CAN/CGSB-32.310-202X

Supersedes CAN/CGSB-32.310-2020,

Corrigendum No. 1

Organic production systems General principles and management standards

Developed by the Canadian General Standards Board

ICS 67.040 / 67.120.30
Document type: National Standard of Canada
Document stage: **40 – Public review**

Warning

This document is not an approved standard. It is a draft distributed to CGSB committee members and other interested persons for review and comment. This draft is subject to change without notice and must not be referred to as a CGSB Standard.

Recipients of this document are invited to submit their comments, to advise the CGSB committee of any relevant patent rights that they are aware of, and to provide supporting documentation. This information should be provided on or before 2025-07-29, to:

Astrid Lozano
Canadian General Standards Board
L'Esplanade Laurier
140 O'Connor Street
Tower East, 6th floor
Ottawa, ON Canada K1A 0S5
Astrid.Lozano@tpsgc-pwgsc.gc.ca

Manager, Standards Division
Canadian General Standards Board
140 O'Connor Street,
Tower East, 6th floor
Ottawa, ON Canada K1A 0S5
Telephone: 1-800-665-CGSB
Email: ncr.cgsb-ongc@tpsgc-pwgsc.gc.ca
Internet: https://www.tpsgc-pwgsc.gc.ca/ongc-cgsb/index-eng.html

---

This standard was developed by the Canadian General Standards Board and published in Month Year.

ICS 67.040 / 67.120.30

ISBN XXX-X-XXX-XXXX-X

Catalogue number XXX-XXX-XXX-202XE-PDF

CETTE NORME NATIONALE DU CANADA EST DISPONIBLE EN VERSIONS FRANÇAISE ET ANGLAISE.
La version française de la présente norme est intitulée *Systèmes de production biologique Principes généraux et normes de gestion*

CANADIAN GENERAL STANDARDS BOARD

Committee on Organic Agriculture

(Voting membership to be updated at date of ballot approval)

Chair (Voting)

Marie-Eve Levert	Independent Consultant (General interest)

General interest category

Allison Grant	SIC - Standards Interpretation Committee
Allison Squires	Canadian Organic Growers (COG)
Andrew Hammermeister	Organic Agriculture Centre of Canada, Dalhousie University
Ashley Cornell	Canadian Health Food Association (CHFA)
Christian Legault	Filière Biologique du Québec
François Labelle	Lactanet
Melissa Speirs	British Columbia Society for the Prevention of Cruelty to Animals - Certification Division
Nicole Boudreau	Organic Federation of Canada
Rochelle Eisen	Independent Consultant
Shannon Sommerauer	Canadian Produce Marketing Association
Tia Loftsgard	Canada Organic Trade Association

Producer category

Daniel Terlizzese	Ontario Greenhouse Vegetable Growers
Elodie Nadeau	Fédération des producteurs acéricoles du Québec
Hélène Champagne	Union des producteurs agricoles
Janine Gibson	Manitoba Organic
Jason Peters	Fruit and Vegetables Growers Canada
Jeffrey Spitters	Chicken Farmers of Canada
Martin Meinert	SaskOrganics Association Inc.
Pierre Lampron	Dairy Farmers of Canada
Serge Lefebvre	Egg Famers of Canada
Simon Jacques	Organic Council of Ontario
Tim Rundle	Pacific Organic Seafood Association.
Tracey Smith	Organic Alberta

Regulator category

Marie-Claire Hurteau	Canadian Food Inspection Agency
Nicolas Turgeon	Ministère de l'Agriculture, des Pêcheries et de l'Alimentation du Québec
Nicolas Walser	Organic BC
Vincent Vilela	Conseil des appellations réservées et termes valorisants

User category

Carrie-Anne Palmeri	Small Scale Food Processor Association
Christine Jean	Conseil de la transformation alimentaire du Québec (CTAQ)
Dag Falck	Responsible Organic Customer Association ROCA
Jay Jackson	Consumer Council of Canada Interest Alliance
Keith Mussar	Canadian Association of Importers and Exporters
Kelly Monaghan	International Organic Inspectors Association

Committee Manager (non-voting)

Astrid Lozano	Canadian General Standards Board

Translation of this National Standard was conducted by the Government of Canada.

Preface

This National Standard of Canada, CAN/CGSB-32.310-20XX, supersedes the 2020 edition and 2021 amendment.

Changes since the previous edition

- Additional and revised definitions and removal of the numbering system for definitions. Rather than numbering, the definitions are now listed in alphabetical order in both the French and English standards.

- Additions, deletions and changes in the following clauses: Organic plan; Crop production; Livestock production; Specific production requirements (particularly Apiculture; Maple products; Sprouts, shoots and microgreens production; and Crops Grown in Structures or Containers [previously known as Greenhouse crops]); Maintaining organic integrity during cleaning, preparation and transportation; and Organic product composition.

- The subclause 7.7 Organic insects has been greatly expanded.

The following definitions apply in understanding how to implement this National Standard of Canada:

- "shall" indicates a **requirement**;
- "should" indicates a **recommendation**;
- "may" is used to indicate that something is **permitted**;
- "can" is used to indicate that something is **possible**, for example, that an organization is able to do
- something.

Notes accompanying clauses do not include requirements or alternative requirements. The purpose of a note accompanying a clause is to separate explanatory or informative material from the text. Annexes are designated normative (mandatory) or informative (non-mandatory) to define their application.

Contents Page

0 Introduction

0.1 Description

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 operations that are sustainable and harmonious with the environment.

CAN/CGSB-32.310*,* Organic Production Systems – General Principles and Management Standards, describes the principles and management standard of organic production systems.

CAN/CGSB-32.311*,* Organic Production Systems – Permitted Substances Lists, provides lists of substances that are allowed for use in organic production systems.

As is the case for 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.

0.2 General principles of organic production

Organic Agriculture is based on the following general principles[1,2:]

Principle of health – Organic agriculture should sustain and enhance the health of soil, plants, animals, humans and the planet as one and indivisible.

Principle of ecology – Organic agriculture should be based on living ecological systems and cycles, work with them, emulate them and help sustain them.

Principle of care – Organic agriculture should be managed in a precautionary and responsible manner to protect the health and well-being of current and future generations and the environment.

Principle of fairness – Organic agriculture should build on relationships that ensure fairness with regard to the common environment and life opportunities.

0.3 Organic practices

Neither this standard[3] nor organic products produced in accordance with this standard represent specific claims about the healthiness, safety and nutrition of such organic products.

Management methods are carefully selected in order to restore and then sustain ecological stability within the operation and the surrounding environment. Soil fertility is maintained and enhanced by promoting optimal biological activity within the soil and conservation of soil resources. Pests, including insects, weeds and diseases, are managed using biological and mechanical control methods, and cultural practices that include minimized tillage, crop selection and rotation, recycling of plant and animal residues, water management, augmentation of beneficial insects to encourage a balanced predator–prey relationship, the promotion of biological diversity and ecologically based pest management.

---

[1] From https://www.ifoam.bio/why-organic/shaping-agriculture/four-principles-organic

[2] For the historical organic principles (from 2006 edition) including the definition of fairness, refer to Annex C.

[3] References throughout this document to "this standard" or “this National Standard of Canada” refer to CAN/CGSB-32.310, *Organic Production Systems — General Principles and Management Standards*.

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.

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

Organic practices and this standard cannot ensure 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 ensure the least possible residues at the lowest possible levels.

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

This standard is intended for certification and regulation to prevent deceptive practices in the marketplace. The certification process assesses operational compliance. Certification is granted to compliant products. Certification bodies must allow a period of up to 12 months after the publication date of an amendment to this standard and to CAN/CGSB-32.311 for an applicant to come into compliance with any changes to the requirements.

0.4 Notes and examples in this standard

In this standard, notes and examples are used for giving additional information intended to assist the understanding or use of the document and are not a normative part of the standard.

Organic production systems
General principles and management standards

1. Scope

1.1 This National Standard of Canada applies to the following organic products:

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;

b) Processed agricultural crop and livestock products intended for human consumption or use and derived from the items mentioned in 1.1 a);

c) Livestock feed;

d) Processed agricultural crop and livestock products intended for animal consumption or use and derived from the items mentioned in 1.1 a).

1.2 Organic products referenced in this standard are derived from a production system that:

a) seeks to nurture ecosystems through its management practices in order to achieve sustainable productivity; and

b) provides control of pests including insects, weeds and disease through enhancement of biodiversity, recycling of plant and animal residues, crop selection and rotation, water management, tillage and cultivation.

1.3 Units of measure

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 being official in the event of dispute or unforeseen difficulty arising from the conversion.

1.4 Prohibited materials or techniques in organic production and preparation

If producing or preparing organic products, the following materials or techniques are prohibited since they are incompatible with the general principles of organic production:

a) all products of and materials from genetic engineering (GE), as defined in this standard, and as specified in 4.1.3, 5.1.2 and 6.2.1 of CAN/CGSB-32.311;

b) all products, materials or processes intentionally using nanotechnology, as defined in this standard, with the following exceptions:

   1) naturally occurring nano-sized particles or those produced incidentally through processes such as grinding flour;

   2) contact surfaces, such as equipment, work surfaces or packaging, where transference of nano-sized particles to organic crops, livestock or products is unintended and unlikely to occur;

c) irradiation, as defined in this standard, for the treatment of organic products and inputs used in the production of organic products, except as specified in CAN/CGSB-32.311;

d) cloned livestock (see definition in Clause 3) and its descendants;

e) equipment, harvest and storage containers, storage facilities and packaging materials treated with fungicides, preservatives, fumigants and pesticides not listed in CAN/CGSB-32.311, except as permitted in 8.2.3 and 8.3.3 of CAN/CGSB-32.310.

1.5 Prohibited substances in organic production and preparation

In addition to Clause 1.4, when producing or preparing organic products, the following substances are prohibited since they are incompatible with the general principles of organic production:

a) soil amendments, such as fertilizer or composted plant and animal material, that contain a substance not listed in CAN/CGSB-32.311;

b) sewage sludge;

c) any crop production aids or substances not listed in CAN/CGSB-32.311;

d) plant, fungal and animal growth regulators, except as specified in CAN/CGSB-32.311;

e) veterinary drugs, including antibiotics and parasiticides, except as permitted by this standard;

f) non-organic ingredients, food additives and processing aids used in organic product preparation, including sulphates, sulphites, nitrates and nitrites, except as permitted by this standard or specified in CAN/CGSB-32.311;

g) formulants except as specified in CAN/CGSB-32.311.

NOTE See the Permitted Substances Lists Decision Tree in Annex B for a methodology that may assist in the completion of input reviews.

2. Normative references

The following normative documents contain provisions that, through reference in this text, constitute provisions of this National Standard of Canada. The referenced documents may be obtained from the sources noted below.

NOTE The addresses provided below were valid at the date of publication of this standard.

An undated reference is to the latest edition or revision of the reference or document in question, unless otherwise specified by the authority applying this standard. A dated reference is to the specified revision or edition of the reference or document in question.

2.1 Canadian General Standards Board (CGSB)

CAN/CGSB-32.311 – *Organic production systems – Permitted substances lists*.

CAN/CGSB-32.312 – *Organic production systems: Aquaculture—General principles, management standards and permitted substances lists*

2.1.1 Source

The above may be obtained from the Canadian General Standards Board, Sales Centre, Ottawa, ON Canada K1A 0S5. Telephone: 1-800-665-2472. E-mail: ncr.cgsb-ongc@tpsgc-pwgsc.gc.ca. Web site: www.tpsgc-pwgsc.gc.ca/ongc-cgsb/index-eng.html.

2.2 Canadian Food Inspection Agency (CFIA)

Method of production claims on food labels

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

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

Safe Food for Canadians Act (S.C, 2012, c. 24)

Safe Food for Canadians Regulations (SOR/2018-108), Part 13.

Seeds Regulations (CRC c. 1400)

2.2.1 Source

The above may be obtained from CFIA at http://www.inspection.gc.ca/ or from Justice Laws Web site at http://laws-lois.justice.gc.ca.

2.3 IFOAM Organics International

Principles of Organic Agriculture.

2.3.1 Source

The above may be obtained from the IFOAM Web site at https://www.ifoam.bio/why-organic/shaping-agriculture/four-principles-organic.

2.4 National Farm Animal Care Council (NFACC)

In the event of any conflict or inconsistency between this standard and a Code of Practice listed below, this standard shall take precedence.

Code of Practice for the Care and Handling of Dairy Cattle

Code of Practice for the Care and Handling of Beef Cattle

Code of Practice for the Care and Handling of Veal Cattle

Code of Practice for the Care and Handling of Pigs

Code of Practice for the Care and Handling of Pullets and Laying Hens

Code of Practice for the Care and Handling of Hatching Eggs, Breeders, Chickens and Turkeys Code of Practice for the Care and Handling of Sheep

Code of Practice for the Care and Handling of Goats

Code of Practice for the Care and Handling of Rabbits

Code of Practice for the Care and Handling of Bison

2.4.1 Source

The above may be obtained from the NFACC Web site at https://www.nfacc.ca/codes-of-practice.

2.5 Animal Health Canada

Canadian Livestock Transport Course

2.5.1 Source

The above may be obtained from the Animal Health Canada web site at https://campus.animalhealthcanada.ca/.

3 Terms and definitions

For the purposes of this National Standard of Canada, the following terms and definitions apply.

aeroponics (*aéroponie*)
soil-free cultivation method whereby plants are suspended with their roots exposed to the air.

agricultural ingredients *(ingrédients agricoles)*
pertaining to crops and livestock and any products, including processed ingredients, resulting from crops and livestock. Processed agricultural ingredients and products may be manipulated physically or biologically but are no longer considered to be agricultural products or agricultural ingredients if they are more than minimally processed or if they are chemically altered in a way that creates new compounds. For guidance on what is considered "minimal processing", see Annex 1 - Minimum processes of the *Method of production claims on food labels*.

agricultural products (produits agricoles)
see definition for “agricultural ingredients”

agro-ecosystem (*agro-écosystème*)
system consisting of the form, function, interaction and equilibrium of the biotic and abiotic elements present within the environment of a given agricultural operation.

allopathic (*allopathique*)
use of allopathy.

allopathy (*allopathie*)
method of treating disease with substances that produce a reaction or effects different from those caused by the disease itself.

annual seedling (*semis annuel*)
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.

antibiotic **(*antibiotique*)**
any drug or combination of drugs which is prepared from certain microorganisms, or which formerly was prepared from microorganisms but is now made synthetically, and which possesses inhibitory action on the growth of other microorganisms including fungi, bacteria and viruses.

apiculture (*apiculture*)
management and production of honeybees, queens and their products. Examples are honey, beeswax, pollen, royal jelly, propolis and bee venom.

beak treatment *(traitement du bec)*
blunting of the beak using a non-invasive procedure (i.e. infra-red).

beak trimming (***rognage du bec)***
removal of a portion of the beak, usually by hot blade, an instrument that simultaneously cuts and cauterizes.

bedding (*litière*)
material added to livestock housing environments for the purpose of adding comfort and to encourage natural behaviours. Examples: chopped straw, wood shavings.

biobased (*biosourcé*)
substance that is derived from a plant, animal or microbial source.

biodegradable (*biodégradable*)
crop and livestock inputs and production aids capable of microbial decomposition within 24 months in soil (with the exception of plant biomass), one month in aerated water and two months in anaerobic water, with minimal impact on the environment.

biological (*organique*)
pertaining to multicellular or unicellular organisms (or their components), such as animals, plants, fungi, bacteria, proteins, nucleic acids and viruses, etc.

buffer zone (*zone tampon*)
clearly defined and identifiable boundary area that separates an organic production unit from adjacent non-organic areas.

carbohydrate (*glucides*)
sugar or starch compound, such as dextrose (glucose).

cloned animals (*animaux clonés*)
identical animals resulting from human manipulation of embryos and embryo transfer, using techniques such as somatic cell nuclear transfer, embryonic cell nuclear transfer or embryo splitting.

colony (*colonie*)
typically an aggregate of several thousand worker bees, drones, and a queen bee living together in a hive or in any other dwelling as one social unit.

