calves over nine months of age shall have access to pasture.</p>	<p>Pasture access is encouraged for all calves regardless of age. However, given legitimate concerns that parasite loads on pasture may negatively affect young replacement calves, it is not compulsory to provide pasture for grazing until calves are nine months of age. This does not mean that younger calves should not have access to the outdoors when weather conditions are suitable.</p>
<p><b>6.8.11 Poultry</b></p> <p><b>6.8.11.1</b> The operator of an organic poultry operation shall establish and maintain poultry living conditions that accommodate the health and natural behaviour of poultry:</p> <ol style="list-style-type: none"> <li>a. The keeping of poultry in row/battery cages is not permitted.</li> <li>b. Poultry shall be reared in open-range conditions and have free access to pasture, open-air runs, waterways and other exercise areas subject to the species, weather, parasites, predators and ground conditions and, whenever possible, shall have such access for at least one third of their life. Open-air runs shall <ol style="list-style-type: none"> <li>i. be covered with vegetation and periodically left empty (and seeded if necessary) to allow vegetation to re-grow to prevent disease build-up;</li> <li>ii. be provided with protective facilities;</li> <li>iii. permit animals to have access to an adequate number of drinking and feeding troughs.</li> </ol> </li> </ol>	<p>The intent of this paragraph is that poultry be reared in open range conditions; it does not allow for total confinement. Some flexibility is allowed on the type of range- it can be pasture or runs; and on when access is given depending on weather, ground conditions or predators. At a minimum, systems using stationary barns must have 2 open-air runs which can be rotated to prevent disease buildup. Runs should have complete vegetation cover before birds are returned to them. Access must be for all birds. Exit and entry pop holes cannot be so small that dominant birds can prevent others from using the openings. A minimum size is 45cm high x 100cm wide (The British Columbia Society for the Prevention of Cruelty to Animals (BCSPA) recommends 200 cm). There must also be sufficient pop holes for the number of birds housed (4m per 1000m<sup>2</sup> area of house). Covered porches and patios are also recommended. These can provide outdoor access when weather conditions are not conducive to the use of outdoor range, and also create a buffer area to reduce nutrient loading in the immediate vicinity of the barn.</p> <p>The reference to “at least one third of their life” recognizes the difficulty of providing outdoor access to poultry in the winter months in Canada and the need to protect young birds before they are fully feathered. Meat birds should have outdoor access at around 3-4 weeks of age. Providing outdoor access for laying hens at a young age increases the utilization of range when they are in the layer barn.</p> <p>In order to accommodate natural behaviour of poultry throughout their life cycle, indoor housing must provide: an area of solid floor covered with dry litter materials such as straw, wood shavings, sand or turf, so that the birds can peck and scratch; elevated perches of a size, number, and height that are suited to the species so that all birds can roost (18 cm high for chickens, 40 cm high for turkeys); and for laying hens, a sufficient number of</p>

General Principles and Management Standards (CAN/CGSB-32.310-2006)	Guidance												
	<p>nest boxes for the size of the flock (1 box per 4-5 or 5-8 birds, or 120 cm.<sup>2</sup> per bird in communal nests) and 8 hours of darkness, when artificial light is provided to prolong day length in the winter months. Facilities for dust bathing should also be provided.</p> <p>Mobile units must be moved frequently to reduce the risk of parasite or disease transmission.</p> <p>Waterfowl must have access to a stream, pond or lake whenever weather conditions permit.</p> <p>Protective facilities in the context of open-air runs mean either natural cover (shrubs, small trees, etc.) or constructed shades. These will also encourage range use.</p> <p>Enough feeder and drinker space should be provided to reduce competition and aggressive encounters. The water source should be able to provide up to 20 litres per day per 100 layer pullets, or up to 180 litres per day per 100 heavy male turkeys under hot weather conditions.</p> <p>Recommended minimums found in the Codes of Practice: for trough-type waterers, allow 2.5 cm per broilers and 3-4cm per adult layer, counting both sides. Nipple-type waterers allow 5-20 broiler chickens per nipple or 6-10 adult layers per nipple. There should be 1 bell drinker for every 100-120 broilers, and 1 for every 50-75 adult layers. For turkeys, use enough waterers to provide 1.5 metres of linear water space for each 100 poults – increase this space as the turkeys age.</p>												
<p><b>6.8.11.2</b> The minimum indoor and outdoor space requirements for poultry are as follows:</p> <table border="1" data-bbox="170 1266 800 1482"> <thead> <tr> <th>Stocking Density</th> <th>Layers</th> <th>Broilers</th> <th>Turkeys/Large birds</th> </tr> </thead> <tbody> <tr> <td>Indoor floor space</td> <td>6 birds/ m<sup>2</sup></td> <td>Max 21 kg/m<sup>2</sup></td> <td>Max 26 kg/m<sup>2</sup></td> </tr> <tr> <td>Outdoor runs</td> <td>4 birds/m<sup>2</sup></td> <td>4 birds/m<sup>2</sup></td> <td>17 kg/m<sup>2</sup></td> </tr> </tbody> </table>	Stocking Density	Layers	Broilers	Turkeys/Large birds	Indoor floor space	6 birds/ m <sup>2</sup>	Max 21 kg/m <sup>2</sup>	Max 26 kg/m <sup>2</sup>	Outdoor runs	4 birds/m <sup>2</sup>	4 birds/m <sup>2</sup>	17 kg/m <sup>2</sup>	<p>Both the amount and quality of space are important. Space requirements are based on the minimum needed for birds to perform all of their natural behaviours without negatively impacting birds around them. Generally, the more space birds are provided, the better they fare.</p> <p>These space requirements recognize that there are basically two different systems used for raising organic poultry in Canada– a stationary building with adjacent runs or free range access to pasture, or a mobile system which in most regions of Canada is only suitable for seasonal production.</p> <p>The numbers in the table refer to the amount of space that must be available for every bird in the flock, even if only a portion of the flock is using the outdoor range at any one time. There is a larger space requirement for outdoor areas because birds are more active in an outdoor environment. For broilers and turkeys, the requirements are given in kg/m<sup>2</sup> to allow for the different sizes of birds as they grow and different finished weights. The outdoor range requirements for broilers can be similarly adjusted.</p>
Stocking Density	Layers	Broilers	Turkeys/Large birds										
Indoor floor space	6 birds/ m <sup>2</sup>	Max 21 kg/m <sup>2</sup>	Max 26 kg/m <sup>2</sup>										
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General Principles and Management Standards (CAN/CGSB-32.310-2006)	Guidance															
<p><b>6.8.11.3</b> For pasture-based operations and mobile units the stocking density shall be no more than 2000 layers per hectare (800 per acre), 2500 broilers per hectare (1000 per acre) or 1300 large birds (turkeys/geese) per hectare (540 per acre) calculated using the total amount of land available for rotation.</p>	<p>‘Pasture based operations’ refers to those operations that utilize pasture as a component of birds’ diets (as oppose to barns with runs that contain minimal amounts of forage). When birds are on pasture, two important environmental factors must be considered– the potential for buildup of parasites and disease, and the negative effects of high nutrient loads on soil and groundwater. For these reasons, the size of the flock must be appropriate for the amount of land available. The numbers given for pasture-based operations refer to the amount of land that must be available assuming that birds will be rotated through different pasture areas. They do not refer to the density of birds on a given area of pasture at one moment in time. For example, if a turkey producer has a hectare of land for pasturing, only 1300 turkeys can be raised at one time, which is equivalent to 7.69 square metres per turkey. For broilers, the equivalent is 4 square metres/bird. If the producer uses mobile pens which are moved regularly, the actual density in these units will be considerably higher, but must not be more than 21 kg/m<sup>2</sup>. The figures given are minimums. For optimal flock health and ongoing sustainability, larger areas are recommended, recognizing that maximum productivity per unit area should be not be the primary goal of organic production.</p>															
<p><b>6.8.11.4</b> For poultry, buildings shall be emptied, cleaned and disinfected, and runs left empty to allow the vegetation to grow back between flocks.</p>																
<p><b>6.8.12 Rabbits</b></p> <p><b>6.8.12.1</b> The keeping of rabbits in cages is not permitted.</p>	<p>This does not include larger covered pens that are on pasture; it refers to individual cages or hutches.</p> <p>The standards provide no guidance as to the type of alternative housing needed. Producers need to provide living conditions that meet the outdoor requirements and allow for the expression of natural behaviours without inducing fighting.</p>															
<p><b>6.8.12.1</b> The minimum indoor and outdoor space requirements for rabbits are as follows:</p> <table border="1" data-bbox="155 1507 787 1728"> <thead> <tr> <th></th> <th>Indoor Space</th> <th>Outdoor Runs and Pens</th> </tr> </thead> <tbody> <tr> <td><b>Young rabbits</b></td> <td>0.3 m<sup>2</sup>/head</td> <td>2m<sup>2</sup>/head</td> </tr> <tr> <td><b>Pregnant does</b></td> <td>0.5 m<sup>2</sup>/head</td> <td>2 m<sup>2</sup>/head</td> </tr> <tr> <td><b>Does and offspring</b></td> <td>0.7 m<sup>2</sup> of floor space</td> <td>2m<sup>2</sup>/head</td> </tr> <tr> <td><b>Buck</b></td> <td>0.3m<sup>2</sup>/head</td> <td>2m<sup>2</sup>/head</td> </tr> </tbody> </table>		Indoor Space	Outdoor Runs and Pens	<b>Young rabbits</b>	0.3 m <sup>2</sup> /head	2m <sup>2</sup> /head	<b>Pregnant does</b>	0.5 m <sup>2</sup> /head	2 m <sup>2</sup> /head	<b>Does and offspring</b>	0.7 m <sup>2</sup> of floor space	2m <sup>2</sup> /head	<b>Buck</b>	0.3m <sup>2</sup> /head	2m <sup>2</sup> /head	<p>The following specifications from the Quebec standard provide some guidance for rabbit production:</p> <ul style="list-style-type: none"> <li>• Mobile pens (0.4 m<sup>2</sup>/animal for doe and litter in shelter area and 2.4 m<sup>2</sup>/animal for pasture).</li> <li>• Mobile pens (0.4 m<sup>2</sup>/growing animal).</li> <li>• Lighting shall be available for a minimum of 8 hours per day, and shall permit the stockbreeder to inspect animals at any time.</li> <li>• Objects that are safe to chew on shall be available in the enclosures.</li> </ul>
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<p><b>6.8.13 Pigs</b></p> <p><b>6.8.13.1</b> Sows shall be kept in groups, except in the last stages of pregnancy and during the suckling period. Piglets</p>	<p>To minimize aggressive behaviour, it is recommended that: groups be stable, with as little mixing as possible;</p>															

<b>General Principles and Management Standards (CAN/CGSB-32.310-2006)</b>	<b>Guidance</b>																											
shall not be kept on flat decks or in piglet cages.	group size be fewer than 10 or more than 25.  Although groups are not required during the suckling period, natural behaviour patterns indicate that sows and piglets should be placed into group lactation 7-10 days after farrowing.  Farrowing crates are not specifically prohibited, but their use in organic systems should be limited to very short periods (e.g. 5 days when piglets are most at risk). Crates, including turnaround crates, make compliance with Paragraph 6.8.1 problematic- they restrict natural behaviours, preventing nest building, proper interaction and the ability to get away from offspring. They also increase the likelihood of wounds and disease.																											
<b>6.8.13.2</b> Exercise areas shall permit rooting by the animals.	If ground suitable for rooting is not accessible, straw bales or a thick layer of bedding (at a minimum) will allow for rooting behaviour.																											
<b>6.8.13.3</b> The minimum indoor and outdoor space requirements for pigs are as follows: <table border="1" data-bbox="155 894 787 1453"> <thead> <tr> <th></th> <th>Indoor Space</th> <th>Outdoor Runs and Pens</th> </tr> </thead> <tbody> <tr> <td>Sows and piglets (up to 40 days' old)</td> <td>7.5 m<sup>2</sup> for each sow and litter</td> <td>2.5 m<sup>2</sup> for each sow and litter</td> </tr> <tr> <td>Growing pigs</td> <td>0.6 m<sup>2</sup>/head 0.8 m<sup>2</sup>/head</td> <td>0.4 m<sup>2</sup>/head 0.6 m<sup>2</sup>/head</td> </tr> <tr> <td>a. up to 30 kg</td> <td>1.1 m<sup>2</sup>/head</td> <td>0.8 m<sup>2</sup>/head</td> </tr> <tr> <td>b. 30-50 kg</td> <td>&gt;1.3 m<sup>2</sup>/head</td> <td>1.0 m<sup>2</sup>/head</td> </tr> <tr> <td>c. 50-85 kg</td> <td></td> <td></td> </tr> <tr> <td>d. &gt;85 kg</td> <td></td> <td></td> </tr> <tr> <td>Sows in group pens</td> <td>3 m<sup>2</sup>/head</td> <td>3 m<sup>2</sup>/head</td> </tr> <tr> <td>Boars in individual pens</td> <td>9 m<sup>2</sup>/head</td> <td>9 m<sup>2</sup>/head</td> </tr> </tbody> </table>		Indoor Space	Outdoor Runs and Pens	Sows and piglets (up to 40 days' old)	7.5 m <sup>2</sup> for each sow and litter	2.5 m <sup>2</sup> for each sow and litter	Growing pigs	0.6 m <sup>2</sup> /head 0.8 m <sup>2</sup> /head	0.4 m <sup>2</sup> /head 0.6 m <sup>2</sup> /head	a. up to 30 kg	1.1 m <sup>2</sup> /head	0.8 m <sup>2</sup> /head	b. 30-50 kg	>1.3 m <sup>2</sup> /head	1.0 m <sup>2</sup> /head	c. 50-85 kg			d. >85 kg			Sows in group pens	3 m <sup>2</sup> /head	3 m <sup>2</sup> /head	Boars in individual pens	9 m <sup>2</sup> /head	9 m <sup>2</sup> /head	Minimum space requirements are given, but the size of farrowing pens should be determined by the size of the sow and litter. Sows need space to manoeuvre so they can coordinate behaviour and avoid crushing the piglets. Piglets themselves require a protected space. "Creep" areas should be large enough to allow all piglets to lie together and to move without difficulty.  Space in group pens must allow for separate areas for eating, lying and dunging. It also must allow for a subordinate sow to show submission to one of higher rank, with meeting distances of 6 to 7 feet to avoid conflicts.
	Indoor Space	Outdoor Runs and Pens																										
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<b>6.9 Manure Management</b>  <b>6.9.1</b> Manure management practices used to maintain areas in which livestock are housed, penned or pastured shall be implemented in a manner that minimizes soil and water degradation.																												
<b>6.9.2</b> All manure storage and handling facilities, including composting facilities, shall be designed, constructed and operated to prevent contamination of ground and surface water.	To prevent pollution, provincial governments provide guidelines and/or regulations for manure storage and handling facilities.  In most parts of Canada, storage should be large enough to accommodate several months worth of manure production.																											