commercially available (*disponible sur le marché*)
documented ability to obtain a production input or an ingredient in an appropriate form, quality, quantity or variety, irrespective of cost, in order to fulfill an essential function in organic production or preparation.

commingling (*mélange*)
mixing of or physical contact between bulk, unbound or unpackaged organic products and non-organic products during production, preparation, transportation, or storage.

compost (*compost*)
product of a carefully managed aerobic process by which biological materials are digested by microorganisms.

compost tea (*thé de compost*)
liquid soil amendment or foliar feed used to promote beneficial bacterial growth that is created by steeping mature compost in water.

compromised animal (*animal fragilisé*)
an animal that exhibits any signs of infirmity, illness, injury or of a condition that indicates that it has a reduced capacity to withstand transport.

crop rotation (*rotation des cultures*)
practice of alternating crops grown in a specific field in a planned sequence and in successive crop years so that crops of the same species or family are not continuously grown in the same field. Perennial cropping systems employ techniques such as alley cropping, intercropping and hedgerows to introduce biological diversity in lieu of crop rotation.

derived from biological or mineral sources *(dérivé de sources organiques ou minérales)*
isolated/extracted from primary biological or mineral sources and arising directly from biological or geological processes without creating new chemical compounds. See CAN/CGSB-32.310 Annex B Permitted Substances Decision Tree.

disbudding (*ébourgeonnage*)
a procedure that removes the horn bud (from which the horn grows) before it attaches to the skull, which usually

occurs at 2 months of age in cattle and at 21 days of age in goats. When horns are removed after the horn bud attaches to the skull, it is called dehorning.

environmental enrichment (livestock) (*enrichissement de l'environnement (production animale)*)
provision of safe materials or objects to an animal's environment that encourage the expression of natural behaviour and exercise. The materials or objects are appropriate for the livestock production system and stage of production and do not include functional equipment or other objects or materials required by this standard.

feed additive (*additif pour alimentation animale*)
substance added to feed in small quantities to fulfil a specific nutritional need. Examples are essential nutrients in the form of amino acids or vitamins and minerals, and non-nutritive additives such as anticaking agents and antioxidants.

feed supplement (*supplément alimentaire*)
feed that is used in conjunction with other feeds to improve the nutritive balance of the total and that is intended to be:

a) fed undiluted as a supplement to other feeds,
b) available separately and offered free choice, along with other parts of the ration, or
c) further diluted and mixed to produce a complete feed.

NOTE In Canada, the *Feeds Act* requires that the resulting feed is acceptable for registration.

fermentation (*fermentation*)
conversion of a carbohydrate into simpler or more complex carbon-based compounds by an enzyme or enzymes produced by microorganisms. For example, sugars can be fermented in the presence of yeast to produce alcohol or acetic acid along with carbon dioxide. Fermentation followed by extraction and purification can isolate the substance from other products of fermentation and impurities; this can be used to produce compounds such as enzymes, antibiotics, amino acids and organic acids (e.g., citric, gibberellic, lactic acids). Also known as microbial fermentation or biofermentation.

fertilizer (*engrais*)
single or blended substance composed of one or more recognized plant nutrients.

filtrate (*filtrat*)
liquid that passes through an osmosis filter in the production of maple or other tree sap syrup.

food additive (*additif alimentaire*)
has the same meaning as in B.01.001 of the Food and Drug Regulations.

flight zone (*zone de fuite*)
the distance at which an animal moves away from another animal or human. The size of the flight zone reflects the species, the animal's age and past experiences, and the relationship between the animal and the handler.

food-grade (*qualité ou grade alimentaire*)
designation used to identify that a substance (for example, a cleaning material, gas, etc.) or material (for example, a counter, containers, a conveyor, etc.) may come in contact with food, food contact surfaces or is safe for human consumption.

forage (*fourrage*)
vegetative material in fresh, dried or ensiled state that is fed to livestock, for example, pasture, hay or silage.

formulant, production aid (*produits de formulation utilisés avec les auxiliaires en production végétale*)
any component of a production aid (CAN/CGSB-32.311 Table 4.2 Column 2) added for its functional effect on the input substance, such as a stabilizer, surfactant or spreader. These formulants will not have an active effect on pests.

formulant, soil amendment (*produit de formulation utilisés avec les amendements du sol*)
any component added to a soil amendment (CAN/CGSB-32.311, Table 4.2 Column 1) for its functional effect on the input substance, such as a preservative or pH adjuster. These formulants will not chemically react with the active components or otherwise modify the soil amendment's capacity to change soil fertility, chemistry or tilth.

frass (*scuire d'insectes*)
a mixture of insect excreta, insect parts and exoskeletons, as well as undigested feed and bedding.

genetic engineering (*génie génétique*) also commonly known as resulting in Genetically Modified Organisms (GMOs)
artificial manipulation of living cells for the purpose of altering its genome constitutes genetic engineering and refers to a set of techniques from modern biotechnology by which the genetic material of an organism is changed in a way that does not occur other than through traditional breeding by multiplication or natural recombination. The genome is considered an indivisible entity; artificial technical/physical insertions, deletions, or rearrangements of elements of the genome constitute genetic engineering.

Techniques developed in the future may be considered genetic engineering. Examples of the techniques used in genetic engineering include, but are not limited to:

- genome/gene editing techniques, such as but not limited to CRISPR, that replace one DNA sequence with another, transposes, deletes or adds a gene sequence or a part of gene sequence;
- recombinant DNA (rDNA) techniques that use vector systems;
- cisgenesis;
- intragenesis;
- agro-infiltration;
- techniques involving the direct introduction into the organism of hereditary materials prepared by whatever means, inside or outside the organism;
- cell fusion (including protoplast fusion) or hybridization techniques that overcome natural physiological, reproductive or recombination barriers, where the donor cells/protoplasts do not fall within the same taxonomic family or are created outside, or manipulated within, the organism through techniques such as, but not limited to, synthetic biology.

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

- in vitro fertilization;
- conjugation, transduction, transformation, or any other natural process;
- polyploidy induction;
- cell fusion (including protoplast fusion) or hybridization techniques where the donor cells/protoplasts are in the same taxonomic family and not created outside, or manipulated within, the organism through techniques such as, but not limited to, synthetic biology.

grazing season (*saison de pâturage*)
The period of time when pasture is available for grazing due to local seasonal climate, available moisture, soil condition, availability of forage and other land access constraints. Grazing season dates may vary because of seasonal variations or extreme weather events and may or may not be continuous. The grazing season may be

extended, for example, by grazing stockpiled pasture or annual crops, as outlined in the operation's organic system plan.

herbivore (*herbivore*)
animal that feeds chiefly on plants.

hive (***ruche***)
human-constructed housing for bees including related components.

hydroponic production (*production hydroponique*)
plants grown in hydroponic production systems mainly draw their nutrients from supplied solutions of soluble nutrients. The hydroponic growing system is characterized by a growing medium which can vary and can be as diverse as an aqueous matrix, or an inert material (e.g., rockwool), or carbon-based material (e.g., coir) and any combination thereof, and may or may not contain soil.

incidental additives (*additifs indirects*)
substances used in organic processing facilities that have the potential to remain present in organic products as residues. Examples are hand products (cleaners, antiseptics, lotions, barrier creams), boiler water treatment compounds, water treatment compounds, lubricants (release agents, solvents), anti-foaming agents and non-food chemicals (sanitizers, disinfectants, cleaning agents and detergents).

ingredient (*ingrédient*)
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.

input (*intrant*)
substance used in production or preparation. Examples are fertilizers, feed supplements, pesticides, soil amendments, veterinary treatments, processing aids, sanitizing and cleaning materials.

irradiation (*irradiation*)
désigne le traitement des aliments par rayons ionisants (voir radiation).

isolation distance (*distance d'isolement*)
distance established to segregate an organic crop from a commercialized GE crop of the same crop type. An isolation distance is the shortest distance from the edge of an organic crop to the edge of the nearest GE crop of that crop type.

litter (*portée*)
a group of young animals born at one time to one mother. Example: a litter of piglets.

litter material (*fumier*)
a mixture of bedding material with animal excreta, such as manure, dust and feathers, collected from the floor of livestock housing (e.g., barn, coop).

livestock (*animaux d'élevage*)
any domestic or domesticated animal including bovine, ovine, porcine, caprine, equine, lagomorph (rabbits), poultry and bees raised for food or used in the production of food. The products of hunting or fishing of wild animals are not included in this definition.

manure (*déjections animales*)
livestock feces, urine and other excrement.

microgreens (*micro-verdurettes*)
edible young plants that are harvested later than sprouts, generally when cotyledons are fully formed or when two or four true leaves are present.

mushroom mycelium (*mycélium de champignon*)
the main vegetative body of a fungus, consisting of a network of thread-like filaments called hyphae, from which mushrooms fruit or grow. In commercial mushroom production, mycelium is also used to colonize or inoculate spawn media to produce spawn and a subsequent crop of mushrooms (fruiting bodies).

mushroom spawn (*blanc de champignon*)
a combination of mycelium and substrate or growth media used to inoculate substrate to propagate mycelium and mushrooms.

nanotechnology (*nanotechnologie*)
manipulation of matter at atomic, molecular, or macromolecular dimensions typically between 1 and 100 nm to create materials, devices and systems with fundamentally new properties and functions. Nanoscale chemical substances, or nanomaterials, behave differently from their macroscale counterparts, exhibiting different mechanical, optical, magnetic or electronic properties.

nutrient management plan (*plan de gestion des nutriments*)
nutrient budget or plan in which the timing and rate of nutrient application is based on soil nutrient status (soil test results), crop nutrient needs, the amendment (manure, compost, plow-down crop or other permitted substance), 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.

operation (*exploitation*)
farm, company or organization that produces or prepares an organic product; an operation may have multiple production units (see definition of "production unit").

operator (*exploitant*)
person, company or organization that produces, prepares, packages or owns the brand of product(s) with a view to the subsequent sale**,** trade or marketing of products labelled as organic.

organic integrity (*intégrité biologique*)
maintenance of the inherent organic qualities of a product from the receipt of ingredients through to the end consumer.

organic product (*produit biologique*)
any commodity or output produced by a system compliant with this standard.

organic production (*production biologique*)
method of agricultural production in compliance with this standard.

parallel production (*production parallèle*)
simultaneous production or preparation of organic and non-organic crops, including transitional crops, livestock and other organic products of the same or similar varieties that are visually indistinguishable by the common person when the crops, livestock or products are positioned side by side.

parasiticide (*antiparasitaire*)
pharmaceutical substance or veterinary drug, such as an anthelmintic (dewormer), used to control internal or external parasites in livestock.

perennial crop (*culture vivace*)
crop, other than a biennial crop, that can be harvested from the same planting for more than one crop year.

pest (*organisme nuisible*)
organism causing damage to humans or to resources used by humans, such as certain viruses, bacteria, fungi, weeds, parasites, arthropods and rodents.

pesticide (*pesticide*)
substances used, directly or indirectly, to attract, prevent, destroy, repel or mitigate pests; or to alter the growth, development or characteristics of weeds. Includes any organism, substance or mixture of substances, and devices, such as lures or traps.

planting stock (*matériel de reproduction végétale*)
plant or plant tissue (unpotted), other than seedlings or transplants, used in plant production or propagation. Examples are leaf or stem cuttings, bare roots, rhizomes, shoots, crowns, tubers, bulbs or cloves.

prebiotics (*prébiotiques*)
fibre food and potential carriers for bacteria. Examples of prebiotic substrates are inulin, lactulose, various galacto-oligosaccharides, fructo-oligosaccharides, xylo-oligosaccharides and sugar alcohols.

preparation (*préparation*)
includes, with respect to an organic product, post-harvest handling, manufacturing, processing, treatment, preservation, and slaughter.

probiotics (*probiotiques*)
microorganisms that provide health benefits when consumed.

processing aids (*auxiliaires de production*)
substances added to food during processing for a technological effect, but are not present in the finished product or are at insignificant and non-functional levels.

production unit (*unité de production*)
identifiable portion of an operation as outlined in the organic plan in which production or preparation of an organic product occurs. For example, a production unit may be a field with clearly marked boundaries, a pasture, a greenhouse, a series of greenhouses, a building or buildings. A “livestock production unit” is a herd or flock of animals or birds with its associated infrastructure such as barns and pastures. An entire operation, even one with disconnected fields or buildings, may be considered one production unit if the whole operation is organic and following one organic plan. Where there is split or parallel production, organic production units are sufficiently segregated from non-organic production units to ensure that there is no cross-contamination.

prohibited materials (*matériaux interdits*)
materials prohibited by Clause 1.4.

prohibited substances (*substances interdites*)
substances prohibited by Clause 1.5 or not listed in CAN/CGSB-32.311.

radiation,_non-ionizing (*non ionisante*)
any type of electromagnetic radiation that does not carry enough energy to ionize atoms. Has longer wavelengths (>100 nm), lower frequencies, and lower energy (mega-electron volts (MeV)) than ionizing radiation. Includes ultraviolet light, visible light, infra-red, microwaves, radio frequencies, and low, very low and extremely low frequencies.

radiation,_ionizing (*ionisante*)
any type of electromagnetic radiation that is capable of freeing electrons from an atom, causing the atom to become charged (or ionized). Ionizing radiation includes X-rays and gamma rays. Irradiated food is typically exposed to ionizing radiation generated 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.

records (*registres*)
information in written, visual or electronic form that documents the activities undertaken by an operator engaged in the production or preparation of organic products. See 4.4. for details.

removal event (*intervention subséquente*)
procedure performed prior to organic production runs, batches or loads, to prevent organic product from coming into contact with prohibited substances or commingling with non-organic products. Examples of removal events are rinsing with potable water, letting surfaces drip-dry, and purging a system with organic product.

salt (*sel*)
sodium chloride, or low-sodium and sodium-free substitutes that serve the purpose of providing salt flavour, nutrition or microbial control in a product**.** When used as a soil amendment, the term "salt" also includes calcium chloride and potassium chloride.

seed coating (*pelliculage des semences*)
a substance applied to the surface of a seed for a function distinct from seed pelleting.

seed pelleting (*enrobage des semences*)
augmenting a seed with substances to increase the size of seed to facilitate seeding.

seed priming (*trempage des semences*)
adding water-based solutions into seeds, before sowing, to improve the uniformity and speed of germination. Once wetted, the seed is dried to allow for shipping and short-term storage.

seed treatment (*traitement des semences*)
adding pest control products, plant growth regulators or inoculants, etc., to seeds to assist with their field performance. Can be performed pre- or post-sowing.

sewage sludge (*boues d'épuration*)
solid, semi-solid and liquid fractions generated by municipal or industrial sewage treatment facilities including, but not limited to, domestic septage, scum or solids (biosolids). Does not include wastewater that has undergone advanced treatment processes/systems.

soil (*sol*)
mixture of minerals, organic matter and living organisms.

Specified Risk Material (SRM) (*matériel à risque spécifié [MRS]*)
the skull, brain, trigeminal ganglia (nerves attached to the brain), eyes, tonsils, spinal cord and dorsal root ganglia (nerves attached to the spinal cord) of cattle aged 30 months or older; and the distal ileum (portion of the small intestine) of cattle of all ages.

split operation (*exploitation fractionnée*)
operation that produces or prepares both organic and non-organic agricultural products, including transitional products.

split production (*production fractionnée*)
production or preparation of both organic and non-organic agricultural products, including transitional products.

symbiotics (*symbiotiques*)
combination of prebiotics and probiotics. Many contain a combination of probiotic culture with a prebiotic substrate that favours its growth.

synthetic biology (*biologie synthétique*)
broadly describes the design and construction of novel artificial biological pathways, organisms or devices, or the artificial redesign of existing natural biological systems.

synthetic substance (*substance synthétique*)
manufactured substance, including petrochemicals, formulated by a chemical process or by a process that chemically alters compounds extracted from plant, microorganisms, animal or mineral sources. This term does not apply to compounds synthesized or produced by physical processing or biological processes, which may include

heat and mechanical processing. However, minerals altered through chemical reactions caused by heating or burning are classified as synthetic.

traceability (*traçabilité*)
ability to track product, backwards and forwards, through all stages of production and preparation.

traditional breeding (*sélection génétique traditionnelle*)
traditional breeding has its basis in biological sexual reproduction. It occurs between closely related organisms, in reproductive cells, and between related chromosomes through homologous recombination.

transitional period (*période de conversion*)
period of time between the start of an organic management program and the attainment of organic status by a production unit or operation.

transplant (*plant repiqué*)
seedling that has been removed from its original place of production, transported and replanted.

unfit animal (*animal inapte*)
an animal that exhibits any signs of infirmity, illness, injury or of a condition that indicates that it cannot be transported without suffering.

veterinary biologic (*produit biologique vétérinaire*)
helminth, protozoa or microorganism; or a substance or mixture of substances derived from animals, helminths, protozoa or microorganisms; 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.

veterinary drug (*médicament vétérinaire*)
substance or mixture of substances represented for use or administered 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.

wild crop (*plante sauvage*)
plants collected or harvested in their natural habitat.

yeast (*levure*)
single-celled microorganisms that produce enzymes, carbon dioxide (CO_2), and other metabolites from carbohydrates, whose functional roles are frequently used in the processes of fermentation, baking and flavouring foods, adding nutritional value and providing health benefits.

yeast autolysate extract (*extraits d'autolysats de levure*)
water-soluble components of the yeast cell, generally produced by autolysis, a process in which the rupture of cell wall is induced mechanically or chemically.

4 Organic plan

4.1 The operator shall prepare an organic plan outlining the details of transition, production, preparation and management practices.

4.2 The organic plan shall be updated, at a minimum, on an annual basis to address changes to the plan or management system, problems encountered in executing the plan, and measures taken to overcome such problems. If additional changes are made throughout the year, such as adding a new product, crop, field, input,

etc., or if there is a change in ownership/management, the organic plan shall be updated and submitted for approval by the certification body.

4.3 The organic plan shall include a description of the internal record-keeping system, with documents sufficient to meet the audit requirements specified in clause 4.4, and other record-keeping requirements indicated throughout the standard.

4.4 Identification and record keeping

4.4.1 The operator shall record the lot code or other unique identifier, such as harvest date, manufacture date, best-before date, animal ear tag number, or flock number, etc., that was assigned to an organic product, animal or flock for the purposes of identification, traceability and accountability. Lot codes or other unique identifiers shall be apparent on all non-retail and retail final consumer sale units. Documentation indicating lot codes or other unique identifiers shall accompany bulk product.

4.4.2 The operator shall maintain records and relevant supporting documentation in sufficient detail to ensure they are readily understood and auditable. These records shall include documentation on inputs and materials, production, preparation, storage, transport and sales related to:

a) organic unprocessed plants and plant products;

b) organic livestock and livestock products;

c) organic processed agricultural crop and livestock products;

d) organic livestock feed; and

e) organic seed.

4.4.3 The records shall reflect the scope, complexity, and activities of the operation and are not limited to:

a) visual aids, such as maps and flow charts;

b) common operational records, such as:

1) purchase and sales records;

2) receiving logs;

3) records of inputs and substances used, including remaining inventories;

4) sanitation logs and checklists;

5) inventories of raw ingredients and finished goods;

6) training records; and

7) inbound and outbound transportation and distribution records.

c) other crop and livestock production records, such as crop rotations, planting, tillage, harvest, herd or flock records, livestock health and storage; and

d) preparation and handling records, such as manufacturing logs and production records.

4.4.4 Records shall be readily auditable and fully disclose all activities and transactions making it possible to trace and account for:

a) the origin, nature and quantity of organic products that have been delivered to, used, and/or produced on the production unit or operation;

b) the nature, quantity and consignees of products that have left the production unit or operation;

c) any other information for the purposes of verification, such as the origin, nature and quantity of inputs, ingredients, additives and manufacturing aids delivered to the production unit, and the composition of processed products;

d) activities or processes that demonstrate compliance with this standard; and

e) the role and activities of intermediaries (such as brokers, traders, distributors, third party storage, repackers, conditioners, or cross dockers) of inbound or outbound supply chains to prevent organic fraud.

4.4.5 An identification system shall be implemented to distinguish non-organic crops, livestock, and products from their organic counterparts. For example, organic and non-organic crops or livestock could differ in their general appearance, colour or type.

4.4.6 The operator shall design and implement a risk management plan to prevent GE contamination, which may include strategies such as physical barriers, border rows, delayed planting, testing of seeds, isolation distances; and equipment and storage sanitation protocols. When transition is preceded by GE crop production, the operator shall implement a risk management plan to prevent emergence of GE seed after the 36-month transition period.

4.4.7 Records shall be maintained for at least five years beyond their creation.

4.4.8 If a pest control substance that is not listed in CAN/CGSB-32.311 is used under any mandatory government program, the operator shall monitor and document its use.

NOTE In the event of an emergency pest outbreak, Canadian operators are required to notify their certification body immediately of any change that may affect organic product certification.

5. Crop production

Clause 8.4 on Transport applies to the transportation of plants and harvested crops.

5.1 Land requirements for organic crop production

5.1.1 This standard shall be fully applied on a production unit for at least 12 months before the first harvest of organic products. Prohibited substances shall not have been used for at least 36 months before the harvest of an organic crop. When transition is preceded by GE crop production, the 36-month transition period is calculated from the date on which the growth of a prohibited GE crop is terminated (e.g., by harvest, tillage, etc.). The operator shall implement a risk management plan to prevent emergence of GE seed after the 36-month transition period (per 4.4.4).

5.1.2 When new production units are added to an existing organic operation, the operator shall provide records to show that prohibited substances have not been used for at least 36 months (see 5.1.1) and verification shall be conducted before the first harvest of products from this new production unit.

NOTE Part 13 Organic Products of the *Safe Food for Canadians Regulations* requires that the application for the organic certification of crops grown in fields, gardens or pastures be filed at least 15 months before the day on which the food is expected to be sold. During that period of time, compliance with this standard will be assessed by the certification body and this assessment must include at least one inspection of the production unit, during production, in the year before these crops may be eligible for certification and one inspection, during production, in the year these crops are eligible for certification.

5.1.3 Any land used for organic production, whether a new operation or an addition to an existing operation, shall not have been cleared or otherwise converted to agricultural land by human intervention from a natural ecosystem that is dominated by indigenous plant species (e.g., primary or secondary forest, native prairie, permanent wetlands, or peatlands) within 60 months of the harvest of an organic crop.

This does not apply to the maintenance, management or revitalization of existing agricultural land (farm fence rows, shelter belts, tree lines, ditches, drainage projects, or tame pasture); or rehabilitation of abandoned agricultural land or land used for industrial purposes, such as mining and hydrocarbon extraction.

The operator shall provide records of prior management of such converted lands issued by persons responsible for this management.

This does not apply to operations with less than a total of 15 hectares in cultivation after clearing has occurred, nor does it apply to land cleared for growing native crops where the native soil remains primarily undisturbed.

5.1.4 The operation shall aim at a complete transition of its production. During the transition period, the operation can maintain, in addition to the production in transition, a non-organic system of production (split operation) that shall be entirely separate and identified separately, pending its incorporation into the overall transition process.

5.1.5 The operation can be converted one production unit at a time, and each converted production unit shall respect the requirements of this standard. The exception to this norm, parallel production, is only allowed in the following cases:

a) annual crops harvested during the final 24 months of the transition period when fields are added to existing operations;

b) perennial crops (already planted);

c) agricultural research facilities; and

d) production of seed, vegetative propagating materials and transplants.

5.1.6 The following special conditions shall be observed for parallel production:

a) The operator shall clearly demonstrate that the identity of the crops produced in this manner can be maintained during their production, harvesting, storage, processing, packaging and marketing; and/or

b) The operator shall maintain verifiable, accurate records of both non-organic and organic produce and product storage, transportation, processing and marketing.

NOTE Parallel production crops, both organic and non-organic, are inspected just prior to harvest and an audit of all parallel production crops occurs after harvest.

5.1.7 All production units shall have distinct, defined boundaries.

5.1.8 Production units shall not alternate between organic and non-organic management. By exception, due to catastrophic or uncontrollable factors, the operator may take land out of organic management, provided that:

a) the operator submits written notice to the certification body of the intent to alternate and justification of why organic status cannot be maintained, and receives conditional approval prior to the use of substances or methods prohibited by this standard. The final decision of the certification body to approve the plan to alternate will be based on a written action plan that includes:

1) a description of the intended change in management, including a timeline and details of the substances and practices that will be used during the period of non-organic management;

2) a timeline for transitioning the land back to organic management; and,

3) a description of how the organic plan will be amended to avoid future recurrence, if applicable.

b) The operator shall maintain verifiable, accurate records of both non-organic and organic production and product storage, processing, transportation, and marketing.

c) The land shall comply with requirements established in 5.1.1 to transition back to organic status and comply with 5.1.4.

Without prior approval by the certification body as described in 5.1.8 a), the production unit shall not be eligible for organic status for five (5) years following the last use of a prohibited substance or prohibited practice.

NOTE: Operators are required to notify their certification body immediately of any change that may affect organic product certification.

5.2 Environmental factors

5.2.1 Measures shall be taken to minimize the physical movement of prohibited substances onto organic land and crops from:

a) adjacent areas; and

b) equipment used for both organic and non-organic crops.

5.2.2 If unintended contact with prohibited substances is possible, distinct buffer zones or other features sufficient to prevent contamination are required:

a) buffer zones shall be at least 8 m (26 ft 3 in.) wide;

b) permanent hedgerows or windbreaks, artificial windbreaks, permanent roads, or other physical barriers may be used instead of buffer zones;

c) crops grown in buffer zones shall not be considered organic whether or not they are used on the operation; and

d) crops at risk of contamination from commercialized GE crops shall be protected from cross-pollination. Mitigation strategies such as, but not limited to, physical barriers, border rows, strategic testing or delayed planting shall be implemented unless generally accepted isolation distances for the at-risk crop type are present (see Note below).

NOTE Generally accepted isolation distances for crops at risk of contamination from commercialized GE crop types include: soybeans – 10 m (33 ft); corn – 300 m (984 ft); canola, alfalfa (for seed production) and apples – 3 km (1.8 mi.).

5.2.3 Untreated wood or wood treated with substances listed in Table 4.2 (Column 2) of CAN/CGSB-32.311 are permitted, such as for fence posts.

a) For new installations or replacement purposes, fence posts or wood treated with prohibited substances are not permitted. Alternatives, such as metal, plastic, concrete or protective sleeves, may be used.

b) Fence posts treated with prohibited substances are exceptionally permitted as perimeter fencing of production units to keep non-organic livestock in or wildlife out. Treated fence posts shall not come in contact with organic crop (including roots). If the livestock is organic, see 6.7.8.

c) Recycling of previously used fence posts treated with prohibited substances within the operation is permitted provided that they were installed prior to the operation's initial certification or installed per exception b) and there is no contact with organic crop (including roots).

5.2.4 The operator shall include, within the operation, measures that protect existing biodiversity and intentionally promote and protect ecosystem health by incorporating one or more of the following features (in addition to the organic practices of cover cropping, green manures, responsible tillage, and diversified crop rotation):

a) agroforestry;

b) biomass plantings, such as for biofuel or bedding;

c) grassed waterways;

d) pollinator habitats or insectary plantings (such as interplanting, companion planting, or banker plants to provide habitat for beneficial organisms, including beneficial insects);

e) wildlife habitat or avian sanctuary;

f) tree and shrub establishment;

g) vegetative barriers and field borders, wind breaks, or shelter belts;

h) water conservation;

i) restoration and maintenance of wetlands;

j) perennial forage or perennial plantings; or

k) pasture.

5.2.5 Inorganic waste materials shall not be left to accumulate on, or be incorporated into, organic fields. Examples include baler twine, irrigation drip tape, agricultural tarps, potting containers and row cover.

5.3 Seeds, seedlings and planting stock

5.3.1 Organic seed, annual seedlings/transplants, planting stock, (such as bulbs, tubers or cuttings) or other propagules (such as tissue culture) shall be used. Organic seed and planting stock may be treated, primed, pelleted, or coated with substances listed in Table 4.2 (Column 1 or 2) or Table 7.3 of CAN/CGSB-32.311.

5.3.2 Non-organic seed (or planting stock) produced on transitional land within the operation or in buffer zones may be planted within the same operation providing the buffer zone is managed within the operation.

5.3.3 Non-organic seed and unpotted annual or biennial planting stock from outside the operation are permitted provided that:

a) the seed or planting stock variety is not produced on or available from within the operation;

b) organic seed or planting stock of that variety is not commercially available, and a documented search involving potential, known organic suppliers has been conducted; and

c) when treated, primed, pelleted or coated, it is with substances listed in Table 4.2 (Column 1 or 2) or Table 7.3 of CAN/CGSB-32.311 with the following exceptions:

   1) seed primed with substances not listed on Table 4.2 (Column 1 or 2) or Table 7.3 of CAN/CGSB-32.311 is permitted providing that the priming process does not contain pesticides that are not listed on Table 4.2 (Column 2) or Table 7.3 of CAN/CGSB-32.311;

2) seeds and planting stock treated with substances necessary for compliance with international, federal or provincial phytosanitary or food safety regulations and approved for use by regulatory agencies such as Pest Management Regulatory Agency (PMRA) are permitted.

5.3.4 Non-organic perennial seedlings/transplants and perennial planting stock (see definitions of “perennial crop” and “planting stock” in Clause 3) are permitted provided that:

a) the variety is not produced on or available from within the operation;

b) organic seedlings/transplants or planting stock of that variety are not commercially available, and a documented search involving potential, known organic suppliers has been conducted;

c) when treated, it is with substances listed in Table 4.2 (Column 1 or 2) or Table 7.3 of CAN/CGSB-32.311 except if the planting stock has been treated with substances necessary for compliance with international, federal or provincial phytosanitary or food safety regulations and approved for use by regulatory agencies such as Pes Management Regulatory Agency (PMRA);

d) the land on which perennial planting stock or perennial seedlings/transplants are planted is subject to the requirements of 5.1.1;

e) perennial seedlings/transplants, such as strawberry plugs or potted thyme, shall be organic when the first harvest of organic product is within 12 months of planting into the organic production unit; Operators are granted an exemption until the 2030 planting season allowing the use of non-organic perennial seedlings/transplants for harvest within 12 months of planting;

f) non-organic perennial seedlings/transplants shall be managed in accordance with this standard for at least 12 months between planting into the organic production unit and the first harvest of organic products;

g) non-organic unpotted perennial planting stock that has not been treated with prohibited substances post-harvest (e.g., treated during storage after being dug up from the non-organic field) may be used to produce organic product within 12 months of planting on the organic operation and being managed in accordance with this standard; and

h) non-organic unpotted perennial planting stock that has been treated with prohibited substances post-harvest (e.g., during storage after being dug up from the non-organic field) shall be managed in accordance with this standard for at least 12 months between planting on the organic operation and the first harvest of organic products.

5.3.5 Seedlings and transplants

Seedlings and transplants shall be produced under the following conditions:

a) all clauses of 7.5 apply to the soil used for production (except soil volumes specified in 7.5.5.2, 7.5.5.3, 7.5.5.4). A soilless substrate/growth media may be used at first seeding without nutrient supplementation;

b) seedlings/transplants that are started in winter or spring for use within the operation may be grown by the operation in structures under 100% artificial lights from seeding to final transplanting; and

c) substrates used in the production of propagules produced through plant tissue culture or micropropagation shall comply with 1.4 a) of this standard.

5.4 Soil fertility and nutrient management

5.4.1 The main objective of the soil fertility and nutrient management program shall be to establish and maintain a fertile soil using practices that:

a) maintain or increase levels of soil organic matter,

b) promote an optimum balance and supply of nutrients,

c) stimulate biological activity within the soil, and

d) mitigate excess nutrient build-up in the soil or leaching into the environment.