<b>General Principles and Management Standards (CAN/CGSB-32.310-2006)</b>	<b>Guidance</b>
<p><b>6.10 Pest Management</b> – Pest management shall involve in descending order of preference</p> <ol style="list-style-type: none"> <li>preventive methods;</li> <li>mechanical, physical and biological control methods;</li> <li>the use of pesticides included in CAN/CGSB-32.311, <i>Organic Production Systems – Permitted Substances Lists</i>.</li> </ol>	<p>Preventive pest management should include the removal of feces, urine and any spilt food as often as necessary to minimize smells and attractants for insects and rodents.</p> <p>For fly control, acceptable methods include the use of parasitic wasps which kill immature stages and lay eggs in fly pupae, as well as sticky traps or those baited with an attractant.</p> <p>Mechanical traps are used for rodent control. Most rodent baits are not acceptable, but products with Cholecalciferol (vitamin D3) as the active ingredient are allowed; see the Permitted Substances Lists (PSL) (CAN/CGSB-32.311-2006).</p>
<p><b>7. SPECIFIC PRODUCTION REQUIREMENTS</b></p> <p><b>7.1 Apiculture</b></p> <p><b>7.1.1</b> An operator may introduce and manage bees on the enterprise for production benefits, such as the pollination of organic crops. If managed as a livestock species yielding organic apiculture products (e.g. honey, pollen, propolis, royal jelly, beeswax and bee venom), the operator shall manage bees in accordance with this standard.</p>	<p>This paragraph says that an organic operator may manage nonorganic bees on their farm for pollination or other purposes. However, if the bees are used for the production of organic apiculture products, the bees must be managed organically (in accordance with these standards). Nonorganic honey production as part of an organic enterprise would be considered a split operation.</p>
<p><b>7.1.2</b> The treatment and management of colonies shall respect the principles of organic production.</p>	<p>This paragraph states that an organic apiculture operation must follow the organic principles described in Section 2, namely:</p> <ul style="list-style-type: none"> <li>protect the environment</li> <li>encourage biodiversity</li> <li>recycle materials</li> <li>provide attentive care to livestock</li> <li>protect the organic integrity of the product during processing</li> <li>use renewable resources in local systems</li> </ul> <p>Certifying bodies may inspect organic apiculture operations according to organic principles and require compliance in instances where it can be shown that an organic alternative practice, (that is, one that is in compliance with organic principles) is available.</p>
<p><b>7.1.3</b> The sources of nectar, honeydew and pollen shall consist mainly of organically produced plants and spontaneous (wild) vegetation.</p>	<p>This is the general principle statement describing where the organic bees should forage for nectar (with which to make organic honey). It is specific in stating that the major source of organic nectar shall be organic or wild flowers. The standards do not preclude the use of nonorganic (uncontaminated) crops, but certifying bodies should ensure that organic or wild flowers form the major forage source.</p>
<p><b>7.1.4</b> The management of bee health shall be based on appropriate measures such as selection of stock with disease-resistant traits, availability of suitable forage, and good apiary management practices.</p>	<p>This is the general principle statement regarding the management of healthy colonies. There are exceptions (below), but certifying bodies should ensure that the measures described in these standards are being applied on the operation.</p>

<b>General Principles and Management Standards (CAN/CGSB-32.310-2006)</b>	<b>Guidance</b>
<p><b>7.1.5</b> When bees are placed in wild areas, consideration shall be given to the indigenous insect population.</p>	<p>In the application of this paragraph, certifying bodies may wish to ensure that there is adequate forage available for colonies in wild sites; not just for the colonies, but also for wild insects that rely on flowers for their nourishment. ‘Adequate forage’ does require some subjective judgement on the part of certifying bodies, but common sense should guide certifying body inspectors in this regard.</p>
<p><b>7.1.6</b> An operator of an organic apicultural enterprise shall prepare an organic plan providing a detailed description of the sources of bees and production methods. The plan shall include a description of colony management for diet, disease, pests, breeding and related problems with production, in accordance with this standard. The operator shall also outline the details of crop management practices, where applicable.</p>	<p>An organic apiculture plan should include the following elements:</p> <ol style="list-style-type: none"> <li>1. detailed map of the forage zone that shows the location of managed hives, of organic and wild land, and of all nonorganic areas;</li> <li>2. description of the quantity of organic and/or wild forage to be provided for each colony, including honeybee colony density;</li> <li>3. description of water sources available in the forage zone;</li> <li>4. listing of all land to which prohibited substances are applied, and all other sources of potential contamination located in the forage zone;</li> <li>5. records that include the number, location, condition and management of colonies used in organic production;</li> <li>6. extraction, processing and storing of all bee products.</li> </ol>
<p><b>7.1.7 Transition</b></p> <p><b>7.1.7.1</b> Products from an organic apiculture operation in accordance with this standard shall be from colonies that have been under continuous organic management for not less than one year. During this period all non-organic wax shall be replaced by organically produced wax.</p>	<p>For certification purposes, the one-year transition only begins when an operator has submitted an organic plan to a certifying body (applied for enrolment). Otherwise, the certifying body would have no way of knowing whether the apiary is under continuous organic management. ‘Organically produced wax’ refers to clean new foundation that has been drawn out by bees that are managed in accordance with these standards.</p>
<p><b>7.1.7.2</b> When no substances prohibited by par. 1.4.1, and no substances not on CAN/CGSB-32.311, <i>Organic Production Systems – Permitted Substances Lists</i>, are used in the hive the year before the colonies are under continuous organic management, the replacement of wax is not necessary. However all products, such as wax, that are produced before the colonies are under continuous organic management, shall be considered non-organic.</p>	<p>This paragraph provides an exemption to the above paragraph’s requirement to replace all nonorganic wax. In the application of this exception, certifying bodies should require documentation from the operator that certain substances have not been used within the hive. Such documentation may include production records, financial records (e.g. “I didn’t buy any oxytetracycline so I couldn’t have used it”), or at the very least a signed declaration from the operator. Substances mentioned include oxytetracycline (used in conventional operations to control foulbrood, chalkbrood and other diseases). Although it is included in the Permitted Substances Lists (PSL) (CAN/CGSB-32.311-2006), there is a stipulation that all the wax in a colony treated with oxytetracycline shall be replaced with organically produced wax.</p>
<p><b>7.1.7.3</b> Colonies and hives shall not be rotated between organic and non-organic management systems, except for colonies that have undergone a one-year transition after</p>	<p>This paragraph is very clear in its intent. Certifying bodies should ensure that operators do not bring colonies in and out of organic production for any reasons other</p>

<b>General Principles and Management Standards (CAN/CGSB-32.310-2006)</b>	<b>Guidance</b>
isolation and antibiotic treatment as described in par. 7.1.14.7.	than that stipulated.
<b>7.1.8 Introduced Bees</b> – The term <i>introduced bees</i> refers to replacement bees for established organic colonies – introduced bees are not established colonies. Introduced bees shall come from organic production units when commercially available. However, replacement bees (e.g. package bees or nucleus colonies) may be from organic sources or from non-organic sources provided that replacement bees are managed in accordance with this standard for at least 60 days before the removal of organic apiculture products from the hive.	This paragraph provides a definition of the term ‘introduced bees’ (also called ‘replacement bees’) to ensure that the standards are referring to bees only – not to entire colonies. Operators must keep accurate records to ensure that a 60-day period elapses before any organic products are harvested from colonies that have been developed from (or boosted with) nonorganic bees.
<b>7.1.9 Location of Hives</b> – Apiaries shall be separated by a buffer zone of 3000 m where sources or zones of substances prohibited by par. 1.4.1, or flower-bearing agricultural crops treated with substances not listed in CAN/CGSB-32.311, <i>Organic Production Systems – Permitted Substances Lists</i> (i.e. genetic engineering or environmental contaminants) are present.	In the application of this paragraph, operators should provide their certifying body with a description of the land use within 3,000 m of all of their apiaries. Crops that are within 3,000 m of an organic apiary include all genetically engineered crops, and all that have been (or will be) treated with synthetic pesticides or fungicides. These standards do not intend to prevent foraging on nonorganic flowering crops, provided the crops are not products of genetic engineering and have not been treated with substances prohibited by Paragraph 1.4.1. The standards also do not intend to prevent foraging on crops that have been grown using synthetic fertilizers. Certifying bodies should perform risk assessments regarding the potential threat from crops surrounding apiaries. If there is any potential that bees from organic apiaries will forage in crops prohibited by these standards, the certifying body should require immediate action on the part of the operator (generally, the only solution is to move the bees).
<b>7.1.10 Forage and Feeding</b>  <b>7.1.10.1</b> The operator shall provide bees with adequate forage and water that are managed in accordance with this standard.	Use of the word ‘adequate’ makes this paragraph difficult to enforce. Certifying body inspectors should be completely familiar with bee behaviour and with beekeeping practices (small-scale and commercial-scale operations) and should make their own judgement as to whether apiaries are located in areas with sufficient forage and water at all required times of the year.
<b>7.1.10.2</b> Owing to the long distances that foraging bees may travel, it is not possible to limit foraging activities to organic floral sources. While placement of colonies on an organic enterprise, in accordance with this standard, is preferable, hives may be located in other foraging sites, provided the operator can demonstrate that the area surrounding the foraging site is not treated or exposed to substances not in accordance with this standard.	This exception allows operators to locate apiaries on nonorganic land, and to allow the bees to forage on nonorganic crops, provided the requirements of Paragraph 7.1.9 are met.
<b>7.1.10.3</b> Organic honey and pollen shall be the major foodstuff for adult bees, and maintained in adequate supplies in the colony, including leaving colonies with reserves of honey and pollen sufficient for the colony to survive the dormancy period.	This statement of principle requires operators to ensure that colonies are stocked with enough honey and pollen to last them throughout the winter. Certifying bodies should ensure that operators allow the bees enough time for foraging after the honey flow, and enough time during warm weather to stock their colony for the winter.

<b>General Principles and Management Standards (CAN/CGSB-32.310-2006)</b>	<b>Guidance</b>
<p>a. The feeding of colonies can be undertaken to overcome temporary feed shortages owing to climatic or other exceptional circumstances. Feeding shall be carried out only between the last honey harvest and 15 days before the start of the next nectar or honeydew flow-period.</p> <p>b. In such cases, organically produced honey or sugar shall be used. Non-organic refined sugars may be used when the health of the colony cannot be maintained with the use of organically produced honey or sugars.</p>	<p>a. This exception allows operators to feed bees only in specific circumstances. In the application of this paragraph, operators should make a record of the feed they provide to the bees and should justify the use of this exception to their certifying body.</p> <p>b. This paragraph states that under the application of the paragraph above, the operator shall use organic honey or sugar to feed bees. The second sentence allows the feeding of colonies with nonorganic sugars when organic sugar or honey is not available in sufficient quantities to maintain colony health. Operators who wish to use this exception should be prepared to show that they have searched sufficiently for organic sugar in appropriate quantities.</p> <p>Continued recourse by an organic apiarist to the exceptions in Passages ‘a’ and ‘b’ should be cause for concern on the part of a certifying body. These exceptions are only for temporary and exceptional conditions.</p>
<p><b>7.1.10.4</b> Organically and non-organically produced honey or sugars shall not be provided less than 30 days before the harvest of honey.</p>	<p>This paragraph should be applied in conjunction with Paragraph 7.1.10.3 (i.e., any feeding of colonies must not take place 30 days or less before honey harvest).</p>
<p><b>7.1.11 Colony Management</b></p>	
<p><b>7.1.11.1</b> Hives shall be individually identifiable (marked) and shall be monitored regularly (i.e. at one- to two-week intervals, depending upon the colony, weather conditions and time of year).</p>	<p>This paragraph provides operators some flexibility regarding how often they should inspect their colonies, but it is not enough to leave an apiary alone for months at a time. Organic beekeeping requires active management.</p>
<p><b>7.1.11.2</b> Records shall be maintained in accordance with this standard that document all apiary management activities, including removal of supers and extraction of honey.</p>	<p>Records include all written materials. A seasonal journal is usually the easiest way to record beekeeping activities, but beekeepers may comply with these standards in other ways; through the maintenance of sales logs, invoices and other financial records – or something as simple as notes on a calendar.</p>
<p><b>7.1.11.3</b> Clipping of wings on queen bees is prohibited.</p>	<p>Queen bees may be marked using other methods.</p>
<p><b>7.1.11.4</b> Bees shall be removed from hives with bee escape-boards, shaking, brushing and forced-air blowers.</p>	<p>Any substance used in conjunction with bee escape boards must be listed in the Permitted Substances Lists (PSL) (CAN/CGSB-32.311-2006).</p>
<p><b>7.1.11.5</b> Synthetic materials in bee smokers are prohibited in accordance with par. 1.4.1.</p>	<p>Beekeepers should ensure that any materials they use in smokers are not contaminated – used burlap should be washed before being burnt in smokers.</p>
<p><b>7.1.11.6</b> Annual destruction of bee colonies following nectar flows is prohibited.</p>	
<p><b>7.1.12 Hive Construction</b></p>	
<p><b>7.1.12.1</b> Hives shall be constructed of natural materials, including wood and metal. Pressure-treated lumber or particleboard, wood preservatives and lumber treated with substances not in accordance with this standard shall not be used in hive construction or maintenance.</p>	<p>This paragraph refers to hive bodies. The use of plastic frames is therefore allowed.</p>
<p><b>7.1.12.2</b> Exterior surfaces of the hive shall be painted only with non-lead-based paints.</p>	<p>Latex paint, paraffin, and linseed oil are some alternatives to lead-based paint.</p>