5.4.2 Soil fertility and biological activity shall be maintained or increased through:

a) crop rotations or sequences that are diversified, including:
   1) plow-down crops, legumes, catch crops and deep-rooting plants;
   2) cover crops to prevent erosion; and
   3) no more than two consecutive years of the same annual crop species (when intended for sale);

b) incorporation of plant and animal matter in compliance with this standard and with Table 4.2 (Column 1) of CAN/CGSB-32.311, including:
   1) composted animal and plant matter;
   2) non-composted plant matter, specifically legumes, plow-down crops or deep-rooting plants within the framework of a multi-crop rotation; and
   3) unprocessed animal manure, including liquid manure and slurry, subject to the requirements of 5.5.1; and

c) where appropriate, perennial cropping systems employ techniques, such as alley intercropping with permanent cover, cover crops or plow-down crops.

5.4.3 Plant and livestock materials, as well as supplemental minerals, shall be managed to maintain or improve soil organic matter content, crop nutrients and soil fertility, while minimizing negative environmental impact. This shall be done 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 prohibited substances.

5.4.4 The organic matter produced on the operation shall be the basis of the nutrient cycling program. It may be supplemented with other nutrient sources described in this standard or listed in Table 4.2 (Column 1) of CAN/CGSB-32.311. However, water-soluble sources of nitrogen and phosphorus shall be limited to 20% of the crop's needs of each nutrient. Manure, anerobic digestate, and compost or compost tea are not included in the 20% limitation unless fortified with water-soluble sources of nitrogen and phosphorus. Manure is subject to the requirements of 5.5.1, and, in all cases, section 5.4.3 shall be respected.

If the 20% limitations of soluble nitrogen or phosphorus are exceeded in existing nutrient management plans, the operator shall develop a corrective action plan by January 1, 2027, to reduce the use of these soluble nutrients before 2030.

5.4.5 Tillage, when practiced, shall be conducted in a responsible manne r in order to:

a) maintain or improve the physical, chemical and biological condition of soil;

b) minimize damage to the structure and tilth of soil;

c) reduce soil salinization; and

d) minimize soil erosion.

The operator shall maintain records of tillage events.

Responsible tillage to mitigate risks of soil degradation from erosion, compaction/plow pan formation, salinization, and soil organic matter loss is described as: The use of tillage strategically and purposefully within cropping systems to enhance management and productivity in cropping systems while minimizing soil degradation. Practices may include reducing the frequency, intensity, aerial extent, and depth of tillage, as well as minimizing topsoil inversion and maintaining surface residue.

5.4.6 Burning to dispose of crop residue produced on the operation is prohibited. However, burning may be used for documented problems with pests, including insects, diseases or weeds (see 5.6.1), or to stimulate seed germination.

5.5 Manure management

5.5.1 Manure sources

5.5.1.1 Animal manure produced on the operation shall be used first. When all available manure is used up, organic manure from other sources may be used. If organic manure is not commercially available, non-organic manure is permitted provided that:

a) the non-organic source is not a fully caged system in which livestock cannot turn 360°; and

b) livestock is not permanently kept in the dark; and

c) the source and quantity of manure, type of livestock, and evaluation of the criteria in 5.5.1.1 a) and 5.5.1.1 b) shall be recorded.

NOTE Organic operations should make it a priority to use manure obtained from transitional or extensive livestock operations, not from landless livestock production units or from livestock operations that use genetically engineered (GE) ingredients or GE derivatives in animal feeds.

5.5.2 Land application of manure

5.5.2.1 The manure application program shall address land area, rate of application, time of application, incorporation into the soil and retention of nutrient components.

5.5.2.2 Soil amendments, including liquid manure, slurries, compost tea**,** solid manure, raw manure, compost and other substances listed in Table 4.2 (Column 1) of CAN/CGSB-32.311, shall be applied to land in accordance with good nutrient management practices.

NOTE In Canada, some additional provincial requirements may also apply.

5.5.2.3 Where manure is applied, the soil shall be sufficiently warm and moist to ensure active bio-oxidation.

5.5.2.4 The seasonal timing, rate and method of application shall ensure that manure does not:

a) contribute to the contamination of crops by pathogenic bacteria;

b) create significant run-off into ponds, rivers and streams; or

c) contribute significantly to ground and surface water contamination.

5.5.2.5 Animal manure that is neither composted (according to Table 4.2 Compost of CAN/CGSB-32.311) nor dried (according to Table 4.2 Animal manure, dried), nor otherwise specifically listed in Table 4.2 Column 1, must be:

a) incorporated into the soil at least 90 days before the harvest of crops that do not come into contact with soil and are intended for human consumption; or

b) incorporated into the soil at least 120 days before the harvest of crops that have edible parts that come into direct contact with the surface of the soil or with soil particles.

5.5.2.6 If livestock are used as part of the cropping or pest control program, a management plan shall be in place to ensure that livestock are controlled and that manure or manure-related contamination does not reach the portion of the crop intended for harvest.

5.5.3 Manure processing

Processing of animal manure using physical treatment (for example, dehydration), biological treatment, or treatment with substances listed in Table 4.2 (Column 1 or 2) of CAN/CGSB-32.311 is permitted. Loss of nutritional elements due to processing shall be minimized.

5.6 Management of crop pests, including insects, diseases and weeds

5.6.1 Practices to control pests, including insects, diseases and weeds, shall focus on organic management practices that enhance crop health and reduce losses due to weeds, disease, insects and other pests. Management practices include cultural practices (for example, crop rotations, establishment of a balanced ecosystem, and use of resistant varieties), mechanical techniques (for example, sanitation measures, cultivation, trapping, mulching and grazing) and physical techniques (for example, flaming against weeds and the use of heat against diseases).

5.6.2 When organic management practices alone cannot prevent or control crop pests, including insects, diseases and weeds, a biological or botanical substance, or other substance listed in Table 4.2 (Column 1 or 2) of CAN/CGSB-32.311 may be used. Conditions that led to the use of substances shall be documented in the organic plan (see clause 4).

5.6.3 If application equipment, such as a sprayer, is used to apply prohibited substances, it shall be thoroughly cleaned prior to use in an organic crop.

5.7 Irrigation

The irrigation of organic crops is permitted provided that the operator documents the precautions taken to prevent contamination of land and products with substances not included in CAN/CGSB-32.311.

5.8 Crop product preparation

Wherever organic product preparation takes place, 8.1 and 8.2 apply.

5.9 Facility pest management

Subclause 8.3 applies to pest management practices in and around crop facilities.

6 Livestock production

Livestock excludes apiculture which is covered in 7.1, and insect production covered in 7.7.

Subclause 8.4 on Transport applies to the transportation of organic livestock.

6.1 General

6.1.1 Livestock can make an important contribution to an organic agricultural system by:

a) improving and maintaining the fertility of the soil;

b) managing the flora through grazing;

c) enhancing biodiversity; and

d) facilitating complementary interactions on the operation.

6.1.2 Livestock breeds, strains and types shall be

a) suitable for, and able to adapt to, site-specific conditions within the local environment and production system;

b) known for their absence of disease and health problems, specific to breeds or strains; and

c) recognized for their vitality and resistance to prevalent diseases and parasites.

6.1.3 Livestock production is a land-related activity. Herbivores shall have daily access to pasture during the grazing season (see definition in Clause 3) and access to the open air at other times whenever weather conditions permit:

a) calculated on the basis of daily dry matter intake, the consumption of grazed forage by ruminants that have reached sexual maturity shall represent a minimum of 30% of the total forage intake;

b) consumption of grazed forage shall rise above 30% of forage intake during high forage growth periods;

c) consumption of grazed forage below 30% of forage intake is permitted at the beginning and end of the grazing season;

d) producers shall record the following details of the grazing season:

1) date of the beginning and end of the grazing season;

2) dates of confinement periods and reasons for confinement; and

3) rotation details: entry and exit dates, size of area, and number of animals on each paddock or pasture. For example, a grazing calendar or grazing chart can be used; and

e) a minimum of 0.13 ha (0.33 ac.) per animal unit shall be devoted to grazing. [One animal unit = one cow or one bull, or two calves each 102 to 227 kg (225 to 500 lb), or five calves, each less than 102 kg (225 lb), or four ewes and their lambs, or six does and their kids].

6.1.4 Livestock stocking rates shall correspond to local agri-climatic conditions and take into consideration feed production capacity, stock health, nutrient balance and environmental impact.

6.1.5 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.

6.1.6 As a general principle, the operator shall demonstrate their commitment to animal welfare. When an animal welfare issue is identified, the operator shall develop a corrective action plan. The operator shall document demonstrated improvements in animal welfare practices and shall make available upon request any documents or assessments mandated by industry associations.

6.1.7 The health and welfare of organic livestock shall be monitored, as well as their housing, feeding, watering and fencing systems, at the frequency required in the applicable Code of Practice (see 2.4) or an equivalent or superseding welfare program.

a) Where the Code of Practice or equivalent programs do not regularly require daily checks, at a minimum, all confined livestock (those not on pasture or extensive rangeland) and livestock reliant on a mechanical feed or water source shall be monitored at least once daily.

b) Individuals responsible for monitoring livestock shall be trained.

6.2 Origin of livestock and livestock products

6.2.1 Origin of livestock

6.2.1.1 Breeding stock shall:

a) be bred using natural methods of reproduction or artificial insemination, including mechanically separated sexed semen;
b) not be bred using embryo transfer or breeding techniques using genetic engineering or related technology;
c) not be administered reproductive hormones to trigger and synchronize estrus; and/or
d) be permanently identifiable and traceable to their birth on an organic operation or to their date of entry into organic management.

6.2.1.2 Livestock shall be continuously managed organically from birth or their transition date.

a) Breeding stock and dairy animals shall only enter organic management once, either at birth or when transitioned into organic management. When a non-organic breeding animal enters into organic management, its meat shall never be organic.
b) Livestock removed from an organic operation and subsequently managed on a non-organic operation shall be considered non-organic and shall not be re-transitioned into organic management.

6.2.1.3 Animals purchased for breeding shall be organic, except in the following circumstances:

a) When suitable organic breeding stock is not commercially available, non-organic breeding stock may be integrated into the organic operation provided that:
   1) a documented search of potential, known organic breeding stock suppliers has been conducted; and
   2) females are non-gestating and non-lactating at their time of arrival on the organic production unit, except replacement gilts, which must be integrated before the last third of gestation.
b) In case of catastrophic events, such as a barn fire or disease leading to repopulation, non-organic breeding stock (excluding poultry) may be brought onto an organic operation before the last third of gestation if suitable organic animals are not commercially available (see definition in Clause 3).

6.2.1.4 Organic ruminant producers shall produce sufficient suitable replacement stock within the organic operation. When suitable replacement stock cannot be produced on the operation in sufficient numbers, purchase of replacement stock may be supplemental (less than 50%) to on-farm production of ruminant breeding stock.

NOTE: It is expected that breeding stock replacement rates in organic farms be low and breeding stock lifespans be long and healthy. If a significant portion of the breeding stock on an operation requires replacement each year, operators are encouraged to review their organic management practices and investigate potential changes to improve sustainability and increase breeding stock longevity.

6.2.2 Organic livestock products

6.2.2.1 Organic livestock products shall be from livestock raised according to this standard.

6.2.2.2 Organic milk shall be the product of lactating ruminants born on organic production units and under continuous organic management, except in the following circumstances:

a) when operations initially transition into organic production following the requirements and allowances in 6.3; or
b) integration of non-organic breeding stock following requirements and allowances in 6.2.1.3, and under continuous organic management for at least 12 months.

6.2.2.3 Organic meat and slaughter by-products (e.g., bones, gelatin, etc), excluding poultry products, shall be the product of animals born on organic production units and under continuous organic management from the start of the dam's gestation period, except in the following circumstances:

a) when operations initially transition into organic production following requirements and allowances in 6.3; or
b) integration of non-organic breeding stock following requirements and allowances in 6.2.1.3.

6.2.2.4 Organic poultry products (e.g., eggs, meat and slaughter by-products) shall be the product of birds under continuous organic management beginning no later than the second day of life, and that have received no medication other than vaccines as fertilized eggs or day-old poultry.

6.3 Transition of livestock production units to organic production

6.3.1 Production of organic livestock products may begin, and offspring born of transitioned breeding stock may receive organic status, only when the livestock production unit has met the following requirements:

a) All land to which livestock have direct access, including pastures and outdoor areas, has completed organic transition as per 5.1;

b) All rations meet organic feeding requirements in 6.4, with the exception for transitional feed in 6.3.5; and

c) All applicable organic livestock production practices are implemented and documented.

6.3.2 During the final three months of transition of livestock production units:

a) feed shall be organic, or produced within the operation on lands that are in their final year of transition into organic production; and

b) all applicable organic livestock production practices are implemented and documented.

6.3.3 During the final 12 months of transition of livestock production units:

a) at least 80% of feed (dry matter basis) for transitioning breeding stock shall be either organic, or transitional feed produced within the operation,

b) the remaining 20% of feed for transitioning breeding stock may be non-organic;

c) use of non-organic feed (which may contain GMOs or other prohibited substances) shall be documented and traceable; and

d) plans shall be in place to comply with all applicable organic livestock production requirements.

6.3.4 Pasture, feed and forage that is produced on the operation in the final 12 months of the transition period may be consumed by livestock in the same production unit. When this feed and forage is stored, it:

a) shall be considered organic within the livestock production unit for up to 36 months following the completion of transition; and

b) shall not be considered organic outside the livestock production unit.

6.3.5 When transitioning additional land and expanding existing organic herds, transitioning breeding stock brought onto the operation may graze third-year transitional pasture until the beginning of the last third of gestation.

6.4 Livestock feed

6.4.1 The operator shall provide an organic feed ration that is balanced to meet the nutritional requirements of the livestock.

6.4.2 Livestock feed shall consist of substances that are necessary and essential for animal health, well-being and vitality, and that meet the physiological and behavioural needs of the species in question.

6.4.3 Producers shall maintain a relationship with a qualified expert or registered professional, such as an agrologist, nutritionist or experienced peer, who can assist with nutritional needs of animals as described in 6.4.1 and 6.4.2.

6.4.4 Specific livestock rations shall take the following into account:

a) for young mammals, the need for natural milk, including colostrum, within the first day of life;
b) in dairy operations, offspring may be taken from their mothers at the age of 24 hours, provided that they receive colostrum. If contagious diseases are present in the herd or flock, removal can occur sooner than 24 hours provided that the calves, lambs or kids receive colostrum.