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7.1.12.3 Plastic foundation, if dipped in organic beeswax, is permitted.	
<p><b>7.1.13 Health Care</b></p> <p><b>7.1.13.1</b> Preventive health-care practices shall be established and maintained, including the selection of bee stocks resistant to prevalent diseases and pests; the selection of colony locations appropriate to site-specific conditions; the availability of sufficient pollen and honey; the renewal of beeswax; the disinfection and regular cleaning of equipment; and the destruction of contaminated hives and materials.</p>	<p>This statement of principle provides the basis for managing healthy organic colonies. Above all other considerations, beekeepers should actively seek healthy and resistant stock, breed for healthy characteristics, and maintain young, vigorous queens. Organic beekeeping is not simply a matter of not using antibiotics; organic beekeepers should strive constantly to develop and maintain healthy strains of bees.</p>
7.1.13.2 The operator shall promote strong, healthy colonies including: uniting weaker albeit healthy colonies; renewing queens if necessary; maintaining adequate hive density; inspecting colonies systematically and relocating diseased colonies to isolated areas.	<p>This paragraph provides some guidance on how to maintain strong colonies.</p>
<p><b>7.1.14 Disease and Pest Management</b></p> <p><b>7.1.14.1</b> The operator shall be knowledgeable about the life cycle and the behaviour of the bee, as well as related disease-causing organisms, parasitic mites and other pests. The operator shall also initiate efforts to restore the health of the colony in the presence of such pests, parasites or disease.</p>	<p>This paragraph requires organic beekeepers to know about bees themselves, and not just about beekeeping. Organic beekeepers do not have to know everything about bees in order to begin beekeeping, but they must strive continually to improve their knowledge over time. Though this passage may seem redundant (and difficult to enforce), the reason for it is that beekeeping is difficult, and organic beekeeping is doubly difficult – beekeepers must therefore apply all their skills and knowledge if they hope to succeed.</p>
7.1.14.2 Every effort shall be made to breed and select queen bees for resistance to diseases and parasites, and to take preventive measures to control disease and pest problems.	<p>This paragraph talks about queen rearing, but it does not mean that every organic apiarist needs to be an expert in queen rearing. The intent of the paragraph is that beekeepers should constantly assess their queens, and either breed their own stock or obtain good stock from a competent queen breeder.</p>
7.1.14.3 Comb foundation shall be obtained from beeswax of the enterprise apiary or from other organic sources in accordance with this standard, where commercially available.	<p>Organic beekeepers need to record their attempts to locate organic foundation before procuring nonorganic foundation. See the definition (Section 3) of ‘commercially available’.</p>
7.1.14.4 The operator shall use management methods or modified equipment to control pests and diseases.	<p>This statement of principle says that beekeepers shall manage their bees to produce healthy colonies (so that they do not need to use drugs).</p>
7.1.14.5 Botanical compounds may be introduced into the hive provided that such remedies are in accordance with this standard and are not used within 30 days of nectar flow or whenever honey supers are on the hive.	<p>Botanical compounds are those produced from plants. This includes plant oils. See Paragraph 5.3 in the Permitted Substances Lists (PSL) (CAN/CGSB-32.310-2006) for the annotation regarding botanical compounds.</p>
7.1.14.6 The use of therapeutic applications of non-synthetic or synthetic substances to control pests, parasites and diseases is permitted, provided that such substances are in accordance with CAN/CGSB-32.311, <i>Organic Production Systems – Permitted Substances Lists</i> .	<p>This paragraph provides an exception to Paragraph 7.1.14.4 by allowing the use of certain compounds (e.g. oxalic acid and formic acid) that are listed in the Permitted Substances Lists (PSL) (CAN/CGSB-32.311-2006).</p>
7.1.14.7 The use of synthetic allopathic drugs (e.g. antibiotics) in organic apicultural production systems is	<p>The first sentence says that antibiotics (e.g., oxytetracycline) are not allowed. The rest of the</p>

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prohibited. However, where the imminent health of the colony is threatened, such substances are allowed in accordance with CAN/CGSB-32.311, <i>Organic Production Systems – Permitted Substances Lists</i> , and par. 7.1.14.8. Treated hives shall be placed in isolation and undergo a one-year transition period. All the wax shall be replaced with wax that is in accordance with this standard, and all veterinary treatments shall be clearly documented. Before such treatments, the hive shall be removed from the foraging area and taken out of organic production to prevent the spread of antibiotics within the apiary.	paragraph provides an exception in the case of a serious disease outbreak (e.g., American foulbrood). The paragraph provides enough detail for a certifying body to monitor this activity. Organic apiary records should allow certifying body inspectors to determine that this paragraph has been adhered to.
<b>7.1.14.8</b> The practice of destroying the male brood is permitted only to contain infestation with varroa mites.	Destroying drone brood is one of a number of management methods used to control the growth of varroa mites within a colony.
<b>7.1.15 Extraction, Processing and Storage</b>	
<b>7.1.15.1</b> Extraction of honey from a brood comb with live brood is prohibited.	The use of dedicated honey supers and/or queen excluders will help to ensure the brood is not included with the honey harvest.
<b>7.1.15.2</b> The operator shall preserve and protect the quality and organic integrity of the honey, produced in accordance with this standard, once it is harvested.	This paragraph requires organic apiarists to process their honey according to organic processing standards. The term ‘organic integrity’, refers to the practice of not allowing any contamination of the organic product with nonorganic (or prohibited) materials.
<b>7.1.15.3</b> Surfaces in direct contact with honey shall be constructed of food-grade materials or coated with beeswax.	This is a common-sense requirement – honey is a food product.
<b>7.1.15.4</b> The heating of honey for extraction shall not exceed 35°C, and the decrystallization temperature shall not exceed 47°C.	Operators should have thermometers available to measure the temperature of honey at different times during extraction and processing.
<b>7.1.15.5</b> Gravitational settling shall be used to remove debris from extracted honey; sieves are permitted to remove residual debris.	This is accomplished by allowing the honey to settle in large tanks, sometimes for days. Most of the foreign materials will float to the top, where they can be skimmed off.
<b>7.1.15.6</b> Honey shall be packaged in airtight containers.	The intent of this paragraph is to ensure that organic honey is not susceptible to contamination. Certifying bodies should allow organic beekeepers some flexibility in their choice of containers, as long as the honey is secure. Canadian Honey Regulations state that, “ <b>32.</b> (1) Every container of honey shall be in clean, sanitary and sound condition, have a tightly fitting lid and be free from severe dents or buckling and from obvious signs of internal rusting. (2) Every container of prepackaged honey shall be new.”
<b>7.1.15.7</b> Cleaning products and insect repellents shall be limited to substances listed in CAN/CGSB-32.311, <i>Organic Production Systems – Permitted Substances Lists</i> .	See Paragraph 6.6 of the Permitted Substances Lists (PSL) (CAN/CGSB-32.311-2006).
<b>7.1.15.8</b> Organic honey products shall not be produced from a hive or colony treated with substances prohibited by 1.4.1	The prohibition on the use of certain products and processes is repeated here so that there should be no question that the honey standard (Paragraph 7.1) is covered by Paragraph 1.4.1.

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<p><b>7.2 Maple Products</b></p> <p><b>7.2.1</b> For organic maple products, the operator shall manage production units in accordance with this standard.</p>	<p>Maple syrup producers are required to follow the rules that apply to all organic crops, including maintaining adequate buffer zones around the maple production unit as outlined in Paragraph 5.1.4.</p>
<p><b>7.2.2</b> In the production of maple syrup or products derived from it, care shall be taken to ensure that the characteristic maple flavour predominates. Organic standards shall be respected during all stages of maple syrup production – the maintenance and development of the sugar bush, the collection and storing of the maple sap, and the processing of the sap into syrup and derived products. This includes the washing and the sterilization of equipment and the storage of finished products.</p>	
<p><b>7.2.3</b> For sugar bush development and maintenance, the production of organic maple syrup shall be characterized by management practices that respect the sugar bush and its ecosystem. Development and maintenance shall be focused on preserving the ecosystem of the sugar bush and on improving the vigour of the tree population over the long term.</p>	
<p><b>7.2.4</b> Tapping practices shall aim to minimize the risks to the health and longevity of the trees.</p>	
<p><b>7.2.5</b> For the collection and storage of maple sap, the equipment and techniques shall aim to obtain a processed product of the highest possible quality. Equipment shall be in good condition and shall be used according to the manufacturer's instructions.</p>	
<p><b>7.2.6</b> In converting sap to syrup, the sap can take on the odour of anything it comes into contact with during its processing. Care shall be taken to avoid denaturing the product at any point in the processing. Therefore, the use of any technology likely to alter the intrinsic qualities of the product is prohibited.</p>	
<p><b>7.2.7</b> The cleaning of equipment used in syrup production including the collection system, pipes and tanks shall take place before and after every production season.</p>	
<p><b>7.2.8 Transition</b> – This standard shall be fully applied on a production unit for at least 12 months before the first harvest of maple sap. Substances prohibited by par. 1.4.1 and substances not in Section 4 of CAN/CGSB-32.311, Organic Production Systems – Permitted Substances Lists, such as unapproved fertilizers or synthetic pesticides used in forest management, shall not have been used in the sugar bush for at least 36 months preceding the first harvest. Any parallel production is prohibited.</p> <p><i>Note: The Canadian Organic Products Regulations require operators to document that they have not used substances prohibited by this standard and substances not listed in CAN/CGSB-32.311, Organic Production Systems – Permitted Substances Lists. Operators also may be</i></p>	<p>See Section 3 for the definition of ‘parallel production’.</p>

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<i>required to be under the supervision and inspection of a certification body during at least 12 months prior to allowing organic claims on agricultural products.</i>											
<p><b>7.2.9 Sugar Bush Development and Maintenance</b></p> <p><b>7.2.9.1 Plant Diversity</b> – Producers shall encourage species diversity in the sugar bush, in particular companion species to the sugar maple.</p>											
<p><b>7.2.9.2 Thinning</b> – When it is necessary, or when required by the administrator of the forest, thinning of the sugar bush shall be performed according to good forest management practices currently existing both in private and public forest and well distributed throughout the sugar bush.</p>											
<p><b>7.2.9.3 Tree Protection</b> – To preserve plant diversity and the growth of young trees, access to the sugar bush by farm animals (e.g. beef or dairy cattle, pigs or domestic deer) is forbidden at all times. The pipeline network shall be installed so as not to wound or harm the growth of the trees.</p>	Understanding the habits of pests that may attack sugar bushes or production facilities, and searching for harmonious solutions to these attacks, are the preferred bases for pest control. Only products appearing in the Permitted Substances Lists (PSL) (CAN/CGSB-32.311-2006) can be used to control diseases or insects within a sugar bush.										
<p><b>7.2.9.4 Fertilization</b> – Fertilization shall only be applied using recommendations based on observed, diagnosed and documented deficiencies. Authorized soil amendments for sugar bushes include wood ash, agricultural lime and non-synthetic fertilizers listed in CAN/CGSB-32.311, <i>Organic Production Systems – Permitted Substances Lists</i>.</p>											
<p><b>7.1.10 Tapping</b></p> <p><b>7.2.10.1 Tree Diameter and Number of Taps</b> – Table 2 indicates the maximum number of taps that a healthy maple can support, based on its chest height diameter (C.H.D.). C.H.D. is the tree's diameter measured at a height of 1.3 m above the soil surface. No maple can receive more than three tapholes.</p> <p style="text-align: center;"><b>TABLE 1</b> <b>Maximum Number of Taps</b></p> <table border="1" data-bbox="215 1419 784 1654"> <thead> <tr> <th>Diameter Measured at a Height of 1.3 m Above the Soil Surface</th> <th>Maximum Number of Taps</th> </tr> </thead> <tbody> <tr> <td>Less than 20 cm</td> <td>0</td> </tr> <tr> <td>20 to 40 cm</td> <td>1</td> </tr> <tr> <td>40 to 60 cm</td> <td>2</td> </tr> <tr> <td>60 cm or greater</td> <td>3</td> </tr> </tbody> </table>	Diameter Measured at a Height of 1.3 m Above the Soil Surface	Maximum Number of Taps	Less than 20 cm	0	20 to 40 cm	1	40 to 60 cm	2	60 cm or greater	3	
Diameter Measured at a Height of 1.3 m Above the Soil Surface	Maximum Number of Taps										
Less than 20 cm	0										
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<p><b>7.2.10.2 Depth and Diameter of Tapholes</b> – The depth of tapholes shall be no more than 4 cm, not counting the bark, or 6 cm if the measurement is made from the surface of the bark. Taphole diameters shall not be greater than 11 mm.</p>											
<p><b>7.2.10.3 Disinfection of Tapholes and Tapping Equipment</b> – The use of any type of germicide, including paraformaldehyde tablets, or denatured alcohol (a mixture of ethanol and ethyl acetate), in tapholes and on tapping</p>											

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equipment, is prohibited. Only food-grade ethyl alcohol may be used as a disinfectant during tapping by sprinkling it on spouts and on drill bits only.	
<b>7.2.10.4 Over- and Under-tapping</b> – Double tapping, the practice of retapping a previously tapped tree during the same season, is a prohibited practice. Spouts shall be removed from the trees at the end of the production season, to allow the trees to heal.	
<b>7.2.11 Collection and Storage of Maple Syrup</b>  <b>7.2.11.1 Spouts</b> – Only the use of spouts made of food-grade materials is permitted.	
<b>7.2.11.2 Sap Collection Under Vacuum</b> – All parts of the collection system that may come in contact with the sap shall be made with materials suitable for use in the manufacture of an organic product. The vacuum level shall never exceed 677 hPa (20 in. of mercury) at any spout.	
<b>7.2.11.4 Storage</b> – All equipment that may come in contact with the sap or its concentrate and filtrates, such as storage tanks, connections and transfer systems, shall be made with materials suitable for use in the manufacture of food products. This also applies to any surface coatings (e.g. paints), where applicable.	
<b>7.2.11.4 Collecting with Buckets</b> – Pails or buckets may be made of aluminum or plastic, but not galvanized steel. A lid shall be used to cover the bucket. The same standards that apply to storage tanks apply to reservoirs used to transport the collected sap to the place where it will be boiled.	
<b>7.2.12 Conversion of Sap to Syrup</b>  <b>7.2.12.1 Sap Filtration</b> – Sap shall be filtered before processing. This filtration shall not take away the sap's inherent qualities.	
<b>7.2.12.1 Sap Sterilization</b> – Sterilization of the sap before its conversion to syrup is forbidden, either by treating it with ultraviolet radiation or by adding any type of product.	
<b>7.2.12.3 Osmosis Extraction and Membranes</b> – The reverse osmosis technique of sap concentration is acceptable. Only membranes of the reverse osmosis and nano-filtration (ultra-osmosis) types are allowed. In the off-season, osmosis membranes shall be stored in filtrate in a hermetically sealed container kept in a frost-free location. Sodium metabisulfite (SMBS) may be added to the filtrate to prevent mould growth. In such cases, the membrane shall be rinsed before its use the next spring with a volume of water equal to the hourly capacity of the membrane (e.g. 2728 L [600 gal.] of water for a 2728 L/h [600 gal./h] membrane). Off-site storage of the membrane (e.g. by the membrane supplier) shall be documented.	
<b>7.2.12.4 Evaporator</b> – Evaporator pans shall be made of stainless steel. They shall be either tungsten-inert gas (TIG) welded or soldered using tin-silver solder. Pans	

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<p>made of galvanized steel, copper, aluminum and tin-plated steel are not allowed. Acceptable fuels include wood and heating oil. Used oils may be used as a primary or supplementary fuel for the evaporator. Air and environmental quality shall be controlled in the evaporator room. Also, the use of air injection systems is prohibited.</p> <p><i>Note: In Canada, some additional provincial requirements may also apply on the use of used oils.</i></p>	
<p><b>7.2.12.5 Defoamers</b> – The only antifoaming agents permitted are Pennsylvania maple wood (<i>Acer pennsylvanicum</i>, also known as striped maple or moosewood) and all organic vegetable oils, except those made from soy, peanuts, sesame seeds or nuts.</p> <p><i>Note: Oils made from soy, peanuts, sesame seeds or nuts are not permitted in order to ensure that organic syrup is produced without these potential allergens.</i></p>	
<p><b>7.2.12.6 Syrup Filtration and Other Treatments</b> – Organic maple syrup shall not be refined by artificial means, bleached or lightened in color. Simple filtration through cloth or paper, through a filter press or through food grade diatomaceous earth, silica powder or clay dust with a filter press to remove suspended solids is permitted.</p>	
<p><b>7.2.12.7 Provisional Containers</b> – The maple syrup not intended for immediate consumption shall be packed in containers of food-grade materials that do not alter the chemical composition or the quality of the syrup. Authorized containers include barrels made of stainless steel, fibreglass, food-grade plastic or metal with a food-grade coating inside. The reuse of single-use barrels is prohibited. All barrels shall carry a unique number, with a corresponding entry appearing in the record books of the producer. The date of fill-up shall also be recorded.</p>	
<p><b>7.2.13 Cleaning of Equipment Intended for Use with Syrup Production</b></p> <p><b>7.2.13.1 Authorized Products for Cleaning or Disinfecting</b> – When operators need to carry out cleaning or disinfecting operations in addition to washing, the products authorized include</p> <ol style="list-style-type: none"> <li>in season, a filtrate for all equipment and sodium hypochlorite for all equipment except the piping;</li> <li>out of season, filtrate, sodium hypochlorite and fermented sap for all equipment.</li> </ol>	
<p><b>7.2.13.2 Osmosis Unit Membrane</b> – Operators may use NaOH (sodium hydroxide) or follow the manufacturer's recommendations for products used to maintain reverse osmosis unit membranes. Off-season treatment of membranes with citric acid is permitted. These substances shall be rinsed using a filtrate having a volume equivalent to 40 times an apparatus' residual void volume, meaning the volume contained in the apparatus and its components</p>	

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once the apparatus has been drained. Daily effectiveness records and calculations shall be recorded in daily record books. The membrane flushing water shall be discarded in a manner that causes no harm to the environment.	
<b>7.2.13.2 Evaporators</b> – Evaporators may be washed with drinking water at any time. Vinegar or fermented sap may be used at end of season.	
<b>7.2.13.4 Prohibited Products</b> – All other products than those specified in 7.2.13.1 to 7.2.13.3 are prohibited, including those based on phosphoric acid.	
<b>7.2.14 Food Additives and Processing Aids</b> – Transformation of syrup into derivative products (e.g. maple butter, sugar and taffy) shall respect this standard. Cooking using microwaves is forbidden. No other product shall be added to syrup or other maple products during their production, whether to improve the taste, texture or appearance. Cones may be used if they constitute less than 5% of the weight of the final product.	
<b>7.2.15 Transport, Storage and Conservation</b> – Maple syrup in bulk shall be stored in containers of food-grade materials that do not alter the chemical composition or quality of the syrup. Authorized containers include barrels made of stainless steel, fibreglass, food-grade plastic or metal with a food-grade coating inside. All barrels shall carry a unique number, with a corresponding entry appearing in the record books of the producer.	
<b>7.3 Mushroom Production</b>  <b>7.3.1</b> For organic mushrooms or mushroom products, the operator shall manage production units in a manner that ensures the substrates and mushrooms are not in contact with substances prohibited by par. 1.4.1. Substrates shall be produced in accordance with this standard or obtained from vegetation grown in areas free of substances prohibited by par. 1.4.1 for at least three years and shall be composted in accordance with this standard.	As with all types of organic production, the use of certain products and processes (listed in Paragraph 1.4.1) is not allowed in organic mushroom production. There are no exceptions within the mushroom standards. The second sentence of this paragraph is repeated in section 7.3.2 d (below).  The growth substrate does not need to be certified organic and it does not necessarily need to be composted. Materials contained in the substrate, for which there are organic standards, must comply with 1.4.1 and be free from prohibited substances for a period of three years.
<b>7.3.2</b> In the production of organic mushrooms, the operator shall a. ensure, for new installations or replacement purposes, that only lumber that has not been treated with substances prohibited by par. 1.4.1 is in contact with the growth substrate;  b. maintain an environment throughout the entire	a. The intent of this paragraph is to ensure that treated lumber is not used in organic mushroom production. Nothing in the standards prohibits the use of plastic (or metal) materials in organic mushroom production, but polyvinyl chloride (PVC) plastic is prohibited for use in organic crop production, so it can be inferred that this product would not be allowed in mushroom production. Operators should ensure that PVC plastic is not used in their mushroom operation.  b. The simplest way to conform to this paragraph

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<p>growing cycle, harvesting, and post-harvesting process that prevents contact between organically produced mushrooms and substances prohibited by par. 1.4.1;</p> <p>c. use as a production substrate, organic agricultural substances that are in accordance with this standard (e.g. organic straw or hay);</p> <p>d. use as a growth substrate, logs, sawdust or other materials derived from wood originating only from trees that have been grown in areas free of substances prohibited by par. 1.4.1 for at least three years and that have not been treated post-harvest with substances prohibited by par. 1.4.1;</p> <p>e. use organic spawn (seed), or if not commercially available, non-organic spawn provided that it has not been treated with a substance prohibited by par. 1.4.1 and has been produced in accordance with this standard;</p> <p>f. ensure that manure and any non-organic agricultural material used as a growth substrate is composted, in accordance with this standard;</p> <p>g. ensure that cultivation sites are free of debris from understorey and diseased trees;</p> <p>h. ensure that diseased mushroom strains are either burned, moved at least 50 m from a production site (if the diseased logs are kept for study), or moved to an</p>	<p>would be to ensure that substances prohibited by Paragraph 1.4.1 are not allowed on sites where organic mushroom products are grown or prepared. Certifying body inspectors should ensure that procedures are in place to ensure the organic integrity of organic mushrooms throughout the entire production process. Such procedures need not be elaborate, nor require extensive documentation – the important point is that they should achieve the intended result.</p> <p>c. This paragraph is specific in its requirement that certified organic substrate must be used. Though organic livestock farmers are allowed to use nonorganic straw (in certain circumstances), organic mushroom farmers must use organic straw (and other organic substrates). Certified organic straw is generally available, as is organic hay.</p> <p>d. There are no organic standards for wood products (Section 7.6 of these standards (Wild Crops) is not intended for wood production). Thus, there are no certified organic logs or sawdust available for organic mushroom production. Consequently, these standards specify the requirements for the use of wood fibre (including logs) as a substrate in organic mushroom production. In order to comply with these standards, operators must provide documentation regarding the origin of the logs they are using as substrate. The simplest way to comply is to obtain logs from a private source where it can be documented that the trees providing the logs have not been subject to pesticides or fertilizers (or any other substance mentioned in Paragraph 1.4.1). The case is similar with sawdust; it is difficult to prove that sawdust comes from uncontaminated logs if it is obtained from a large commercial sawmill. If an operator obtains sawdust from a small sawmill (where logs are harvested on-site), the purity of the sawdust could be documented.</p> <p>e. Operators will need to prove that they have made an effort to locate organic spawn before using nonorganic spawn (see Section 3 for the definition of ‘commercially available’).</p> <p>f. See the definition of ‘compost’ in The Permitted Substances Lists (PSL) (CAN/CGSB-32.311-2006).</p> <p>g. This passage is commonsense production guidance; the connection to organic production is that if the production area is kept sanitary, there will be less chance of disease (and therefore, less need for disease-suppressing inputs).</p> <p>h. See above.</p>

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<p>acceptable disposal area;</p> <p>i. precautions shall be taken to prevent disease including the removal of diseased materials and sanitation using substances included in CAN/CGSB-32.311, <i>Organic Production Systems – Permitted Substances Lists</i>.</p>	<p>i. As in Passage ‘g’ of this paragraph, the more effort made to prevent disease, the more likely prohibited inputs will not be needed to control disease outbreaks.</p>
<p><b>7.3.3</b> The cleaning and maintenance of equipment and the use of sanitizers and disinfectants shall be limited to substances included in CAN/CGSB-32.311, <i>Organic Production Systems – Permitted Substances Lists</i>.</p>	<p>See Section 7 of the Permitted Substances Lists (PSL) (CAN/CGSB-32.311-2006).</p>
<p><b>7.4 Sprout Production</b></p>	
<p><b>7.4.1</b> The operator shall use only seed produced under organic production methods, in accordance with this standard.</p>	<p>There is no exception to the requirement to use certified organic seed in organic sprout production.</p>
<p><b>7.4.2</b> The operator shall use sources of water (e.g. potable water, distilled or processed by osmosis) that meet or exceed the quality standards for levels of microbial and chemical contaminants in drinking water.</p>	<p>Certifying bodies can verify this paragraph by requiring a certificate of potability from the organic sprout operator. Operations using municipal water would not require such documentation.</p>
<p><b>7.4.3</b> A water quality monitoring program shall be in place, and water shall be analysed at least twice a year (once every six months).</p>	<p>To provide consistent results, operators should work with a single laboratory in their water analysis program. If a certifying body has concerns regarding water analysis, they may request that the certifying body inspector procure a water sample and send it directly to the lab.</p>
<p><b>7.4.4</b> Soluble fertilizers may not be added to rinsing water.</p>	
<p><b>7.4.5</b> Growth medium shall conform to the present standards (e.g. exempt of substances prohibited by par. 1.4.1 for 36 months).</p>	<p>Operators may use commercial potting soil as a growth medium, provided it has been produced according to these standards.</p>
<p><b>7.4.6</b> Substances used for cleaning or sanitizing seeds and sprouts shall be limited to the substances included in par. 7.3 of CAN/CGSB-32.311, <i>Organic Production Systems – Permitted Substances Lists</i>.</p>	<p>Section 7 of the Permitted Substances Lists (PSL) (CAN/CGSB-32.311-2006) includes substances allowed for cleaning and sanitizing in all types of production..</p>
<p><b>7.4.7</b> Substances used for cleaning and maintenance of equipment shall be limited to the substances included in par. 7.3 and 7.4 of CAN/CGSB-32.311, <i>Organic Production Systems – Permitted Substances Lists</i>.</p>	<p>See above.</p>
<p><b>7.5 Greenhouse Crops Production</b></p>	
<p><b>7.5.1</b> The operator shall manage soil and crop production units with an in-ground permanent soil system or with a container system with soil free of substances prohibited by par. 1.4.1. In-ground permanent soil systems shall be free of substances prohibited by par. 1.4.1 for at least three years before use. The operator shall totally abstain from using hydroponics and aeroponics.</p>	<p>Containers include pots, pails, beds (raised) and any growing space that is not connected to the ground. Any growing system that is connected to the ground will need to be (documented) free of substances prohibited by Paragraph 1.4.1 for at least three years before the planting of any organic greenhouse crop. See Section 3 for definitions of ‘hydroponics’ and ‘aeroponics’.</p>
<p><b>7.5.2</b> The operator may use supplemental heat with proper exhaust of burnt gasses, and supplemental lighting. Supplemental nutrition may be used in accordance with CAN/CGSB-32.311, <i>Organic Production Systems – Permitted Substances Lists</i>.</p>	<p>This first sentence makes it clear that organic greenhouse production may include heating and lighting of any variety. The second and third sentences describe the type of supplemental nutrition (fertilization) regime (if any) that shall be used in organic greenhouses. The intent of the third sentence is to encourage closed-loop systems, where fertilizer produced on one part of the farm (i.e., from livestock) is used as a nutritional supplement in another part (i.e., greenhouse production). The other</p>