Note: It is recommended to allow prolonged suckling, or contact, beyond 24 hours between dairy offspring and dams, for example by keeping offspring with dams for some portion of the day (calf-sharing) or using foster animals (nurse cows). This note will be reviewed in 2030;

c) in meat operations when removal of calves, lambs or kids from their mother is necessary to prevent the spread of a contagious disease, the use of non-organic milk or non-organic milk replacer is permitted as part of a veterinary-approved plan of disease eradication if organic alternatives are commercially unavailable. The veterinary-approved plan of eradication shall include a timeline and preventative measures such as testing milk, blood or manure, or pasteurizing milk. In order of preference, the following can be used (provided it is free of medication):

    1) organic milk (including pasteurized),
    2) organic milk replacer, non-organic milk, or
    3) non-organic milk replacer;

d) calves shall be given fresh, whole, organic milk or reconstituted organic milk provided that it is free of medication until the age of three months;
e) calves can be fed milk from an organic cow that received treatment with antibiotics if a withholding period of twice the label requirement or 14 days, whichever is longer, is applied;
f) lambs and kids shall be given fresh, whole, organic milk or reconstituted organic milk until the age of two months or a weight of 18 kg (39.7 lb);
g) ruminants shall be weaned gradually to minimize stress;
    1) dam-raised calves, lambs, and kids shall be weaned by limiting dam contact or nursing using strategies such as fenceline weaning, nose paddle/two-stage weaning, or natural weaning; and
    2) calves, lambs, and kids that are separated from their dams shortly after birth and fed milk (hand-raised) shall be weaned from milk gradually by reducing the quantity or frequency of milk feeding over at least five days;

NOTE: Research on the benefits and methods of gradual weaning in non-ruminants is still growing, and operators are encouraged to monitor developments in this area.

h) if they are not nursing, young animals shall be fed to meet their nutritional requirements and to achieve optimal growth and health by using artificial teats to satisfy their motivation to suck;

i) dairy calves, kids, and lambs shall have access to forage at all times;

NOTE: Refer to the Code of Practice for the Care and Handling of Dairy Cattle for recommendations on colostrum feeding and the quantity of milk to be fed to dairy calves.[4]

j) for ruminants, at least 60% of dry matter in daily rations shall consist of: hay; fodder that is fresh or dried; or ensiled forage, for example, fermented grass, legumes, and corn plants. An increased grain ration is permitted to ensure that nutritional requirements are met during uncommonly cold periods or when forage quality is compromised due to extraordinary weather events;
k) when ensiled corn is fed, unless there is analysis to the contrary, it shall be considered 40% grain/60% forage. The proportion of grain in ensiled corn shall be included in the percentage of grains in the ration [see 6.4.3 i)];
l) in the finishing phase, poultry shall be given grain;
m) poultry and pigs shall have daily access to organic plant material other than grain (i.e., the cereals, pulses and oilseeds normally found in the concentrate portion of a ration). Acceptable sources include but are not limited to pasture, hay, straw, alfalfa pellets, corn cobs, vegetables or fruit;
n) poultry shall be fed daily. A "skip-a-day" feeding regime for breeding birds is prohibited;
o) rabbits shall be given forage, such as grass and hay, and have access to material that keeps teeth healthy, such as gnawing blocks, root vegetables and tree branches. Substances in gnawing blocks shall be listed in Table 5.2 of CAN/CGSB-32.311.

6.4.5 The following feed, feed additives and feed supplements are prohibited:

a) feed and feed additives, including amino acids and feed supplements, that contain substances not listed in Table 5.2 of CAN/CGSB-32.311;
b) feed medications or veterinary drugs, including hormones and prophylactic antibiotics, to promote growth;
c) approved feed supplements or feed additives used in amounts greater than those required for adequate nutrition and health maintenance for the species at its specific stage of life;
d) feeds that are chemically extracted or defatted with prohibited substances;
e) feed that contains mammalian or avian slaughter by-products;
f) feed that contains preservatives unless they are listed in Table 5.2 of CAN/CGSB-32.311;
g) silage preservation products unless they are listed in Table 5.2 of CAN/CGSB-32.311;
h) appetite enhancers or flavour enhancers unless they are listed in Table 5.2 of CAN/CGSB-32.311;
i) feed formulas that contain manure or other animal waste; and
j) feed that contains colouring agents unless they are listed in Table 5.2 of CAN/CGSB-32.311.

6.4.6 Livestock of all ages shall have access to clean, fresh water on demand. Livestock water sources shall be tested according to livestock drinking water quality guidelines and procedures outlined in quality assurance programs mandated by industry associations, if available, otherwise water testing shall be conducted according to the relevant Code of Practice (see 2.4).

6.4.7 Force feeding of ducks and geese is prohibited.

6.4.8 By exception, non-organic feed is permitted under the following circumstances. Exceptional use of non-organic feed or forage in the case of a catastrophic event or forage shortage shall not affect the organic status of livestock for milk or meat.

6.4.8.1 If organic feed is unobtainable as the result of a catastrophic event with a direct impact on the production unit (for example, fire, flood, or extraordinary weather conditions), non-organic feed may be used for a maximum

[4] In this standard, Codes of Practice or Code of Practice refers to Canada's best practices for the care and handling of livestock (https://www.nfacc.ca/codes-of-practice). See 2.4.

of ten consecutive days (or up to 30% non-organic feed for up to 30 consecutive days) to ensure a balanced livestock ration. Non-organic feed from land in transition to organic production and free of prohibited substances shall be used in preference to non-organic feed.

NOTE The certification body should be notified as soon as possible after non-organic feed is used.

6.4.8.2 Non-organic, non-genetically engineered forage is permitted as follows, by exception, in the event of a regional forage shortage that is documented by the operator and, when possible, confirmed by a regional authority:

a) Non-lactating cows, ewes and does, and replacement females may be given non-organic forage provided that the animals are segregated; are visually distinguishable (for example, have ear tags and age verification records); record keeping is maintained; and the non-organic forage is chosen with the following order of priority preference:
   1) non-organic forage from land in transition;
   2) non-organic forage grown without the use of prohibited substances;
   3) non-organic forage grown without the use of prohibited substances for at least 60 days prior to harvest.
   4) non-organic forage provided it is not a genetically engineered crop.

b) If the quantity of forage allowed in 6.4.7.2 a) is insufficient, non-organic forage may comprise up to 25% of the forage ration for the entire ruminant herd in order of priority preference as outlined in 6.4.7.2 a).

c) The operator shall design a contingency plan to address future forage shortages which may include strategies such as growing more climate-adapted varieties, improving grazing practices, stockpiling a supply of forage, identifying alternative supply chains, varying herd size, and improving the resilience of on-farm forage production.

NOTE The certification body should be notified before non-organic forage is used.

6.5 Handling and transport

6.5.1 Livestock shall be managed responsibly, with care and consideration. Stress, injury and suffering shall be minimized in all livestock handling practices, including transport and slaughter.

6.5.2 Operators shall demonstrate that all persons involved in handling livestock are trained in and use low-stress, calm handling methods to safeguard animal health and welfare.

6.5.3 Handling areas shall be maintained to provide good traction. Distractions that cause animals to balk shall be minimized or removed.

6.5.4 When moving animals, operators and staff shall use the following techniques in order of preference:

a) working with an animal's flight zone;
b) visual aids, such as alternative driving aids (e.g., flags or sticks with plastic ribbons); or
c) gentle use of paddles or boards.

6.5.5 When small animals other than poultry are picked up, they shall be moved in an upright position while fully supporting its body and/or placing them in a container or small vehicle (e.g., cart, sled).

6.5.6 Animals must not be pulled or lifted by the fleece, hair, tail, skin, ears or limbs. Birds must not be picked up solely by the head, neck, one wing or feathers.

6.5.7 The use of electric prods is prohibited except when human or animal health or safety is at risk. In this case, electric prods can only be used:

a) as a last resort;
b) when the animals have a clear path to move; and

c) following the requirements in the applicable Code of Practice.

6.5.8 Any use of electric prods shall be documented. The operator shall develop a plan to avoid using the electric prod in the future. For example, the operator could identify issues that are triggering dangerous behaviour in livestock and remove such triggers, and/or improve handling facilities.

6.5.9 For the duration of the transport period (starting when feed, water, or rest are restricted until slaughter or until restoration of free access to feed, water and rest), the health and welfare of animals shall be protected. Factors that shall be taken into consideration to prevent harm in transport include:

a) selection and condition of transport equipment (truck, trailer, container, crate, etc.) appropriate for the species and size of animals and environmental conditions;

b) transport densities, taking into account temperature and environmental conditions, animal health, body condition, horn and coat status, and journey length; and

c) compatibility of animals in the transport group, including species, size, age, horn status, sex and familiarity of individuals.

6.5.10 The use of allopathic tranquilizers is prohibited during transportation.

6.5.11 For the duration of the transport period as described in 6.5.9, animals shall have shelter against inclement weather, such as wind, rain and excessive heat or cold.

6.5.12 Fitness for transport shall be assessed before loading. Compromised or unfit animals (see definition in Clause 3) shall not be transported other than for veterinary care, and with special provisions required by Part XII (Transport of Animals) of the Health of Animals Regulations. For example, compromised or unfit animals include those that are sick, injured, lame, extremely thin, in the last 10% of gestation, in peak lactation, or have an unhealed or infected navel.

6.5.13 If livestock is unfit for transport and euthanasia is necessary, it shall be performed by competent personnel with appropriate equipment. The method used shall be an approved method from the species' Code of Practice.

NOTE 1 It is recommended that all persons involved in transport participate in training to ensure competency in essential skills such as animal handling and knowledge of animal transport regulations. Available courses include Animal Health Canada's Canadian Livestock Transport Course (see 2.5).

NOTE 2 Operators must comply with all applicable provincial and federal regulations related to transport and slaughter. For transportation and federal slaughter establishments in Canada, see the Health of Animals Regulations under the *Health of Animals Act* (Canadian Food Inspection Agency). For additional guidance, refer to the transportation sections in the Code of Practice for each animal type (see 2.4). For provincially regulated slaughter, refer to provincial legislation.

6.6 Livestock health care

6.6.1. The operator shall establish and maintain preventative livestock health care practices, including:

a) the choice of appropriate breeds or strains of livestock, as specified in 6.2.1;
b) a feed ration sufficient to meet the nutritional requirements of the livestock, including vitamins, minerals, protein, fatty acids, energy sources, and fibre;
c) housing, pasture conditions, space allowance and sanitation practices that minimize crowding and the occurrence and spread of disease and parasites;
d) conditions appropriate to the species that allow for exercise, freedom of movement, and minimal stress;
e) prompt treatment for animals with detectable disease, lesions, lameness, injury or other physical ailments;
f) vaccines, in accordance with this standard and Table 5.3 of CAN/CGSB-32.311, if it has been documented that the targeted diseases are communicable to livestock on the production unit or operation and cannot be combated by other means;

g) monitoring livestock Body Condition Scores (as defined in the relevant Code of Practice) and documenting any corrective actions taken;
h) maintaining a relationship with a qualified expert or registered professional, such as a veterinarian, experienced peer, or expert at a provincial animal health centre, who can assist in the event of health issues.

6.6.2 The operator shall not administer:

a) veterinary drugs, in the absence of illness, other than vaccines. Anaesthetics and analgesics are permitted, subject to the requirements for physical alterations in 6.6.4;
b) synthetic substances to stimulate or retard growth or production, including hormones for growth promotion;
c) synthetic parasiticides, except by way of an exception provided in 6.6.11;
d) antibiotics to meat animals or to birds for meat or egg production;
e) chemical allopathic veterinary drug (see definition in Clause 3)for preventative treatments, for example, pharmaceuticals, antibiotics, hormones and steroids.

6.6.3 Hormonal treatment shall only be used for therapeutic reasons and under veterinary supervision. The meat from treated animals shall not be organic unless the treatment is listed in Table 5.3 of CAN/CGSB-32.311.

6.6.4 For all livestock, physical alterations are prohibited unless they are essential for animal health, welfare or hygiene; for identification; or for safety reasons; and are listed below in 6.6.4.7. Operators must take steps to avoid physical alterations and should work towards phasing out routine alterations, other than for identification as required by law. All physical alterations are subject to the following:

6.6.4.1 Except for poultry, regardless of age or method, anesthetics and non-steroid anti-inflammatory analgesics shall be used in consultation with a veterinarian to provide sufficient pain control; sedatives should be considered to further minimize stress.

6.6.4.2 Physical alterations should be done at as young an age as possible. Other than for poultry, they shall be done after the first 24 hours of life.

6.6.4.3 Physical alterations must be performed by, or under the direct supervision of, competent personnel using proper, clean, sanitized, and well-maintained tools, and accepted techniques.

6.6.4.4 Tagging for identification is permitted when required by law. One additional ear tag, or tail web tag (for goats) is permitted.

6.6.4.5 Physical alterations permitted by livestock type are listed in 6.6.4.7. Physical alterations not listed are permitted by exception if they are required to protect the health or welfare of the animal and if they are done by a licensed veterinarian. They shall be on an individual basis rather than for a group of animals. Exceptional events that require physical alterations shall be documented and corrective action shall be taken to avoid recurrence.

6.6.4.6 The following physical alterations are prohibited even under veterinary supervision: caustic paste disbudding, castration of cull boars, spaying of female beef cattle, and preventative tail docking of cattle.

6.6.4.7 Specifications by species:

a) Poultry:

1) Infrared beak treatment is permitted for one-day-old laying hens.

2) Infrared beak treatment and spur removal are permitted for one-day-old turkeys.

3) Beak trimming is allowed by exception until birds are ten days old in situations when infrared beak treatment has failed or in flocks where infrared beak treatment is not available. Beak trimming shall be done in a way that no more than one third of the upper beak is removed, as measured from the tip to the entrance

of the nostrils. In case of cannibalism outbreak, beak trimming is allowed after ten days of age under veterinary supervision. If beak trimming is used, it shall be documented.

See definitions of beak treatment and beak trimming in Clause 3.

Note: This clause (6.6.4.7 a)) will be reviewed in 2030.

b) Pigs:

1) Castration is permitted for piglets under ten days of age.

2) Tail docking is permitted only if a documented outbreak of cannibalism occurs and the issue cannot be addressed by other methods. The docked tail shall be at least 2.5 cm in length and the operator shall follow the method outlined in written instructions by a veterinarian.

c) Cattle:

1) Disbudding by hot iron is permitted on animals less than two months of age.

2) Clamp castration and rubber ring castration are permitted on animals less than two months of age.

3) Tail docking of cattle is permitted only when necessary to treat injured animals.

4) Branding is prohibited unless required by law. If required by law, freeze branding with pain control shall be used, and the operator shall provide documentation showing that it is required by law.

d) Sheep:

1) Castration is permitted by clamp for lambs under two months of age and by rubber ring for lambs under seven days of age.

2) Tail docking is permitted for lambs under seven days of age, with the following methods in order of preference (the least painful technique is listed first):

i. hot iron,
ii. rubber band and clamp, or
iii. rubber band.

3) Docked tails must cover the vulva in ewes and the equivalent length in rams. Tails must be docked no shorter than the distal end of the caudal fold.

e) Goats:

1) Disbudding by hot iron is permitted for kids under 21 days of age.

2) Clamp castration is permitted for kids under two months of age and rubber ring castration is permitted for kids under 14 days of age.

Note: The National Farm Animal Care Council's Code of Practice for the Care and Handling of Sheep and Code of Practice for the Care and Handling of Beef are under revision at the time of publishing the 2025 Canadian Organic Standard. Operators are expected to keep up to date with current Codes of Practice, as this standard is expected to meet or exceed the current published Codes of Practice at their time of implementation.

6.6.5 Biological, cultural, and physical treatments and practices outlined in Table 5.3 of CAN/CGSB-32.311 are permitted if preventative practices and vaccines are inadequate to prevent sickness or injury and treatment is required.

6.6.6 Medical treatment shall not be withheld from sick or injured livestock to preserve their organic status. If methods acceptable to organic production fail, all appropriate medications shall be used to restore livestock to health.

6.6.7 If the presence of injured or diseased livestock presents a health risk to individual animals or birds, the injured or diseased animals shall be separated from the herd or flock, and/or euthanized, if necessary (see 6.6.13). Isolated animals shall be kept in spaces that adhere to the requirements of 6.7.1. Where possible, the isolated animal shall have physical contact with other conspecifics. If physical contact with conspecifics endangers animal health or welfare, the operator may provide visual and auditory contact with conspecifics instead. In case of an emergency, the animal may be isolated temporarily until its condition improves sufficiently to rejoin other conspecifics.