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	<p>intent of the third sentence is to discourage the use of ‘brought in’ inputs wherever possible, as this type of farming is not consistent with organic principles. Certifying bodies may use their discretion when enforcing these standards, as greenhouse operators may find other ways to provide crop nutrition (i.e., not using animal manure) while still complying with organic principles.</p>
<p><b>7.5.3</b> Plants and soil, including potting soil, shall not be in contact with substances prohibited by par. 1.4.1, including wood used for greenhouse structures or frames of raised beds treated with such substances.</p>	<p>This paragraph tells operators firstly that wood treated with prohibited materials (basically, all treated lumber) may not come in contact with plants or soil. Paragraph 5.2.2 also applies to greenhouse production. Treated lumber is not allowed in any part of a greenhouse (touching the plants, soil, or anything else). Certifying bodies may require an operator who is dealing with a historical problem (e.g. a purchased greenhouse was built with treated lumber) to lay an impervious layer between the treated lumber and the soil. The use of treated lumber above growing plants should not be allowed, even in the case of a historical problem, as condensed water could drip off treated wood and onto the plants.</p> <p>Containers may be made of untreated wood or wood treated with substances included in the Permitted Substances Lists (PSL) (CAN/CGSB-32.311-2006). They may also be made of plastic or metal.</p>
<p><b>7.5.4</b> The operator shall</p> <ol style="list-style-type: none"> <li>a. use reusable and recyclable pots and flats whenever possible;</li> <li>b. use growing media and wetting agents selected from substances listed in CAN/CGSB-32.311 <i>Organic Production Systems – Permitted Substances Lists</i>;</li> <li>c. disinfect holding or storage facilities and equipment using only substances listed in CAN/CGSB-32.311, <i>Organic Production Systems – Permitted Substances Lists</i>.</li> </ol>	<ol style="list-style-type: none"> <li>a. This requirement is derived from the fifth organic principle, and certifying bodies should encourage adherence to it.</li> <li>b. Operators should pay attention to the use of wetting agents in commercial growing media to ensure that both comply with the Permitted Substances Lists (PSL) (CAN/CGSB-32.311-2006) (see PSL, Paragraph 4.3 on wetting agents).</li> <li>c. See Section 7 of the PSL.</li> </ol>
<p><b>7.5.5</b> Full-spectrum lighting is permitted.</p>	<p>This paragraph is ancillary to Paragraph 7.5.2 – all lighting is permitted.</p>
<p><b>7.5.6</b> The following procedures or processes are allowed to</p> <ol style="list-style-type: none"> <li>a. enrich carbon dioxide levels: <ol style="list-style-type: none"> <li>i. flame</li> <li>ii. fermentation</li> <li>iii. composting</li> <li>iv. compressed gas (CO<sub>2</sub>)</li> </ol> </li> <li>b. clean and disinfect plant containers, pots and flats: <ol style="list-style-type: none"> <li>i. substances listed in CAN/CGSB-32.311, <i>Organic Production Systems – Permitted Substances Lists</i></li> <li>ii. steam-heat sterilization</li> </ol> </li> <li>c. stimulate growth or development: <ol style="list-style-type: none"> <li>i. substances listed in CAN/CGSB32.311 <i>Organic Production Systems – Permitted Substances</i></li> </ol> </li> </ol>	<p>This paragraph provides guidance regarding some common practices in commercial greenhouse production. It should not be assumed that the examples noted are the only methods available to produce the outcomes described in a, b, c, and d. Operators may find other methods that comply equally with organic principles and these standards. However, these would need to be evaluated on a case-by-case basis.</p> <p>c. Any substances used to stimulate growth or development must be listed in the Permitted Substances Lists (PSL) (CAN/CGSB-32.311-2006).</p>

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<p>Lists</p> <ul style="list-style-type: none"> <li>ii. control of daily temperature and light levels</li> </ul> <p>d. prevent damping-off:</p> <ul style="list-style-type: none"> <li>i. low-temperature baking</li> <li>ii. hot-water treatment</li> <li>iii. steam treatment.</li> </ul>	
<p><b>7.5.7</b> For the prevention and control of disease, insects or other pests, the following procedures are allowed:</p> <ul style="list-style-type: none"> <li>a. methods and substances listed in CAN/CGSB-32.311, <i>Organic Production Systems – Permitted Substances Lists</i></li> <li>b. pruning</li> <li>c. roguing</li> <li>d. vacuuming</li> <li>e. air filters, screens or other physical devices to exclude pests from the greenhouse environment</li> </ul>	<p>As in Paragraph 7.5.6, this paragraph provides some guidance for the organic greenhouse producer. These examples may not be the only means to prevent and control insects and other pests.</p>
<p><b>7.5.8</b> Soil regeneration and recycling procedures shall be practiced. Alternatives to crop rotation may be permitted in greenhouse production, such as grafting of plants on disease-resistant rootstock, winter soil-freezing, soil regeneration by incorporating biodegradable plant mulch (e.g. straw or hay), and partial or complete replacement of greenhouse soil or container soil, provided it is re-used outside the greenhouse for another crop.</p>	<p>This paragraph says that it is not enough to continually add inputs (especially soluble inputs) to maximize nutrition and production. Greenhouse operators must actively put organic matter back into the soil that is removed by the crop. One method of complying with this paragraph would be the regular addition of compost to the greenhouse. Greenhouse operators using containers are allowed to replace the soil in those containers, provided the soil is used elsewhere on the farm. These standard allow certifying bodies some discretion regarding crop rotation, as this practice is occasionally not feasible in high-production, high-cost operations.</p>
<p><b>7.6 Wild Crops</b></p> <p><b>7.6.1</b> An organic wild plant product shall be harvested from a clearly defined production area having documentation that no substances prohibited by par. 1.4.1 have been applied for a period of three years immediately preceding the harvest of the wild crop.</p>	<p>A clearly defined production area must be marked on a map so that a certifying body inspector can verify the limits of the harvest area. To comply with the standards, documentation stating that no prohibited products have been applied must come from the authority having jurisdiction over the production area. In many cases this is the provincial government, but may also involve obtaining such documentation from the owners of private land. Certain substances are routinely applied to tree farms, such as herbicides and fertilizers.</p>
<p><b>7.6.2</b> The operator shall</p> <ul style="list-style-type: none"> <li>a. draw up a detailed description of harvested areas and the history of compliance with this standard over the past three years;</li> <li>b. draw up a description of harvest methods used;</li> <li>c. propose protection measures for wild species that will prevent disturbance of the environment.</li> </ul>	<p>Certifying bodies should ensure that the forms they use provide a ‘wild crop plan’ when completed, answering (among other things) the requirements in this paragraph.</p> <ul style="list-style-type: none"> <li>a. This requires detailed maps/descriptions of the harvested areas and verifiable information regarding the use of the harvested area over the past three years.</li> <li>b. This includes the length of harvest, tools used, how the crop is cared for post-harvest, and where it is marketed.</li> <li>c. This includes (in particular) how the operator intends to ensure a sustainable harvest over time. The</li> </ul>

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	operator should be able to prove that their proposed activity will not result in the degradation of the target crop or of any other species. Wild harvesters should not use tools that will disturb the soil or cause damage to other species.
<p><b>7.6.3</b> Wild products can only be deemed organic, in accordance with this standard, if they are harvested in relatively undisturbed or stable natural settings. A wild plant shall be harvested or picked in a way that promotes its growth and production and that does not destroy the environment.</p>	<p>The intent of this paragraph is to ensure that wild harvesting does not become wild farming, that wild cropping does not occur on cultivated (farmed) land, and that the harvest of wild crops is sustainable over time (that it does not in any way deplete the plant resource). Certifying body inspectors should use their discretion when verifying that the harvested area is ‘relatively undisturbed’. A logged forest has been disturbed, but mushrooms growing in a logged and planted clear-cut are in a natural setting (aside from the logging that has taken place), and as long as they are harvested in way that ensures future growth (in this case, that spawn mushrooms are left behind), that type of wild harvest would comply with these standards.</p>
<p><b>7.6.4</b> The production zone of wild crops shall be isolated from contact with substances prohibited by par. 1.4.1, by a clearly defined buffer zone (par. 5.1.4 applies).</p>	<p>In the application of this paragraph, the certifying body should undertake a risk assessment to determine whether a buffer zone is required. If so, Paragraph 5.1.4 should be enforced.</p>
<p><b>7.6.5</b> The operator that manages the harvest of wild crop products shall maintain records.</p>	<p>Records for wild harvest include:</p> <ul style="list-style-type: none"> <li>• Harvest records</li> <li>• Sales records</li> <li>• Aerial photos</li> <li>• Contractual arrangements with organizations (or persons) having authority over the harvested area</li> </ul>
<p><b>8. PREPARATION AND HANDLING OF ORGANIC PRODUCTS</b></p> <p><b>8.1 Integrity</b> – The major objective of an organic system is to maintain the inherent organic qualities of the product from production, preparation, storage, handling and labelling, to point of sale. Throughout the preparation and handling, the integrity of organic products is maintained by using techniques appropriate to the specific ingredients and limiting the degree of refinement while minimizing the use of food additives and processing aids. Ionizing radiation shall not be used on organic products for pest control, food preservation, elimination of pathogens or sanitation.</p>	<p>This paragraph provides the general principles of organic preparation and handling. Certifying bodies may wish to voice their concerns over highly refined organic processing such as refinement, hydrogenation, chemical bleaching, hydrolysis, oxidation, denaturation, or interesterification. There is obviously a need for certifying bodies that certify processors to have organic processing experts on staff. Ionizing radiation does not include microwave ovens or dryers– see the definition of ‘ionizing radiation’ in Section 3.</p>
<p><b>8.2 Product Composition</b> When calculating the organic percentage of a product, all ingredients shall be broken down into their constituent parts to distinguish between organic and non-organic in each ingredient. The calculation shall account for all constituents in the product.</p> <p><b>8.2.1</b> The percentage of all organically produced ingredients in an organic product shall be calculated by the following:</p> <p>a. <i>Solid Products</i>: Divide the total net mass (excluding</p>	<p>This paragraph relates to the labelling rules, which have been removed from the standards (see <b>Appendix B</b>) and moved to the Organic Products Regulation. The labelling rules allow for the use of the term ‘organic’ and the national organic symbol on products with 95% or more organic ingredients. Products containing between 70-95% organic ingredients may only be labelled “contains xx% organic ingredients” (they may not state, “made with organic ingredients”). Products containing less than 70% organic ingredients may only identify their organic</p>