6.6.8 Shipping diseased livestock to slaughter is prohibited if the end product is intended for human consumption.

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

6.6.10 The use of veterinary medicinal substances shall comply with the following (see definitions of veterinary drug, veterinary biologic, parasiticide and antibiotic in Clause 3).:

a) If no alternative treatments or management practices exist, veterinary biologics, including vaccines, parasiticides or the therapeutic use of medications may be administered, provided that such medications are permitted by this standard and Table 5.3 of CAN/CGSB-32.311 or are required by law.

b) Phytotherapeutic medicines, that is, botanical compounds such as atropine, butorphanol and other medicines from herbaceous plants, excluding antibiotics; and homeopathic or similar products, shall be used in preference to chemical, allopathic veterinary drugs or antibiotics, provided that they are effective for the species and the condition for which the treatment is intended.

c) If the products permitted by 6.6.10 a) and b) are ineffective in combating illness or injury, prescribed veterinary drugs not listed in this standard or in Table 5.3 of CAN/CGSB-32.311 may be administered to breeding stock, layers or dairy animals with written authorization by a veterinarian. Some restrictions apply (see 6.6.2, 6.6.11 d) and 6.6.12). With the exception of parasiticides administered according to 6.6.11, meat from animals treated with veterinary pharmaceutical drugs not listed in Table 5.3 of CAN/CGSB-32.311 shall not be organic, and offspring of animals treated in the last third of gestation shall not be organic.

d) If a veterinary drug is administered and it does not have specific withdrawal requirements, a withholding period of twice the label requirement or 14 days, whichever is longer, shall be observed before livestock products from treated animals may be considered organic.

e) Animals that require the use of antibiotics or other substances restricted in 1.5 e) for the same disease for three consecutive years shall be removed from the herd within nine months following the last course of treatment.

f) In emergencies, antibiotic treatment of dairy animals is permitted under the following conditions:

   1) The operator shall have written instructions from a veterinarian indicating the product and the treatment method to be used;

   2) Treatment shall result in a milk withdrawal period of at least 30 days after the last day of a course of treatment, or a withholding period that is twice the label requirement, whichever is longer;

   3) Antibiotic use shall be documented in herd health records;

   4) If dairy animals receive more than two treatments of veterinary drugs annually, whether antibiotics, parasiticides or one of each, they shall lose their organic status and go through a 12-month transition period.

6.6.11 Organic livestock operations shall have a comprehensive plan to minimize parasite problems. The plan shall include preventative measures, such as genetic selection, pasture management, fecal monitoring and assessments of tissue at slaughter, and emergency measures in the event of a parasite outbreak. Hygienic cleaning and disinfection methods for barns, such as power washing, steam washing, floor burning and lime washing, shall be included in the plan as well as down time (i.e., when the barn is vacant). By way of an exception, if preventative measures fail due to, for example, climatic conditions or other uncontrollable factors, the operator may use parasiticides that are not listed in Table 5.3 of CAN/CGSB-32.311, provided that:

a) observation of the animal, fecal test results, or assessment of tissue, as appropriate for the species, indicates that livestock is infected with parasites;
b) the operator provides a written action plan, with a timeline, describing how they will amend their parasite control plan to avoid similar emergencies;
c) the operator has written instructions from a veterinarian indicating the product and method to be used, including provisions to avoid developing parasite resistance, such as rotation of parasiticides;
d) withdrawal times are twice the label requirement or 14 days, whichever is longer;

If these conditions are met, the following restrictions apply:

e) the exception cannot be granted for a group of animals or an entire production unit for more than two years in a row for the same problem;
f) a dam from any species may receive only one treatment of parasiticides during gestation;
g) meat animals from any species less than 12 months old shall receive at most one parasiticide treatment. Meat animals 12 months of age or older that receive more than two parasiticide treatments in their lifespan shall lose their organic status;
h) dairy animals that receive more than two treatments in a 12-month period, whether of parasiticides, antibiotics or one of each, shall lose their organic status and go through a 12-month transition period;
i) dairy cull animals that receive more than two treatments with parasiticides over their lifespan shall never be considered organic for meat;
j) dairy cull animals that receive antibiotics shall never be considered organic for meat;
k) swine breeding stock animals that present with a high parasite load may receive up to three parasiticide treatments in a year as part of a parasite reduction plan. This exception cannot be applied systematically [refer to 6.6.11 b) and e)];
l) laying hens that receive more than two parasiticide treatments in a 12-month period shall lose their organic status. Treatment of the flock, rather than individual hens, is permitted.

6.6.12 Poultry or breeding livestock treated with a parasiticide, or veterinary drug not listed in Table 5.3 of CAN/CGSB-32.311 shall be considered non-organic meat animals. Exceptions pertaining to parasiticide use may apply (see 6.6.11).

6.6.13 Injured, diseased or sick animals shall be given individual treatment designed to minimize pain and suffering, which may include euthanasia.

6.6.14 Forced moulting of poultry is prohibited.

6.7 Livestock living conditions

6.7.1 The operator shall establish and maintain animal living conditions that accommodate the health and natural behaviour of animals, including:

a) access to the outdoors, shade, shelter, rotational pasture, exercise areas, fresh air and daylight, suitable for the species and stage of production taking into consideration the climate and the environment;
b) access to fresh water (see 6.4.5) and high-quality feed that meets the needs of the animal;
c) sufficient space and freedom to stretch out while lying down, stand up, stretch limbs and turn freely, and to express normal patterns of behaviour;

d) space allowances in proportion to local conditions, feed production capacity of the operation, livestock health, nutrient balance of livestock and soils, and environmental impact;
e) production techniques that foster the long-term health of livestock, especially when high levels of production or growth rates are required of animals;
f) good air quality. Operators shall prevent humidity, airborne dust particles and ammonia from reaching levels that can impair the well-being of animals. If ammonia levels exceed 20 ppm, remedial action shall be taken. Ammonia levels shall not exceed 25 ppm. In addition, air quality shall be managed according to the Code of Practice for the type of livestock in question (see 2.4);
g) appropriate resting and bedded areas that meet the needs of the animal. Indoor areas shall be large enough, solidly built, comfortable, clean and dry. Resting areas shall be covered with a thick layer of dry bedding that absorbs excrement. If organic bedding is commercially unavailable, bedding material from non-genetically engineered sources that is free of prohibited substances for at least 60 days prior to harvest may be used. Non-agricultural absorbent bedding sources (for example, minerals, cellulose, sawdust, and wood shavings) can be used for livestock bedding as long as they meet the requirements in 1.4 and 1.5, and do not contain, or have not been treated with, prohibited substances;
h) housing with non-slip floors. Solid flooring is preferable. Where non-slip slatted floors exist, the floor shall not be entirely of slatted or grid construction. The floor design shall ensure that the feet of the smallest animal cannot get caught in a void. Areas between voids shall be at least as wide as the feet of the animals;
i) animals that give birth indoors shall be provided with sufficient space and a clean, dry, well-bedded space with stable footing. Birthing facilities shall allow for separation from other animals and all the mother's needs shall be accommodated, including milking and nursing, until the mother is recovered from the birthing process. Animals shall not be tied or tethered when giving birth;
j) construction and management of outdoor exercise areas and pasture to encourage appropriate use by livestock to prevent animal discomfort, and to avoid soil degradation, long-term damage to vegetation and the contamination of water.

6.7.2 Access to the outdoors and freedom of movement may be restricted for the following reasons, provided that confinement is temporary:

a) inclement weather;
b) conditions in which livestock health or safety is jeopardized, given the stage of production; and
c) conditions in which soil, water or plant quality would be compromised.

The operator shall document the reasons for, and duration of, confinement. Measures taken to reduce the need to restrict outdoor access in the future shall also be documented when circumstances are within the operator's control.

6.7.3 When livestock are housed indoors, at least one form of environmental enrichment shall be provided so that all animals in the group have daily access. Enrichment does not include functional equipment or other objects or materials required by this standard.

Environmental enrichments suitable for different types of livestock

Type of Livestock:	**Examples of suitable enrichments**
Poultry:	Hanging peck objects, ramps, tunnels, straw/hay bales, pecking block products
Pigs:	Suspended chew toys, chains, rubber hoses, rubber toys, cloth strips, hanging knotted cotton ropes, scratch pads, straw/hay bales
Cattle:	Brushes, hanging ropes or chains, straw/hay bales
Sheep and goats:	Brushes, platforms, opportunities for climbing and hiding, brush or branches, straw or hay bales

6.7.4 The continuous tethering of livestock is prohibited, with an exemption for dairy cattle under conditions specified in 6.12.1.

6.7.5 Housing, pens, runs, equipment and utensils shall be cleaned and disinfected to prevent cross infection and build-up of disease-carrying organisms. Appropriate cleaners and disinfectants listed in Tables 5.3, 7.3 and 7.4 of CAN/CGSB-32.311 shall be used. If these substances are not effective, other cleaners and disinfectants are permitted on the recommendation of a veterinarian and with confirmation of a disease issue. In the event of a reportable disease, any effective disinfectant may be used to clean housing, pens and runs. Such uses shall be documented. For equipment that comes into contact with food products, the requirements in 8.2 apply, and substances listed in Tables 7.3 and 7.4 of CAN/CGSB-32.311 are permitted.

6.7.6 All livestock in a production unit shall be managed organically. Individual, non-organic animals may be present in the production unit if they are clearly identified and managed organically. Non-organic livestock production units may be present on an operation if they are clearly identified and kept separate from organic livestock production units.

6.7.7 Organic animals may graze with non-organic animals on common land, that is, crown range or community pasture, provided that:

a) documentation confirms that the land has not been treated with prohibited substances for at least 36 months;
b) documentation confirms that health care and feed products available to organic livestock while on common land are in accordance with this standard; and/or
c) identification permits a clear distinction between organically and non-organically raised animals.

6.7.8 For new installations or replacement purposes, wood for livestock barns and shelters treated with prohibited substances is allowed if livestock or feed does not come in contact with the wood. For existing barns and shelters, operators shall take measures to prevent contact, such as applying a barrier or establishing a buffer zone.

6.7.9 Wood used for livestock fencing shall be untreated or treated with substances listed in Table 4.2 (Column 2) of CAN/CGSB-32.311, except in the circumstances listed below.

a) existing fence posts treated with prohibited substances are permitted if they are in use on the production unit at the start of the organic transition. These posts may be reused within the operation as allowed in 6.7.8 b) and c);
b) new or reused fence posts treated with prohibited substances are permitted for exclusion or inclusion of livestock or wildlife on the perimeter of production units, but are not permitted for interior subdivision (e.g. for rotational grazing); and
c) new or reused fence posts treated with prohibited substances are permitted if the operator provides documentation showing that they are required by law.

6.8 Manure management

6.8.1 Manure management practices used to maintain areas in which livestock is housed, penned or pastured shall be implemented in a manner that minimizes soil and water degradation, and maintains animal health.

6.8.2 Manure storage and handling facilities, including composting facilities, shall be designed, constructed and operated to prevent contamination of ground and surface water. See also 5.5.2.

6.9 Livestock product preparation

Wherever organic livestock product preparation takes place (for example, facilities used for milking), 8.1 and 8.2 apply.

6.10 Pest management in livestock facilities

Clause 8.3 applies to pest management practices in and around livestock facilities.

6.11 Additional requirements for cattle, sheep and goats

6.11.1 Herbivores shall have access to pasture (see definition in Clause 3) during the grazing season. At other times, including the finishing phase, they shall have access to an outdoor exercise area, weather permitting. The operator shall document the reasons and duration of confinement. Exceptions to the pasture requirement can be made for:

a) breeding males; or
b) young animals, when it can be documented that their health and welfare are jeopardized.

NOTE This clause will be reviewed in 2030.

6.11.2 Minimum indoor and outdoor space requirements for cattle are shown in Table 1: Dairy and Table 2: Beef below.

Table 1 — Minimum indoor and outdoor space requirements for dairy cattle

Cattle	Indoor space	Outdoor runs and pens
Free stall	Ratio of cows to stalls shall not exceed 1:1*	No minimum area required
Bedded pack barn	11 m^2 (118 ft^2)/head (of bedded area)	No minimum area required
Individual maternity pens NOTE One maternity pen per 35 cows is recommended.	15 m^2 (161 ft^2)/head (of bedded area)	Not applicable
Group maternity pens	11 m^2 (118 ft^2)/head (of bedded area)	Not applicable
Calves and young cattle	2.5 m^2 (27 ft^2)/head for young calves; increasing to 5 m^2 (54 ft^2)/head for growing steers and heifers (12 months old)	5 m^2 (54 ft^2)/head to 9 m^2 (97 ft^2)/head, depending on the size of animals
Tie stalls (see 6.12.1)	Stall size appropriate for size of cow	6.5 m^2 (70 ft^2)/head in spring and fall when not on pasture

* The indoor space of free-stall cattle shall be reviewed by December 2030.

NOTE Table 1 reflects the space requirements for Holstein cattle; with justification, space requirements may be reduced for small breeds of cattle.

Table 2 — Minimum indoor and outdoor space requirements for beef cattle

Cattle	Indoor space (when provided)	Outdoor runs and pens
Adult beef cows	5.6 m² (60 ft²)/head for 500 kg (1,102 lb) cows increasing to 9 m² (97 ft²)/head for 900 kg (1,984 lb) cows (of bedded area)a	9 m² (97 ft²)/head
Cattle finishing phase	Indoor confinement is prohibited in grazing season Space requirements as per Calves and young cattle below	23 m² (247.5 ft²)/animal for 363 kg (800 lb) finishers and increase to 46.5 m² (500 ft²)/animal for 545 kg (1,200 lb) finishers
Calves and young cattle	2.5 m² (27 ft²)/head for young calves; increasing to 5 m² (54 ft²)/head for growing steers and heifers (12 months old) (of bedded area)	5 m² (54 ft²)/head to 9 m² (97 ft²)/head, depending on the size of animals
Maternity pens NOTE One maternity pen per 20 cows is recommended.	13.4 m² (144 ft²)/head (of bedded area)	
a If construction of new infrastructure is required in order to comply with minimum indoor space requirements for 900 kg+ beef cattle of 9 m2/head, operators are granted an exemption that permits 7.25 m2/head for 900kg+ beef cattle until the end of December 2028.		

6.11.3 Sheep and goat housing

Minimum indoor and outdoor space requirements for sheep and goats are shown in Table 3.

Table 3 — Minimum indoor and outdoor space requirements for sheep and goats

	Indoor space	Outdoor runs and pens
Ewes/does and nursing lamb/kid	2 m² (21.5 ft²)/head plus 0.35 m² (3.8 ft²)/head for each lamb/kid	3 m² (32.3 ft²)/head plus 0.5 m² (5.4 ft²)/head for each lamb/kid
Bottle-fed, weaned, and feeder lambs/kids	0.5 m² (5.4 ft²)/head increasing to 1.5 m² (16 ft²)/head by one year of age	0.75 m² (8.1 ft²)/head increasing to 2.25 m² (24 ft²)/head by one year of age
Rams/bucks over one year of age	3 m² (32.3 ft²)/head	4.5 m² (48.5 ft²)/head

6.11.4 Milking parlors for dairy sheep and goats shall meet the requirements of 6.12.4.

6.12 Additional requirements for dairy cattle housing

6.12.1 Tie stalls in existing dairy barns may be used for lactating dairy cows, and for a period of one month for the training of heifers raised in loose housing. Tie stalls are prohibited in new construction and major renovations. All use of tie stalls will be phased out of organic dairy production by December 2030. If tie stalls are used, dairy cows shall have an exercise period at least twice a week, preferably every day, for a period of at least one hour. An exercise period is defined as time when the cow is untied outside of routine handling procedures, such as milking.

6.12.2 In a free-stall system, the ratio of cows to stalls shall not exceed 1:1.

6.12.3 Electric trainers are prohibited. The tails of cows in stalls may be tied to prevent the tail from lying in the gutter, provided that the tying allows for natural behaviour, free movement of the tail and quick release when necessary.

6.12.4 If milking parlours are in use:

a) operators shall minimize animal waiting time between the time they are moved to the holding area and the time they return to the barn or pasture;

b) portable milking units shall be available for sick or weak animals that are unable to make it to the milking parlour;

c) electric crowd gates are prohibited; and

d) non-slip flooring shall be used in the holding area, parlour and alleys.

6.12.5 Unweaned calves that are healthy, thriving, and compatible in age, size, and drinking speed shall be housed in pairs or groups. Producers currently raising calves individually are granted an exemption to allow them to transition to pair/group housing by December 2027 if changes to infrastructure are required.

Unweaned calves may be housed in individual pens and hutches if they are sick, or if there are too few calves compatible in their age, size, and drinking speed. When housed individually, the following conditions shall be met:

a) calves are not tethered and have enough room to turn around, lie down, stretch out when lying down, get up, rest and groom themselves;

b) individual pens and hutches are designed and located so that each calf has physical contact with other calves unless they are sick;

c) individual housing has an area of at least 2.5 m2 (27 ft2) and a minimum width of 1.5 m (4.9 ft); and

d) outdoor hutches shall have access to an enclosed yard or run.