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<p>water and salt, and calcium in the case of livestock feeds) of combined organic ingredients in the formulation or finished product, whichever is more relevant, by the total mass (excluding water and salt) of all ingredients.</p> <p>b. <i>Liquid Products</i>: Divide the fluid volume of all organic ingredients (excluding water and salt) by the fluid volume of all ingredients (excluding water and salt) if the product and ingredients are liquid. If the liquid product is identified on the principal display panel as being reconstituted from concentrates or by similar phrases, the calculation shall be made using single-strength concentrations of the ingredients or finished product.</p> <p>a. <i>Solid Products and Liquid Products</i>: Divide the combined mass of solid organic ingredients and the mass of the liquid organic ingredients (excluding water and salt) by the total mass (excluding water and salt) of all ingredients in the finished product.</p>	<p>ingredients in the ingredient list and not on the main panel. These standards provide the detailed procedures for how an operator (or a certifying body) will determine the percentage of organic ingredients in a particular product.</p>
<p><b>8.2.2</b> The percentage of all organically produced ingredients in an organic product shall be rounded down to the nearest whole number.</p> <p><i>Note: The Canadian Organic Products Regulations stipulate permitted labelling claims for organic products produced in accordance with this standard.</i></p>	<p>This paragraph is ancillary to Paragraph 8.2.1.</p>
<p><b>8.2.3</b> When an organic product contains 95% or more organic ingredients, a maximum of 5% non-organic ingredients may be used only if not commercially available in an organic form, and the cost of organic ingredient(s) is not to be used as a criterion for <i>commercially available</i>.</p>	<p>In the application of this paragraph, a certifying body will need to ensure that an operator has undertaken an active search for organic ingredients, before the operator is allowed to use nonorganic ingredients. This search must be documented, and in some case the certifying body should do its own search. Certifying bodies must determine when to allow the use of nonorganic ingredients. For example, an operator may request to use nonorganic ground filberts when organic whole filberts are readily available; or to use nonorganic orange concentrate when organic orange juice is available. Making such determinations requires some expertise on the part of the certifying body.</p> <p>All nonagricultural ingredients, synthetic ingredients and those that are food additives must be listed in the Permitted Substances Lists (PSL) (CAN/CGSB-32.311-2006).</p> <p>Operators should have verification on file (for certifying body inspection) of all ingredients used in a multi-ingredient product. This is usually in the form of certificates or other documents that attest to the origin of ingredients, but can be as simple as the label on a bottle of lemon juice which indicates that it is certified organic by a recognized certifying body.</p>
<p><b>8.2.4</b> When an organic product contains less than 95% organic ingredients, non-organic ingredients may be used.</p>	<p>This paragraph refers to the labelling claims for those products containing 70-95% organic ingredients</p>

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	("contains xx% organic ingredients") and those containing less than 70% (where the organic status of ingredients must only be stated in the ingredient list). This is as described in the guidance to Paragraph 8.2.1.
<b>8.2.5</b> Both the non-organic and organic form of an ingredient shall not be used.	This paragraph refers to the ingredients in a single product. The intent of the paragraph is that both organic and nonorganic potatoes, for example, cannot be included in the same product. As such, a product cannot contain organic Macintosh apples (in whatever form) and nonorganic Fuji apples. However, other applications are not so obvious, and certifying bodies must use some judgement in the application of these standards. For example, a baker could be making a product using 99% organic wheat flour, but the baker needs to use a dough conditioner (<1% of the total ingredients) that contains a tiny proportion of nonorganic wheat flour. The certifying body will need to decide if the intent of the standards is being met. Certifying bodies can make subjective judgements in these cases, but such judgements must be documented, consistent, and publicly available. (It is the precedent that must be so, not the decision about any particular operation).
<b>8.2.6</b> All non-organic ingredients of agricultural origin are subject to the requirements of par. 1.4.1 a., 1.4.1 h. and 1.4.1 k.	Agricultural origin means the product is the result of farming activity. Nonorganic ingredients of agricultural origin shall not be products of genetic engineering, shall not have been subject to 'ionizing radiation', and shall not be the products of 'cloned farm animals' (both defined in Section 3). These standards are subject to the requirements of Paragraph 8.2.3, meaning that nonorganic ingredients of agricultural origin may not constitute more than 5% of a product that is labelled organic. Also, these products may only be used if an organic form is not commercially available.
<b>8.2.7</b> The product shall contain only ingredients of non-agricultural origin listed in <i>CAN/CGSB-32.311, Organic Production Systems – Permitted Substances Lists</i> .	All ingredients that are not products of agriculture (or wild harvest) must be listed in the Permitted Substances Lists (PSL) (CAN/CGSB-32.311-2006). Additionally, ingredients listed in the PSL may not constitute more than 5% of a product that is labelled organic.
<b>8.3 Processing and Handling</b>	
<b>8.3.1</b> Processing methods shall be mechanical, physical or biological (e.g. fermentation and smoking) and shall minimize the use of non-agricultural ingredients, food additives and processing aids in <i>CAN/CGSB-32.311, Organic Production Systems – Permitted Substances Lists</i> .	This paragraph discourages the use of highly processed products and or non-natural processes such as: refinement, hydrogenation, chemical bleaching, hydrolysis, oxidation, denaturation, or interesterification (this list is not exhaustive).
<b>8.3.2</b> Processing aids shall be of organic origin or in accordance with par. 6.6 of <i>CAN/CGSB-32.311, Organic Production Systems – Permitted Substances Lists</i> .	Processing aids are substances that are added to a product for a technological effect during processing. They are not present in the finished product, or are present only at insignificant or non-functional levels (from the Permitted Substances Lists (PSL) (CAN/CGSB-32.311-2006), Paragraph 6.2). All processing aids must either be organic or they must be listed in the PSL.  An example of a processing aid (albeit a complicated

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	<p>one) is ethyl alcohol, which can only be used if the alcohol is not present in the final product. If alcohol is present in the final product, it is then considered an ingredient (not a processing aid), and must be organic; unless it is part of the 5% (or less) nonorganic ingredients.</p> <p>A simpler example is diatomaceous earth (DE) when used as a filtering agent. As long as it is not present in the final product, it can be used as a processing aid. When DE is used as a filtering agent, there is an opportunity for tiny amounts of this substance to end up in the final product. This is why Paragraph 6.2 of the PSL allows for the presence of DE “at insignificant or non-functional levels”.</p>
<p><b>8.3.3</b> All non-organic processing aids of agricultural origin are subject to the requirements of par. 1.4.1a, 1.4.1h and 1.4.1k.</p>	<p>Operators are allowed to use nonorganic processing aids of agricultural origin, provided these substances are not products of genetic engineering, have not been subject to ‘ionizing radiation’, or are not the products of ‘cloned farm animals’ (both defined in Section 3). This paragraph is subject to the requirements of Paragraph 8.3.2 – nonorganic processing aids (whether of agricultural origin or not) must be listed in the Permitted Substances Lists (PSL) (CAN/CGSB-32.311-2006). Operators should have written documentation to confirm that nonorganic processing aids comply with this requirement.</p>
<p><b>8.3.4</b> Food additives and processing aids shall only be used to maintain</p> <ol style="list-style-type: none"> <li>a. nutritional value;</li> <li>b. food quality or stability;</li> <li>c. composition, consistency and appearance, provided that their use does not mislead the consumer concerning the nature, substance and quality of the food; and <ol style="list-style-type: none"> <li>i. there is no possibility of producing a similar product without the use of additives or processing aids;</li> <li>ii. they are not included in amounts greater than the minimum required to achieve the function for which they are permitted;</li> <li>iii. they contain no other substance prohibited by par. 1.4.1, except as specified in CAN/CGSB-32.311, <i>Organic Productions Systems—Permitted Substances Lists</i>.</li> </ol> </li> </ol>	<p>This paragraph provides the basis for the use of food additives and processing aids in organic food manufacturing. In order to use any food additive or processing aid, an operator should demonstrate to their certifying body that the substance they intend to use complies with the intent of Passages ‘a’, ‘b’, or ‘c’. Further, a certifying body should assure themselves that the requirements of Passages ‘i’ and ‘ii’ have been verified before they provide permission for the use of food additives and processing aids. Finally, the substance intended for use shall not contain products of genetic engineering or pesticides.</p>
<p><b>8.3.5</b> Organic products shall be packaged with materials that prevent commingling, contamination and pest infestation and do not cause a loss of organic integrity.</p>	<p>See the definition of ‘commingling’ in Section 3. There are many ways to achieve compliance with this requirement. Operators should choose packaging that will contain the product, keep pests out (as appropriate), avoid contamination of any kind during storage and transportation, and ensure the product does not become mixed with nonorganic products.</p>
<p><b>8.3.6</b> Any materials in contact with food shall be clean and of food-grade quality.</p>	<p>Food grade quality standards vary according to the type of material. Plastics used in food packaging are of</p>

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	greater purity than plastics used for nonfood packaging. Plastics used for food also vary according to the type of food being stored (e.g., foods that are highly acidic or that contain alcohol or fats can leach plastic additives from the packaging or container into the food). Operators should only use plastic containers that are approved for that particular type of food. Not all stainless steel is of food grade quality. Operators should ensure that they are using the correct stainless steel product for the intended purpose. Note that many plastic film wraps (especially industrial brands) are made from PVC, which is prohibited in the Permitted Substances Lists (PSL) (CAN/CGSB-32.311-2006) for mulches (see Paragraph 4.3 Plastic for row covers and solarisation). Plastic film wrap is available which is made of LDPE (low density polyethylene) rather than PVC,.
<b>8.3.7</b> Only substances that appear in par. 7.3 of CAN/CGSB 32.311, <i>Organic Production Systems – Permitted Substances Lists</i> , may be used to clean, disinfect or sanitize organic food or food-contact surfaces without a mandatory removal event, provided that the origin and use are consistent with the annotation for that substance.	Operators may use the substances listed in the Permitted Substances Lists (PSL) (CAN/CGSB-32.311-2006), Paragraph 7.3 to clean, disinfect or sanitize food surfaces (as annotated) without washing off the substance. This is because in some circumstances, the sanitation benefit of a substance is lost when it is rinsed away. Operators should allow these substances to dry on the surface before resuming food processing on (or in) that surface. The residues from these particular substances have no harmful effects when ingested.
<b>8.3.8</b> Substances that appear in par. 7.4 of CAN/CGSB-32.311, <i>Organic Production Systems – Permitted Substances Lists</i> , may be used to clean, disinfect or sanitize organic food contact surfaces or other surfaces, provided that such substances are removed from food contact surfaces prior to organic production.	Substances that appear in Paragraph 7.4 of the Permitted Substances Lists (PSL) (CAN/CGSB-32.311-2006) must be removed from food contact surfaces before organic food processing activity is resumed. This can be accomplished by rinsing with potable water, purging with organic ingredients that will be sold or used as nonorganic, or by drying (mechanically, or through evaporation).
<b>8.3.9</b> Organic products shall be segregated or otherwise protected at all times (i.e. during processing, storage, bulk and unbound stages) from non-organic products, to prevent commingling.	There are many instances where organic food is processed and handled in the same facility as nonorganic food. Certifying bodies should ensure that separation between the two (i.e., that they do not mix). Operators will have varying solutions to this problem, and in all cases, certifying bodies should assess the risk of commingling.
<b>8.3.10</b> Where products not in accordance with this standard are also processed, packaged or stored in the unit operated in accordance with organic production, a. processing shall be carried out continuously until the complete run has been dealt with, separated by place or time from similar operations performed on products not covered by this standard; b. if such operations are not carried out frequently, they shall be announced in advance, with a deadline appearing in the enterprise’s production schedule; c. every measure shall be taken to ensure identification	This paragraph allows for parallel production in organic food manufacturing under certain conditions (Passages ‘a’, ‘b’, and ‘c’). a. A simple way to achieve this outcome is to process the organic run on Monday mornings, when the plant is clean. Otherwise, the operator should ensure that organic production has a specific time allotted. The standards do not allow organic processing to stop and start ad hoc. b. This paragraph is ancillary to Passage ‘a’, requiring a specific production schedule for the organic run. c. There are many ways to comply with these

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of lots and to avoid mixtures with products not obtained in accordance with this standard.	standards. Certifying bodies will need to be assured that the operation has a system in place to identify, handle, and store organic runs separately from nonorganic runs.
<b>8.3.11</b> Storage sites and transport containers for organic products shall be maintained and cleaned using methods appropriate for the organic products being stored and with materials in accordance with this standard.	Permitted cleaning materials are listed in Section 7 of the Permitted Substances Lists (PSL) (CAN/CGSB-32.311-2006).
<b>8.4 Pest Management</b>  <b>8.4.1</b> Good manufacturing 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 CAN/CGSB-32.311, <i>Canadian Production Systems – Permitted Substances Lists</i> .	These are the acceptable means to deal with pests in organic processing and handling.
<b>8.4.2</b> If the practices given in par. 8.4.1 are ineffective, the operation may use pest control substances listed in CAN/CGSB-32.311, <i>Organic Production Systems – Permitted Substances Lists</i> . The operator shall record the use and disposition of all such substances.	An operator must first show that they have employed the methods described in Paragraph 8.4.1, and have found them to be ineffective, before they should be allowed to use pest control substances. Pest control substances are listed in Paragraph 6.7 of the Permitted Substances Lists (PSL) (CAN/CGSB-32.311-2006).
<b>8.4.3</b> If the practices given in par. 8.4.1 and 8.4.2 are ineffective, the operator may use pest control substances not listed in CAN/CGSB-32.311, <i>Organic Production Systems - Permitted Substances Lists</i> . In situations in which pest control substances not listed in CAN/CGSB-32.311, <i>Organic Production Systems - Permitted Substances Lists</i> 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.	This specific exception allows pest control products not listed in the Permitted Substances Lists (PSL) (CAN/CGSB-32.311-2006) to be used <b>outside</b> a food processing facility. However, before resorting to this exception, operators must show that they have tried the practices described in Paragraph 8.4.1 and that those practices have not worked.
<b>8.4.4</b> Organic products shall not be exposed to pesticides or pest control substances not listed in CAN/CGSB-32.311, <i>Organic Production Systems – Permitted Substances Lists</i> , during any stage of production, transit, storage or border crossing.	Operators shall ensure that substances not listed in the Permitted Substances Lists (PSL) (CAN/CGSB-32.311-2006) that are used in the nonorganic portion of a manufacturing or handling facility do not come into contact with organic food products.
<b>8.5 Transportation</b> – To avoid possible commingling of organic and non-organic products at any time during transportation, organic products shall be physically segregated or protected to prevent substitution of the content.	‘Physically segregated’ can mean that organic and non-organic products are in separate trucks, separate compartments in trucks, or physically separated boxes or crates. Shrink-wrapping separate lots on pallets is appropriate for this purpose. Proper lot and container labelling helps to avoid commingling.
<b>8.5.1</b> Equipment used in transporting organic products shall be free of	This means that trucks, railcars or containers used to transport organic food products should be thoroughly cleaned before the organic food products are loaded. For certification purposes, the operator who owns the food at the point of transport (when the food is on the truck) is

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<p>a. non-organic product (or other) residues;</p> <p>b. invertebrate and vertebrate pests.</p>	<p>responsible to ensure this (see Informative note to Paragraph 8.5.3).</p> <p>a. Equipment that handles organic products may also handle nonorganic products in the same container (see Paragraph 8.5), but residue from nonorganic products must be removed before loading organic products. Equipment handling organic products should not contain prohibited substances such as pesticides that are not listed in the Permitted Substances Lists (PSL) (CAN/CGSB-32.311-2006).</p> <p>b. An <b>invertebrate</b> is an animal without a vertebral column. Invertebrate pests include worms, insects, slugs and snails. <b>Vertebrates</b> are animals that have a spinal column. Vertebrate pests include rodents and birds.</p>
<p><b>8.5.2</b> Organic products in transit to or from an off-site unit to undergo any activity as defined in the preparation definition shall be transported in a manner that shall prevent contamination or substitution of the content with substances or products not compatible with this standard. The following information shall accompany the product:</p> <p>a. the name and address of the person or organization responsible for the production, preparation or distribution of the product</p> <p>b. the name of the product</p> <p>c. the organic status of the product</p> <p>d. information that ensures traceability (e.g. lot number)</p>	<p>The opening passage of this paragraph repeats the requirements of Paragraphs 8.5 and 8.5.1, but it specifically covers products that are being transported to be processed, slaughtered, stored, inspected, graded, packed, assembled, priced, marked or labelled. The paragraph does not apply to a producer who is transporting their own product for direct sale to consumers.</p> <p>The information required in Passages ‘a’, ‘b’, ‘c’, and ‘d’ could be included in the bill of lading or other documentation. Certifying bodies should ensure that all shipments (as described above) of organic products are accompanied by a document that contains the required information. ‘Accompanied’ means that the document must physically accompany the shipment – it cannot be faxed, mailed or shipped by courier or some other method.</p>
<p><b>8.5.3</b> Organic product integrity shall not be compromised during transportation. Documentation shall be obtained to provide assurance that conditions meet the requirements of this standard.</p> <p><b>Note:</b> <i>The party owning the product at the point of transport is responsible for maintaining organic integrity in the transport process.</i></p>	<p>This paragraph provides the principle statement regarding the transportation of organic products – organic integrity shall be maintained. ‘Organic integrity’ is defined as, “[T]he maintenance of the inherent organic qualities of a product from the reception of ingredients through to the end consumer, in accordance with this standard” (from Section 3). Thus, the paragraph requires that someone be responsible for the organic integrity of organic products during transport (and also until the product is sold to the end consumer). In the application of these standards, certifying bodies should investigate what happens to organic products once they leave a site under the certifying body’s oversight. The certifying body should ask the following questions:</p> <ol style="list-style-type: none"> <li>1. Who owns the product at the point of transport?</li> <li>2. Is the transportation (company) certified in its own right?</li> <li>3. Is anyone taking responsibility for the organic integrity of the product once it leaves the site under the oversight of the certifying body?</li> </ol> <p>Under the Canada Organic Regime, there are instances in</p>

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	<p>which certification oversight of organic integrity is not required (e.g., retail and food service establishments). Even though a product has been sold to a retail store and is no longer under the control of the certified operator, the certifying body still has to take some responsibility for the product – at least investigating the conditions under which it is handled. If there are concerns that the organic integrity of a product is under threat during transport and storage, the matter should be communicated to the Canadian Food Inspection Agency (CFIA).</p>
<p><b>9. EMERGENCY PEST OR DISEASE TREATMENT</b></p> <p><b>9.1</b> Operators shall monitor and document the application of substances, prohibited by par. 1.4.1, applied under any governmental program for the treatment of pests and diseases.</p> <p><i>Note: In the event of an emergency pest or disease treatment the reader should be aware that in Canada the operator is required to notify the certification body without delay of any change that may affect the certification of organic products.</i></p>	<p>This paragraph alludes to the risk of contamination from government-authorized spraying programs (those for gypsy moth or West Nile virus, or mandatory noxious weed control programs, for example). Regulations under the Canada Organic Regime require operators to notify their certifying body of any event that may jeopardize the organic status of their business. In this event, certifying bodies must undertake a risk assessment to determine the damage to the crop in production, and to determine the risk of contamination of the production area (the soil, or the perennial crops). Where the risk of contamination is light (for example, in the application of a prohibited formulation of <i>Bacillus thuringiensis</i> (BT) – the substance is allowed, but the formulation is not), the certifying body may choose to remove the organic status of the crop only for the present season. Where the risk of contamination is heavier (as with the application of a synthetic pesticide), the certifying body may require a transition period of one, two, or three years (depending on the substance, and the method of application – aerial, or windblown from a neighbouring application). The certifying body can decide to apply the transition period only to the particular field (or crop, in the case of perennial crops) that was subject to the emergency pest or disease treatment.</p> <p>These standards also apply to organic livestock farms in the event of a mandatory treatment of organic animals with a prohibited substance. In this case, Paragraph 6.7 of the Permitted Substances Lists (PSL) (CAN/CGSB-32.310-2006) applies. Animals treated with prohibited products shall never be sold as organic meat animals, nor as organic breeding animals. Such animals may be kept in the organic breeding herd (provided they are marked as nonorganic for slaughter purposes). In such circumstances, <i>in utero</i> offspring can be sold as organic for slaughter purposes (provided the treatment with prohibited products occurred before the third trimester of pregnancy), along with subsequent offspring, provided the breeding animals continue to be raised according to the standards.</p>
<b>10. REQUIREMENTS FOR ADDING OR</b>	Section 10 provides the criteria by which substances shall

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<p><b>AMENDING SUBSTANCES IN CAN/CGSB-32.311, ORGANIC PRODUCTION SYSTEMS – PERMITTED SUBSTANCES LISTS</b></p> <p><i>Note: The criteria in this section 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 which 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.</i></p>	<p>be evaluated before they are included (or not) in the Permitted Substances Lists (PSL) (CAN/CGSB-32.311-2006). These criteria are documented for use by the Canadian General Standards Board (CGSB) Committee on Organic Agriculture during their deliberations to determine whether a substance should be added to the PSL.</p>
<p><b>10.1 Substance List Review Procedures</b></p> <p><b>10.1.1</b> Substances to be added to or deleted from CAN/CGSB-32.311 Organic Production Systems – Permitted Substances Lists shall be evaluated for compliance with the criteria outlined within paragraphs 10.2 to 10.5 inclusive.</p>	
<p><b>10.1.2</b> The system of review criteria detailed here shall be the primary determinant for accepting or rejecting the addition of a substance to CAN/CGSB-32.311, <i>Organic Production Systems – Permitted Substances Lists</i>.</p>	
<p><b>10.1.3</b> In evaluating substances for inclusion in CAN/CGSB-32.311, <i>Organic Productions Systems – Permitted Substances Lists</i>, all stakeholders shall have an opportunity to be involved.</p>	
<p><b>10.2 Permitted Substance Criteria</b></p> <p><b>10.2.1</b> Substances included in the lists, with exceptions as noted, shall be consistent with</p> <ol style="list-style-type: none"> <li>a. the general principles of organic production as set out in this standard: <ol style="list-style-type: none"> <li>i. Protect the environment, minimize soil degradation and erosion, decrease pollution, optimize biological productivity and promote a sound state of health.</li> <li>ii. Maintain long-term soil fertility by optimizing conditions for biological activity within the soil.</li> <li>iii. Maintain biological diversity within the system.</li> <li>iv. Recycle materials and resources to the greatest extent possible within the enterprise.</li> <li>v. Provide attentive care that promotes the health and meets the behavioural needs of livestock.</li> <li>vi. Prepare organic products, emphasizing careful processing, and handling methods in order to maintain the organic integrity and vital qualities of products at all stages of production.</li> <li>vii. Rely on renewable resources in locally</li> </ol> </li> </ol>	

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<p>organized agricultural systems.</p> <p>b. the prohibitions set out in par. 1.4.1 of this standard.</p>	
<p><b>10.2.2</b> Each substance shall be reviewed concerning its necessity, its 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 with pars.10.3, 10.4 and 10.5. All available alternatives, including substances and practices that may currently be in use in other production systems, must be included in the evaluation.</p>	
<p><b>10.2.3</b> After the decision of inclusion of a substance in CAN/CGSB-32.311, <i>Organic Production Systems – Permitted Substances Lists</i>, has been made, any conditions governing its origin and usage shall be specified according to par. 10.6.</p>	
<p><b>10.3 Necessity of a Substance</b></p> <p><b>10.3.1 Soil Amendments</b> – Substances used on soils and plants as amendments, and listed in par 4.2 of CAN/CGSB-32.311, <i>Organic Productions Systems – Permitted Substances Lists</i>, shall be necessary for obtaining or maintaining soil fertility or to fulfill specific requirements of crops, or specific soil conditioning and rotational purposes that cannot be satisfied by the requirements and practices of this standard.</p>	
<p><b>10.3.2 Crop Production Aids and Materials</b> – Substances used for the management of diseases, insects, weeds and other pests of plants and listed in par 4.3 and 4.4 of CAN/CGSB-32.311, <i>Organic Productions Systems – Permitted Substances Lists</i>, 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.</p>	
<p><b>10.3.3 Livestock Production Substances</b></p> <p><b>10.3.3.1</b> Substances used as livestock feed additives and supplements and listed in par 5.2 of CAN/CGSB-32.311, <i>Organic Productions Systems – Permitted Substances Lists</i>, shall be:</p> <ul style="list-style-type: none"> <li>a. necessary to correct documented essential nutrient deficiencies in the forage or feed ration, given that other biological, cultural or physical treatments are not available; or</li> <li>b. necessary for ensuring and preserving product quality, given that other biological, cultural or physical treatments are not available.</li> </ul>	
<p><b>10.3.3.2</b> Substances used as livestock health care products and production aids and listed in par 5.3 of CAN/CGSB-32.311, <i>Organic Productions Systems – Permitted Substances Lists</i>, shall be necessary to prevent or treat livestock health problems provided that other organic</p>	

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treatments are not available.	
<p><b>10.3.4 Food Ingredients and Processing Aids</b> – In the absence of other available technology or substances that satisfy this standard, substances added to or used in the preparation, handling and storage of organic food products and listed in pars. 6.3 to 6.6 of CAN/CGSB-32.311, <i>Organic Productions Systems – Permitted Substances Lists</i>, shall be:</p> <ol style="list-style-type: none"> <li>necessary to correct documented essential nutrient deficiencies of the product (i.e. vitamins and minerals) or when required by regulations;</li> <li>essential for ensuring the safety of the product; or</li> <li>used only when it is not feasible/practical to produce or store such products without having recourse to such ingredients and processing aids; or</li> <li>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 10.2.1 vi.</li> </ol>	
<p><b>10.3.5 Sanitation and Pest Control Substances</b> – Substances used for sanitizing production and processing equipment and facilities and for emergency pest control in such facilities and listed in pars. 6.8, 7.3 and 7.4 of CAN/CGSB-32.311, <i>Organic Productions Systems – Permitted Substances Lists</i> shall be necessary and appropriate for the intended use.</p>	
<p><b>10.4 Origin and Mode of Production of a Substance</b></p> <p><b>10.4.1 Soil Amendments and Crop Production Aids</b> – Substances used in soil conditioning and crop production (par. 4.2 to 4.4 of CAN/CGSB-32.311, <i>Organic Productions Systems – Permitted Substances Lists</i>), shall be of plant, animal, microbial or mineral origin and may undergo the following processes during production:</p> <ol style="list-style-type: none"> <li>physical (e.g. mechanical or thermal)</li> <li>enzymatic</li> <li>microbial (e.g. composting, fermentation or digestion).</li> </ol>	
<p><b>10.4.1.1</b> Substances of plant and animal origin shall be derived from crops and livestock produced in accordance with this standard unless such substances are not commercially available.</p> <p><i>Exceptions:</i> Substances produced by chemical processes or processes that chemically alter substances of plant, animal, microbial or mineral origin (i.e. synthetic compounds) may be considered for inclusion in pars. 4.2 to 4.4 if all of the following conditions are met:</p> <ol style="list-style-type: none"> <li>They meet the criteria for necessity in par 10.3 and impact considerations in par. 10.5.</li> <li>Non-synthetic forms of these substances are not available in sufficient quality or quantity.</li> <li>They are annotated and reviewed as required in par. 10.6 and 10.7.</li> </ol>	