6.12.6 Calves shall be group-housed after weaning.

6.12.7 Dairy replacement calves over nine months of age shall have access to pasture, as appropriate for the season.

6.12.8 During the grazing season, dairy cows on pasture shall have access to a water source within 200 m.

6.13 Additional requirements for poultry

6.13.1 The operator shall establish and maintain poultry living conditions that accommodate the health and natural behaviour of poultry as follows:

a) The keeping of poultry in row, battery, enriched or colony cages, is prohibited;

b) Poultry shall be reared in open-range conditions and have free access to pasture, open-air runs, and other exercise areas, subject to weather and ground conditions. Outdoor areas shall:

1) have completed the necessary transition period and been granted organic status;

2) be covered with vegetation, seeded if necessary, and periodically left empty to allow vegetation to regrow and to prevent disease build-up. To facilitate rodent control, a vegetation-free perimeter around poultry houses is permitted;

3) have effective overhead cover (for shade and protection from avian predators) distributed throughout the range area of barn-raised birds to encourage continual use by the birds. The cover may be natural (such as trees, shrubs and crops) or artificial (such as shade cloth, camouflage netting, screens or trailers). Roof overhangs over pasture may account for up to 50% of the required overhead cover if they are functional (i.e., they provide shade and protection from avian predators). Overhead cover shall represent at least 10% of the minimum required range area (as outlined in Table 5 of 6.13.13); and

4) show signs of use as appropriate for the season;

c) In an emergency, when outdoor access results in an imminent threat to the health and welfare of poultry, access may be restricted. Outdoor access shall resume when the imminent threat ends. Producers shall document periods of confinement; and

d) Operators shall have an organic plan that describes outdoor access and how they will protect birds from disease and predators.

6.13.2 General requirements for layers

a) Layers may be confined during onset of lay, that is, until peak production is reached. The laying flock shall have outdoor access for at least one-third of its laying life.

b) Rearing facilities that closely match the conditions that exist in the layer barn are recommended. Pullets, however, may be kept indoors until they are fully immunized.

c) Layer flocks shall be limited to 10,000 birds. More than one flock may be in the same building if the flocks are separated and have separate runs.

6.13.3 Enriched verandahs for barn-raised layers

a) Enriched verandahs shall be used when barn-raised layers do not have access to outdoor runs because of weather or disease constraints.

b) An enriched verandah is a covered, uninsulated, unheated extension to a poultry barn. Birds shall have access to the enriched verandah year-round during daylight hours, at least from spring through fall. The enriched verandah shall:

1) have an outdoor climate but offer protection from inclement weather (e.g., wind, rain), rodents, predators and disease threats;

2) represent at least one third of the footprint of the indoor barn area;

3) have natural lighting which may be supplemented with artificial lighting;

4) have a sand floor, a dirt floor or a solid floor covered with bedding, such as straw or wood shavings, for comfort and warmth and to encourage foraging, scratching and dust-bathing behaviours;

5) offer environmental enrichments (see definition in Clause 3: examples include perches, trays of greens, hay bales, pecking objects) to encourage natural behaviours; and

6) not count towards indoor or outdoor space allowance.

c) Enriched verandahs shall be provided in new construction for barn-raised layers. They shall be added to existing infrastructure when the operator cannot demonstrate that at least 25% of layers utilize the outdoor range when there are no weather or disease constraints.

d) All existing enriched verandahs shall be accepted as they are as of December 2020; they are exempt from 6.13.3 b) 2) and 6.13.3 b) 6).

e) If the operator can demonstrate that the addition of an enriched verandah of the size specified in 6.13.3 b) is not possible for an existing barn due to lack of space or because of design limitations of the existing barn:

1) a smaller enriched verandah shall be allowed provided it is as close in size as possible to the requirement of one third of the footprint of the indoor barn area; or

2) the enriched verandah shall be constructed in the uncovered outdoor area and, as an exception, may count as part of the outdoor space allowance; or

3) operators are granted an exemption that permits the use of existing infrastructure until December 2030, provided that a plan for the new construction or renovation is in place by December 2025.

6.13.4 Layers shall have access to the nest space area listed in the requirements of the Code of Practice for the Care and Handling of Pullets and Laying Hens for non-cage systems (see 2.4).

6.13.5 Perches shall meet the following criteria:

a) In the first weeks of life, layer chicks shall have continuous access to perch space.

b) During the pullet rearing phase, adequate perch space shall be appropriate for the final production system and accessible at all times and at varying heights. By six weeks of age, operators shall provide 10 cm of perch space or 100 cm^2 of platform space per pullet.

c) Laying hens shall have a minimum of 15 cm (5.9 in.) perch space per hen, accessible at all times and at varying heights.

d) Perches for laying hens shall be purpose-designed, such as alighting (landing) rails in aviaries, which allow birds to wrap their toes around the rail. Feed and water trough edges, slatted floors and ladder rungs are not considered purpose-designed perching objects, but may be used to provide additional perch space beyond what is required in 6.13.5 a), b) and c).

e) Perches shall be a minimum diameter or width of 1.9 cm (0.75 in.).

f) Other poultry are exempt from 6.13.5 a), b), c), d) and e).

NOTE Producers are advised to review the Code of Practice for the Care and Handling of Pullets and Laying Hens (see 2.4) to ensure they meet additional perch requirements for both pullets and adult layers contained therein.

6.13.6 General requirements for meat chickens and turkeys

a) Meat chickens that will be raised outdoors in shelters without indoor access shall have access to pasture on a daily basis by four weeks of age, unless weather conditions endanger the health or safety of the birds. Turkeys shall have outdoor access by eight weeks of age.

b) Barn-raised meat chickens shall have outdoor access on a daily basis by at least 25 days of age when there are no weather constraints. Operators shall take measures to increase use of the pastures and outside exercise areas and have a goal of a minimum of 15% of birds on range when there are no weather constraints. Operators shall document the use of the range and continue to strive to increase the number of birds on the range in future years. This will be reviewed by December 2030.

NOTE Potential measures for increasing the usage of pasture, outdoor range and outside exercise areas:
- use slower-growing foraging (hardy) breeds (characterized by a growth rate of no more than 45 g/day);
- use a ration that has been nutritionally adjusted for slower growth (i.e., lower in protein);
- implement an older slaughter age (e.g., 60 days) provided the health of the birds can be maintained;
- allow outdoor access before the minimum age specified;
- provide mobile units for summer production;
- provide effective overhead cover on pasture;
- provide environmental enrichment on the pasture (e.g., feed, water, perches, etc.);
- improve pasture access (e.g., pophole changes, etc.); and
- provide enriched verandahs [see descriptions in 6.13.3 b)].

6.13.7 Poultry barns shall have sufficient exits (popholes) to ensure that all birds have ready access to the outdoors.

6.13.8 Exits shall:

a) allow passage of more than one bird at a time, and be evenly distributed along the line of access to the outdoor range;

b) shall correspond to the requirements shown in Table 4 for the number and size of exits.

Table 4 – Poultry barns minimum exit numbers and size

Poultry	Combined width of popholes	Minimum width of each pophole	Minimum height	Minimum number
Layers	2 m (6.6 ft)/1000 hens	50 cm (20 in.)	35 cm (14 in.)	2
Broilers	1 m (3.3 ft)/1000 birds OR all birds within 15 m (49 ft) of an exit	50 cm (20 in.)	35 cm (14 in.)	2
Turkeys	2 m (6.6 ft)/1000 birds	150 cm (59 in.)	75 cm (30 in.)	2

6.13.9 When existing organic poultry barns do not meet the requirements of 6.13.8 b) (Table 4), either the distance from an exit from anywhere in the barn shall be no more than 15 m (49 ft), or the operator shall provide evidence that birds utilize outdoor range. Evidence shall demonstrate that 25-50% of birds are on range when there are no age or weather constraints.

6.13.10 Bedding material shall be provided as litter material and kept dry. Houses with slatted floors shall have a minimum of 30% solid, bedded floor area to encourage dust bathing, scratching and foraging behaviours.

6.13.11 Poultry shall have access to at least the number of waterers and feeders required by the relevant Code of Practice (see 2.4).

6.13.12 Poultry housed indoors shall be provided with natural light either with evenly distributed windows or light-permeable fabric. The total window area shall be no less than 1% of the total ground-floor area, unless it can be demonstrated that natural light levels are sufficient to read a document, such as a newspaper, anywhere in the barn. If daylength is artificially prolonged, the total duration of light shall not exceed 16 hours, and shall be terminated by gradual reduction of light intensity followed by 8 hours of continuous darkness. The following exceptions are permitted and shall be documented:

a) periods of increased lighting are permitted due to the stage of production, for example, the arrival of chicks and turkey poults; and

b) decreased lighting intensity is permitted due to animal welfare concerns, for example, outbreaks of cannibalism.

6.13.13 The maximum indoor and outdoor densities are shown in Table 5.

Table 5 — Maximum indoor and outdoor densities for poultry[a]

Poultry	Indoors	Outdoor runs
Layers (19 weeks and older)[b]	6 birds/m^2 (10.76 ft^2)	4 birds/m^2 (10.76 ft^2)
Chicks and pullets 0-4 weeks [c d]	35 birds/m^2 (10.76 ft2)	16 birds/m^2 (10.76 ft2)
Pullets 5-8 weeks [c d]	24 birds/m^2 (10.76 ft^2)	16 birds/m^2 (10.76 ft^2)
Pullets 9-18 weeks [c]	15 birds/m^2 (10.76 ft^2)	10 birds/m^2 (10.76 ft^2)
Broilers	21 kg/m^2 (4.3 lb/ft^2)	21 kg/m^2 (4.3 lb/ft^2)
Turkeys/large birds	26 kg/m^2 (5.3 lb/ft^2)	17 kg/m^2 (3.5 lb/ft^2)
Ducks	21 kg/m^2 (4.3 lb/ft2)	1 kg/m^2 (0.2 lb/ft2)

a Under exceptional circumstances, the maximum stocking density may be exceeded for individual flocks. These circumstances shall be documented and if they recur, actions shall be taken to prevent future flocks from surpassing maximum stocking density.

b Nest space must not be included when calculating usable space allowance.

c Outdoor runs are not required when flocks are undergoing an immunization program.

d The maximum density for pullets aged 0 to 4 and 5 to 8 weeks shall meet the COS requirement or the requirement of the Code of Practice for the Care and Handling of Pullets and Laying Hens, whichever is the lower density.

6.13.14 Multi-level aviary systems for layers shall have no more than three levels or tiers above ground level. Total floor space, for calculation of solid-floor area and bird density requirements, shall include all usable floor levels (see 6.13.10 and 6.13.13). If enriched verandahs are used to provide required scratching areas, they shall be accessible year-round.

6.13.15 For pasture-based operations with mobile units, stocking density shall be no more than 2000 layers/ha (800 layers/ac.), 2500 broilers/ha (1000 broilers/ac.) or 1300 large birds (turkeys/geese)/ha (540 large birds/ac.), based on the total amount of land used for rotational poultry pasture. When birds are in moveable field shelters,

the shelters shall be moved daily, whenever possible, and at least once every four days, taking into consideration the impact on the birds and on the land. Density within the moveable shelters shall correspond to the indoor density described in 6.13.13.

6.13.16 When an operation raises poultry on pasture during the grazing season (subject to 6.13.6 a) and 6.13.15) and in a barn during the non-grazing season, the barn shall meet the housing requirements of 6.13. See definition of grazing season in Clause 3.

6.13.17 Buildings shall be emptied, cleaned and disinfected, between flocks, and runs shall be left empty to allow the vegetation to grow back.

6.13.18 Ducks and geese shall have access to a water area created for their use, whenever weather conditions permit. Facility design shall address the need to prevent commingling of wild waterfowl and domestic poultry.

6.14 Additional requirements for rabbits

6.14.1 If required for comfort and security, rabbits may be temporarily confined, for example, overnight, in cages or hutches. Continuous confinement is prohibited.

6.14.2 The use of mobile pasture pens is permitted, provided that pens do not restrict natural behaviour and they are moved at least once every three days.

6.14.3 Rabbits shall have space to run, hop and dig, and to sit upright on their back legs with ears erect. The minimum indoor and outdoor space requirements are shown in Table 6.

Table 6 — Minimum indoor and outdoor space requirements for rabbits

Rabbits	Indoor space	Outdoor – runs and concrete exercise areas	Outdoor – pasture	Mobile pens
From weaning to slaughter	0.3 m^2 (3.23 ft^2)/ head	2 m^2 (22 ft^2)/head	5 m^2 (54 ft^2)/head	0.4 m^2 (4.3 ft^2)/ head
Pregnant does	0.5 m^2 (5.4 ft^2)/ head	2 m^2 (22 ft^2)/head	5 m^2 (54 ft^2)/head	0.5 m^2 (5.4 ft^2)/ head
Does and litters	0.7 m^2 (7.5 ft^2)	2 m^2 (22 ft^2)	Not applicable	0.4 m^2 (4.3 ft^2)/ head in shelter 2.4 m^2 (26 ft^2) for grazing area
Bucks	0.3 m^2 (3.23 ft^2)/ head	2 m^2 (22 ft^2)/head	5 m^2 (54 ft^2)/head	0.4 m^2 (4.3 ft^2)/ head

6.14.4 Rabbits shall not be subjected to continuous lighting or kept in permanent darkness. During the day, rabbits shall be able to clearly see each other and their surroundings.

6.14.5 Does about to give birth shall be given secluded individual burrows or nest boxes for kindling (birthing).

6.14.6 The doe and litter shall have free access to outdoor range and foraging areas once the kits reach 21 days of age.

6.14.7 Weaning before the kits are 30 days of age is prohibited. However, if the welfare of the doe or kits is compromised, earlier weaning is permitted.

6.15 Additional requirements for pigs and farm-raised wild boar

6.15.1 The number of animals on a production unit shall reflect the size of the available land-base, which comprises land owned, leased and available for spreading their manure, and based on a balance between animal units, feed production and manure management. Farrow to finish operators shall not exceed 2.5 sows/ha (1 sow/ac.).

6.15.2 Pigs shall have daily access to outdoor areas with the exception of sows with nursing piglets. Outdoor access can be temporarily restricted as stated in 6.7.2.

a) Outdoor areas may include woodlands, other natural environments, soil or concrete exercise areas. Access to pasture is recommended but not mandatory. If pasture areas are degraded and cannot be used by the pigs, other outdoor exercise areas shall be provided in order to meet the requirements for outdoor access and rooting.

b) An outdoor exercise area may be covered as long as at least three sides of the structure are open.

c) When outdoors in open areas (e.g., pasture), pigs shall have access to shaded/sheltered areas suitable for the whole herd so they may take cover during inclement weather.

d) Pigs shall not be confined exclusively to concrete yards without access to an indoor or outdoor bedded area.

e) Guidelines around management of outdoor areas (6.7.1), preventing occurrence and spread of parasites (6.6.1 c), 6.6.11) and permitting rooting for pigs (6.15.7) shall apply.

NOTE Pasture management practices implemented to avoid degradation and prevent parasite build-up may include:

- rotation of pastures with annual crops;
- having a paddock rotation plan depending on the season;
- leaving a paddock empty for 5 years before repopulating with growing pigs;
- keeping sows in a paddock for a maximum of 2 years before providing the paddock with a rest period.

6.15.3 Sows and gilts shall be kept in groups, with the following exceptions:

a) individual pens are permitted for the protection of females during estrus, or for other health reasons, for a period of up to five days; and

b) sows may be individually housed in a pen for up to five days prior to farrowing and during the suckling period.

6.15.4 Confinement of sows in gestation crates or farrowing crates, or in another manner that prevents them from turning around is prohibited, except for periods of temporary restraint. Sows may be restrained for a maximum period of four consecutive hours to protect the piglets or to protect the operator during piglet processing or pen cleaning. Sows shall be directly supervised while restrained and released as soon as possible.