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<p><b>10.4.2 Livestock Production Substances</b></p> <p><b>10.4.2.1</b> Substances of plant origin used as or added to livestock feed (par. 5.2 of CAN/CGSB-32.311, <i>Organic Productions Systems – Permitted Substances Lists</i>) 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 can only be used if they are of natural origin.</p> <p><i>Exceptions:</i> Synthetic substances may be included if they meet all of the following conditions:</p> <ol style="list-style-type: none"> <li>They meet the criteria for necessity in par 10.3 and impact considerations in par. 10.5.</li> <li>Non-synthetic forms of these substances are not available in sufficient quality or quantity.</li> <li>They are annotated and reviewed as required in par. 10.6 and 10.7.</li> </ol>	
<p><b>10.4.2.2</b> Substances used for livestock health care and production aids (par. 5.3 of CAN/CGSB-32.311, <i>Organic Productions Systems – Permitted Substances Lists</i>) shall be of organic or non-synthetic origin whenever possible. Synthetic substances may be included subject to the annotation and review requirement in par. 10.7.</p>	
<p><b>10.4.3 Food Ingredients and Processing Aids –</b> Substances used as food ingredients or processing aids (as listed in pars. 6.3 to 6.6 of CAN/CGSB-32.311, <i>Organic Productions Systems – Permitted Substances Lists</i>) shall be found in nature and may have undergone the following processes during production:</p> <ol style="list-style-type: none"> <li>mechanical/physical (e.g. extraction, precipitation)</li> <li>enzymatic</li> <li>microbial (e.g. fermentation).</li> </ol>	
<p><b>10.4.3.1</b> Substances of plant and animal origin shall be derived from crops and livestock produced in accordance with this standard. Substances of microbial origin shall be obtained using organic substrate.</p> <p><i>Exceptions:</i> Substances that are not from organic sources or that have been chemically synthesized may be considered for inclusion under the following conditions:</p> <ol style="list-style-type: none"> <li>They meet the criteria for necessity in par 10.3 and impact considerations in par. 10.5.</li> <li>Organic sources or, as applicable, non-synthetic sources of these substances are not available in sufficient quality or quantity.</li> <li>They are annotated and reviewed as required in par. 10.6 and 10.7.</li> </ol>	
<p><b>10.5 Sanitation and Pest Control Substances –</b> Substances used for facility sanitation and emergency pest control in such facilities (as listed in pars. 6.7, 7.3 and 7.4 of CAN/CGSB-32.311, <i>Organic Productions Systems – Permitted Substances Lists</i>) may be of synthetic origin under the following conditions:</p>	

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<ul style="list-style-type: none"> <li>a. They meet the criteria for necessity in par 10.3 and impact considerations in par. 10.5.</li> <li>b. Non-synthetic forms of these substances are not available in sufficient quality or quantity.</li> <li>c. They are annotated and reviewed as required in par. 10.6 and 10.7.</li> </ul>	
<p><b>10.5 Impact of a Substance</b> – Consideration shall be given to the following impacts when evaluating a substance for inclusion in CAN/CGSB-32.311, <i>Organic Production Systems – Permitted Substances Lists</i>.</p>	
<p><b>10.5.1 All Substances</b></p> <ul style="list-style-type: none"> <li>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.</li> <li>b. The impact on equivalency and harmonization of this standard with standards and regulations of other jurisdictions.</li> </ul>	
<p><b>10.5.2 Substances use in primary crop and livestock production</b> – The on-farm impact of the use and potential miss-use of the substances listed in pars 4.2 to 5.3 of CAN/CGSB-32.311, <i>Organic Productions Systems – Permitted Substances Lists</i> on</p> <ul style="list-style-type: none"> <li>a. soil quality including biological diversity and activity, structure, salinity, sodicity, erodability and tilth;</li> <li>b. surface and ground water quality;</li> <li>c. ecosystems (in particular non-target organisms) including wildlife and wildlife habitat;</li> <li>d. animal and human health, when applicable.</li> </ul>	
<p><b>10.5.3 Food Ingredients and Processing Aids</b> – The impact of the use and potential misuse of the substances listed in pars. 6.3 to 6.6 of CAN/CGSB-32.311, <i>Organic Productions Systems – Permitted Substances Lists</i> on</p> <ul style="list-style-type: none"> <li>a. human health through both food and non-food exposure, including acute and chronic toxicity, allergenicity and metabolites;</li> <li>b. when applicable, on product quality, including nutrition, flavor, taste, appearance, and storage;</li> <li>c. consumer perception concerning the nature, substance, and quality of a food product.</li> </ul>	
<p><b>10.6 Origin and Usage Annotation</b> – When applicable the annotation accompanying a substance shall include:</p> <ul style="list-style-type: none"> <li>a. any restriction as to its origin and mode of production;</li> <li>b. any restrictions, as to its composition and usage.</li> </ul>	
<p><b>10.7 Exceptions</b> – All substances included in CAN/CGSB-32.311, <i>Organic Production Systems – Permitted Substances Lists</i>, under exception criteria shall be</p> <ul style="list-style-type: none"> <li>a. identified as exceptions to the criteria;</li> <li>b. re-evaluated for compliance according to the procedures set out in par.10.1 each time this standard and CAN/CGSB-32-311, <i>Organic Production Systems</i></li> </ul>	

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<p>– <i>Permitted Substances Lists</i>, are subject to full review.</p> <p><b><i>Informative note:</i></b> <i>In accordance with the Canadian General Standards Board's policy, standards are subject to a full review every five years.</i></p>	

## Appendix A - Certification Requirements

### Introduction

Certification requirements for the Canada Organic Regime are contained within the *Organic Products Regulations* and the *Canada Organic Office - Operating Manual 2008* (managed by the Canadian Food Inspection Agency (CFIA)). Certifying bodies should be familiar with both of these publications, as the documents provide the legal basis for certification under the Canada Organic Regime. Organic operators, on the other hand, should not need to become familiar with the legal text within the *Organic Products Regulations* and the *Canada Organic Office - Operating Manual 2008* in order to carry out their organic activity. This appendix is intended to provide some guidance to operators and to certifying bodies regarding salient issues of organic certification.

### Testing

There is no reference to (requirement for) soil, plant, or residue testing anywhere in CAN/CGSB-32.310-2006 except in the definition of Nutrient Management Planning (Section 3), where soil testing is indicated. The need for soil testing could be inferred from Paragraph 5.5.2.2 (nutrient management planning) but is not required. CAN/CGSB-32.311-2006 (PSL) does require soil and/or tissue testing in a number of instances (Gypsum, Iron products, Sulphates of zinc or iron, Trace elements) in the context of documenting a soil deficiency (in order to use a certain substance). The off-farm compost annotation infers the need for testing to ensure there is no risk of heavy metal accumulation in the soil (from the use of the compost). These examples show that while the notion of soil or plant residue testing is a common topic in organic certification discussion, the actual standards barely mention it. There is some benefit to organic farmers to be derived from soil testing if the operator knows how to interpret the results. Yet residue testing has never been a facet of organic certification, and the standards attest to this.

The CFIA *Canada Organic Office - Operating Manual 2008* gives certifying body inspectors the authority to collect samples, if necessary, but it does not indicate why the samples would be required (Part C2.2.3B10g). The samples could be of soil, plants, water, prepared products, or product labels. Part C 2.3.4 of the same document gives certifying bodies the authority to request testing, but does not specify in what regard.

Certifying bodies thus have the ability to use residue testing as a tool in organic certification, as in the case of suspected fraud. For instance, a certifying body inspector might be suspicious that a field of organic soy was fertilised with prohibited substances. The certifying body has the authority to ask its inspector to take samples (tissue or soil or water) but before they do, certifying bodies should ask themselves the following questions:

- What are we looking for? Is testing the right tool? There may be other ways of determining whether prohibited products were used (interviewing neighbours, checking with local suppliers, reviewing purchase invoices).
- Do we have enough expertise to be able to interpret the results? Background levels of different contaminants can be high (the Abbotsford aquifer in BC's Fraser Valley is polluted with nitrates from chicken farms, for example). Can we distinguish between fraud and background contamination?
- Do the standards justify the use of residue testing? Do the standards refer to residue limits? If not, how do we know the difference between inadvertent contamination and fraud?

Every certifying body should have a policy regarding testing and taking of samples for testing. The policy should address the following issues:

- When should samples be taken?
- What authority does a certifying body inspector require before taking samples?
- Where are samples sent?
- What tests are required of samples?
- What is the proper procedure to notify the operator that samples were taken?
- Who (in the certifying body) is authorized to interpret the test results?

Users of this standard should make themselves familiar with the IFOAM Position on Genetic Engineering, which states (in part) that, “*IFOAM is opposed to any approach that forces organic producers to bear the burden of problems caused by others. It is IFOAM's position that the responsibility for GE gene contamination lies with the polluters. The producers and the users of GMOs must be held fully responsible for preventing the spread of the GMOs and their properties. Organic farmers should not have to prove their crops are uncontaminated. This*

*approach is not predicated on the de-certification of organic producers due to contamination, but rather on the right of all farmers not to have their farms contaminated by genetic pollution.”*

### **Risk assessment**

This guidance mentions the need for certifying bodies to perform risk assessments in certain situations. Risk assessment is a simple concept that is often made more complicated than it needs to be. Risk assessment is the process whereby a certifying body:

- Identifies the potential for mistakes, fraud, contamination or other threat to the integrity of the certification program in certain situations;
- Evaluates the level of risk associated with the situation (low, medium or high risk);
- Determines appropriate ways to reduce the risk;
- Provides appropriate controls in areas of low risk.

In practical terms, a risk assessment is a thorough review of situations (operators, practices, sites) in order to evaluate how likely and severe the risk is, and then decide what measures should be in place to effectively prevent or control the harm from happening. A proper risk assessment will allow certifying bodies to focus on areas of risk (such as transport, for example; who is looking after the organic product once it leaves the farm?) and place appropriate surveillance on areas of low-risk (long established small farms, for example). It is not necessary (or useful) to treat all situations similarly. Risk assessment will reduce the regulatory burden on low-risk operations (a reward for good behaviour) and will increase the effectiveness of the certification program by allowing resources to be directed towards elimination of high-risk situations. Certifying bodies could develop a procedure for risk assessment. For example:

<b>Situation</b>	<b>Risk factors</b>	<b>Risk assessment</b>	<b>Risk determination (high/medium/low)</b>	<b>Decision</b>
Buffer zone	Neighbour land use, factories, highways	Neighbours are retired farmers with a few horses on pasture	Low	Buffer zone not required
Treated seed	High volume of seed used, varieties that are commonly treated, # of years in program	Operator uses large amounts of commercial seed from traditional suppliers, corn, beans, peas, alfalfa seed, 2 years in program	High	Request invoices for all seed sown, unannounced inspection
Apiary location	3,000 m from flowers treated with prohibited materials	Apiaries are located in mountain areas, away from nonorganic crop production	Low	Extra surveillance not required
Comingling	Organic & nonorganic processing, commercial transport, uncertified retailer	Manufacturer produces organic and nonorganic versions of the same product, organic and nonorganic product shipped together, no agreement with trucking firm, product is owned by retailer at point of transport	High	Inspection to ensure proper purge between organic and nonorganic runs, request agreement in place with trucking firm regardless of ownership at point of transport
Retail handling	No certification, use of organic product in bulk product dispensers, no organic program in place	Retailer is not certified but is handling product certified by your certifying body, retailer is handling bulk lentils (in bulk bins) certified by your certifying body, retailer does not have an organic program in place	High	Report retailer to CFIA

## Appendix B - Labelling Requirements

### Labelling Rules under the Canada Organic Regime (According to Canadian Products Regulations (SOR/2006-338))

	<b>Organic</b>	<b>Contains xx% organic ingredients</b>	<b>Ingredient panel claims</b>
<b>Type of claim allowed for categories to the right</b>	<b>More than 95% organic Ingredients</b> (less water & salt)	<b>Between 70-95% Organic Ingredients</b> (less water & salt)	<b>Less than 70% Organic Ingredients</b> (less water & salt)
<b>Main Panel</b> “ <b>Organic</b> (common name of product)” “ <b>Biologique</b> (common name of product)”	<b>Allowed:</b> Organic, Biologique followed by common name. Main package panel (Example: Organic Tortilla Chips)	<b>Prohibited</b>	<b>Prohibited</b>
<b>Main Panel Organic Claim Limitations</b>	100% claim is not an official category in the OPR, so it is <b>not permitted</b>	<b>Must be:</b> Contains xx% organic ingredients	<b>Prohibited</b>
<b>Ingredient Requirements</b>	Organic ingredients shall be clearly distinguished from nonorganic ingredients and organic can be no more prominent	Organic ingredients shall be clearly distinguished from nonorganic ingredients	Organic ingredients may only be identified as organic in ingredient list
<b>Requirements for Name and Placement of Certification Body</b>	The name of the certification body that has certified the product as an organic product	The name of the certification body that has certified the product as an organic product	Neither certification nor verification by a certifying body is required. However, claim must be true and documented.
<b>Use of Official Marks</b> (National logo)	<b>Optional</b> For imported products, must have ‘imported’ or ‘product of’ in close proximity (this may change with 2008 CPR)	<b>Prohibited</b>	<b>Prohibited</b>
<b>Certifying Body Logo</b>	Optional	Optional	<b>Prohibited</b>
<b>Address of CB</b>	Optional	Optional	Optional
<b>Composition of Product Allowances</b>	<b>Organic</b>	<b>Contains xx% organic ingredients</b>	<b>Ingredient panel claims</b>
<b>Nonorganic, Nonagricultural Ingredients</b>	- Must not be genetically engineered, irradiated, or from cloned animals - Must be listed in Permitted Substances Lists in appropriate category	- Must not be genetically engineered, irradiated, or from cloned animals - Must be listed in Permitted Substances Lists in appropriate category	- No restrictions
<b>Nonorganic Agricultural Ingredients</b>	- Must be not available in organic form - Prohibition includes products of genetic engineering, irradiation, and cloned animals (of product or ingredients).	- Prohibition includes products of genetic engineering, irradiation, and cloned animals (of product or ingredients).	- No restrictions