6.15.5 When sows are expected to farrow, or moved to the farrowing area, they shall be provided with a quantity of straw or other suitable natural material sufficient to enable them to build nests.

6.15.6 Piglets shall not be weaned before four weeks of age. However, if the welfare of the sow and/or piglets is compromised, piglets may be weaned earlier by exception. Operator shall document and provide justification for early weaning. The weaning age will be reviewed by December 2030.

6.15.7 Piglets shall not be kept on flat decks or in cages.

6.15.8 Boars may be housed in individual enclosures provided there is visual and tactile contact with other pigs.

6.15.9 Indoor and outdoor exercise areas shall permit rooting.

6.15.10 The use of nose rings is prohibited.

6.15.11 The minimum indoor, outdoor and total space requirements shown in Table 7 apply only to pigs when they are housed in barns. Within the total area, the minimum indoor and outdoor space shall be respected.

Table 7— Minimum indoor and outdoor space requirements for pigs and boars[a]

	Indoor space	Outdoor runs and pens	Total area
Sow and piglets (until weaning) [b]	7.5 m^2 (81 ft^2) for each sow and litter	Not required	7.5 m^2 (81 ft^2)
Growing pigs			
a) up to 30 kg (66 lb)	0.6 m^2 (6.5 ft^2)/head	0.4 m^2 (4.3 ft^2)/head	1.0 m^2 (10.8 ft^2)/head
b) 30–50 kg (66–110 lb)	0.8 m^2 (8.6 ft^2)/head	0.6 m^2 (6.5 ft^2)/head	1.4 m^2 (15.1 ft^2)/head
c) 50–85 kg (110–187 lb)	1.1 m^2 (12 ft^2)/head	0.8 m^2 (8.6 ft^2)/head	1.9 m^2 (20.6 ft^2)/head
d) >85 kg (187 lb)	1.3 m^2 (14 ft^2)/head	1.0 m^2 (10.76 ft^2)/head	2.3 m^2 (24.8 ft^2)/head
Sows in group pens	3 m^2 (32.3 ft^2)/head	3 m^2 (32.3 ft^2)/head	6 m^2 (64.6 ft^2)/head
Sows in individual pens [c]	3 m^2 (32.3 ft^2)/head	Not required	3 m^2 (32.3 ft^2)/head
Wild boars in individual pens	9 m^2 (97 ft^2)/head	9 m^2 (97 ft^2)/head	18 m^2 (194 ft^2)/head

a Under exceptional circumstances, the maximum stocking density may be exceeded for individual groups. These circumstances shall be documented and if they recur, actions shall be taken to prevent future groups from surpassing maximum stocking density.

b The protected area for the piglets (nest or creep area) shall be no larger than 20% of the space provided for the sow and litter.

c See 6.15.3 a for the circumstances in which keeping sows in individual pens is permitted.

7 Specific production requirements

7.1 Apiculture

7.1.1 Bees may be introduced to an operation and managed for production benefits, such as pollination of organic crops. If managed as a livestock species for the production of organic products (for example, honey, pollen, propolis, royal jelly, beeswax and bee venom), bees shall be managed in accordance with this standard.

7.1.2 The operator shall prepare a detailed organic plan (see 4.1, 4.2 and 4.3) that describes the source of bees; production methods; bee diet; control of pests, including diseases, mites and insects; breeding; and other related issues of colony management. Where applicable, the organic plan shall also describe crop management practices.

7.1.3 Records that document all apiary management activities, including removal of supers and extraction of honey (see 4.4), shall be maintained.

7.1.4 The treatment and management of bee colonies shall be informed by the principles of organic production (see Introduction, clause 0.2).

7.1.5 Organic plants and undomesticated, non-agricultural vegetation shall be the primary source of nectar, honeydew and pollen. Crops treated with prohibited substances and genetically engineered crops shall be avoided.

7.1.6 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.

7.1.7 When bees are placed in wild areas, impact on the indigenous insect population shall be considered.

7.1.8 Transition

7.1.8.1 Colonies and hives (including brood and honey super frames) shall be under continuous organic management for at least 12 months before products may be considered organic.

7.1.8.2 Colonies and hives shall not be rotated between organic and non-organic management systems. Bees treated with antibiotics are subject to the requirements of 7.1.15.7.

7.1.9 Introduced bees

If commercially available, introduced bees, that is, replacement bees for established colonies, shall be organic. Replacement colonies shall be produced within the operation or come from another established organic apiary.

7.1.10 Location of hives

Where sources or zones of prohibited substances are present, that is, genetically engineered (GE) crops or environmental contamination, apiaries shall be protected with a buffer zone of 3 km (1.875 mi.). The following exceptions apply:

a) fertilizers (including those that are not listed in Table 4.2 Column 2 of CAN/CGSB-32.311) are permitted in the buffer zone, with the exception of sewage sludge;

b) buffer zones may be reduced if natural features that would restrict the likelihood of bee travel (such as forests, hills or waterways) and abundant compliant forage are present; and

c) during periods of reduced bee mobility and when forage is not generally available, the buffer zone around temporary preparation apiaries and wintering yards may be reduced to 100 metres.

7.1.11 Forage and feeding

7.1.11.1 The primary food source for adult colonies shall be nectar and pollen collected from sources conforming to this standard and food sources stored by the bees in the hive (honey, pollen, etc.).

a) In the event of a regional or seasonal shortage of forage and for winter feeding of colonies, the following is allowed in order of preference:
   1) organic honey from within the operation;
   2) organic sugar (e.g., inverted, syrup, fondant); or
   3) non-organic transitional honey from within the operation.
b) The use of non-organic, non-GE refined sugar (in compliance with subclauses 1.4 and 1.5) is permitted under the condition that the operator:
   1) maintain and document appropriate practices to prevent the mixing of organic and non-organic feeds in honey supers;
   2) develop and provide a plan to replace the use of non-organic refined sugar from the operation; and
   3) feed a minimum of 5% of hives with organic sugar or organic honey by September 1, 2028. Operators shall note in their organic plan the potential impact of the use of organic sugar or honey, particularly on bee health and honey production.
c) Feeding shall only occur between the last honey harvest and 15 days before the start of the next nectar or honeydew flow-period.

7.1.11.2 Sugar (organic or non-organic) shall not be supplied within 30 days of the harvest of honey. Organic honey from the farm is permitted at all times.

NOTE: Clauses 7.1.11.1 and 7.1.11.2 will be reviewed in 2030.

7.1.12 Colony management

7.1.12.1 Hives shall be clearly and individually identified, and shall be monitored regularly, that is, at one- to two-week intervals, depending upon the colony, weather conditions and time of year.

7.1.12.2 Wing clipping of queen bees is prohibited.

7.1.12.3 Bees shall be removed from hives with bee escape boards, shaking, brushing and forced-air blowers.

7.1.12.4 Plant-based materials that have not been treated with prohibited substances (see 1.5) may be used in bee smokers.

7.1.12.5 Annual destruction of bee colonies, following nectar flows, is prohibited.

7.1.13 Hive construction

7.1.13.1 Hives shall be constructed of and maintained with natural materials, such as wood and metal. Pressure-treated lumber or particleboard, wood preservatives or lumber treated with prohibited substances are not permitted.

7.1.13.2 Exterior surfaces of the hive may be painted with non-lead-based paints.

7.1.13.3 If dipped in organic beeswax, plastic comb foundation is permitted.

7.1.14 Health care

7.1.14.1 Preventative health care practices shall be established and maintained, including the selection of bee stocks resistant to prevalent pests including mites and diseases; the selection of hive locations considering site-specific conditions; the availability of sufficient pollen and honey; the renewal of beeswax; the regular cleaning and disinfection of equipment; and the destruction of contaminated hives and materials when appropriate for pest management.

7.1.14.2 The operator shall promote strong, healthy colonies. Management practices may include: merging weaker, albeit healthy, colonies; renewing queens, if necessary; maintaining adequate hive density; inspecting colonies systematically; and relocating diseased colonies to isolated areas.

7.1.15 Managing pests including insects and diseases

7.1.15.1 The operator shall be a knowledgeable beekeeper who is familiar with the life cycle and behaviour of bees and related disease-causing organisms, parasitic mites and other pests. In the presence of such pests, every effort shall be made to restore the health of a colony.

7.1.15.2 Every effort shall be made to select and breed queen bees for resistance to diseases and parasites.

7.1.15.3 Comb foundation shall be obtained from beeswax within the operation or from other organic sources.

7.1.15.4 Pests (including diseases) shall be controlled with management methods or modified equipment.

7.1.15.5 Botanical compounds may be introduced into the hive provided that such remedies are listed in Table 5.3 of CAN/CGSB-32.311, and are not used within 30 days of nectar flow or when honey supers are on the hive.

7.1.15.6 Therapeutic applications of substances to control pests (including parasites and diseases) listed in Table 5.3 of CAN/CGSB-32.311 are permitted. These applications must be discontinued 14 days before harvesting the hive products.

7.1.15.7 Allopathic drugs (for example, antibiotics) are prohibited. However, where the imminent health of the colony is threatened, oxytetracycline is permitted (See *Antibiotics, oxytetracycline* in Table 5.3 of CAN/CGSB-32.311). Before treatment, hives and colonies shall be removed from the foraging area and taken out of organic production to prevent the spread of antibiotics within the apiary. Treated hives (containers present during treatment) along with the bees present during treatment (excluding queens) shall be placed in isolation and undergo a 12-month transition period. Wax present in the hives during treatment shall not be marketed as organic.

7.1.15.8 Destroying the male brood is only permitted to contain infestation with varroa mites.

7.1.16 Extraction, processing and storage

7.1.16.1 Extraction of honey from a comb with live brood is prohibited.

7.1.16.2 The quality and organic integrity of honey and other products of apiculture (see 7.1.1) shall be preserved and protected as specified in 8.1.

7.1.16.3 Surfaces in direct contact with honey shall be constructed of food-grade materials or coated with beeswax.

7.1.16.4 Heating of honey for extraction shall not exceed 35 °C (95 °F) and the decrystallization temperature shall not exceed 47 °C (116.6 °F). If organic honey is heated above those temperatures, then it can only be used as an ingredient in a multi-ingredient product.

7.1.16.5 Gravitational settling shall be used to remove debris from extracted honey. Sieves are permitted for removal of residual debris.

7.1.16.6 Honey shall be packaged in airtight containers.

7.1.16.7 Facility cleaning, sanitation and pest management are subject to the requirements in 8.2 and 8.3.

7.2 Maple products

7.2.1 The standards for maple production also apply to syrup production in other tree types, such as birch.

7.2.2 Organic maple products shall be from production units managed in accordance with this standard.

7.2.3 This standard applies to all stages of production and preparation — the maintenance and development of the sugar bush, collecting and storing sap, converting sap to syrup, making products out of syrup, washing and sterilizing equipment, and storing finished products.

7.2.4 The production of maple syrup shall be characterized by good management practices of the sugar bush and its ecosystem. Development and maintenance shall focus, over the long term, on the preservation of the sugar bush ecosystem and improvement of tree vigour.

7.2.5 Tapping practices shall minimize risk to the health and longevity of the trees.

7.2.6 Equipment and techniques used to collect and store sap shall lead to a prepared product of the highest possible quality. Equipment shall be in good condition, shall be composed of materials suitable for use in the manufacture of food products, and shall be used according to the manufacturer's instructions.

7.2.7 During conversion of sap to syrup, the sap can take on the odour of anything it comes into contact with. Therefore, care shall be taken to avoid denaturing the product during preparation. The use of technology, such as magnetization, that is likely to alter the intrinsic qualities of the product is prohibited.

7.2.8 Transition

This standard shall be fully applied on a production unit for at least 12 months before the harvest of sap may be considered organic. Prohibited substances shall not have been used for at least 36 months preceding the first harvest. Parallel production is prohibited.

NOTE Part 13 Organic Products of the *Safe Food for Canadians Regulations* requires that the application for the organic certification of maple products be filed at least 15 months before the day on which the food is expected to be sold.

During that period of time, compliance with this standard will be assessed by the certification body and this assessment must include at least one inspection of the production unit, during production, in the year before maple products may be eligible for certification and one inspection, during production, in the year maple products are eligible for certification.

7.2.9 Sugar bush development and maintenance

7.2.9.1 Plant diversity

Operators shall encourage a diversity of plant species in the sugar bush, particularly companion species to tapped maple trees. Companion species shall be encouraged by aiming for a minimum percentage of 20% of all trees in the sugar bush. Undergrowth and brush must be protected. Partial cutting of this vegetation is authorized for the creation of paths to facilitate movement. Gap cutting is permitted if the overabundance of native understory vegetation prevents the establishment of maple regeneration.

7.2.9.2 Thinning

When it is necessary or when required by the forest administrator, thinning of the sugar bush shall be performed according to current good management practices, both public and private, and shall be evenly distributed throughout the sugar bush.

7.2.9.3 Tree protection

If livestock (for example, beef or dairy cattle, pigs or domestic deer) could harm sugar trees, livestock access to the bush shall be prohibited in order to preserve plant diversity and the growth of young trees. Pipeline networks shall be installed in a manner that shall not injure nor harm the growth of trees.

7.2.9.4 Fertilization

Fertility recommendations and applications shall be based on observed, diagnosed and documented deficiencies. Soil amendments permitted for maple production include wood ash, agricultural lime and fertilizers listed in Table 4.2 (Column 1) of CAN/CGSB-32.311.

7.2.9.5 Pest control

Knowledge and understanding of pests (in the sugar bush and preparation facility), their habits, and solutions that maintain the bush ecosystem are the preferred basis for pest control. Within the sugar bush, substances listed in Table 4.2 (Column 2) of CAN/CGSB-32.311 are permitted for control of pests including diseases and insects. Within preparation facilities, mechanical and sticky traps are permitted for rodents and other destructive pests, as are natural repellents listed in Table 8.1 of CAN/CGSB-32.311. If an infestation occurs, vertebrate pests may be h unted. It is prohibited to use poisons of any kind to control vertebrate pests.

7.2.10 Tapping

7.2.10.1 Tree diameter and number of taps

Table 8 indicates the maximum number of taps a healthy maple can support, based on its chest height diameter (CHD); CHD is the diameter measured at a height of 1.3 m (4.3 ft) above the soil surface. A tree shall not have more than two tap holes.

Table 8 — Maximum number of taps per healthy maple tree

Diameter measured at a height of 1.3 m (4.3 ft) above the soil surface	Maximum number of taps
Less than 19.9 cm (8 in.)	0
20 to 23 cm (8 to 9 in) (applies to operations certified before December 2025)	1
23.1 to 39 cm (9 to 16 in) (applies to new operations certified after December 1, 2025 and to expansions installed after December 1, 2025, and mandatory for all operations after 2035)	1
39.1 cm and greater (16 in and more) (applies to all operations from December 2025)	2

7.2.10.2 Depth and diameter of tap holes

Depth of tap holes shall be no more than 5 cm (1.9 in.) from the surface of the bark for trees with a diameter smaller than 25 cm (9.8 in), or 6 cm (2.4 in.) from the surface of the bark for trees with a diameter equal or higher than 25 cm (9.8 in). Diameters shall not be greater than 7.93 mm (5/16 in). If a tree is diseased, infested with other pests, decaying, or if tap holes are not healing properly, stricter standards shall be implemented, such as:

a) the number of taps per tree shall be reduced to 2 where 7.2.10.1 allows 3, and 1 where 2 are allowed; and

b) when the chest height diameter is less than 25 cm (~9 7/8 in.), tapping is prohibited.

If the trees are compromised by injury, insects, diseases or decay, Table 8 of 7.2.10.1 may be used in accordance with the standard, however, spouts with a smaller diameter shall be used or operators shall abstain from tapping.

7.2.10.3 Disinfection of tap holes and tapping equipment

Food-grade ethyl alcohol may be sprinkled onto spouts and drill bits during tapping, but sprinkling in tap holes is prohibited. It is prohibited to use any other germicide, such as denatured alcohol (a mixture of ethanol and ethyl acetate) or isopropyl alcohol, in tap holes and on tapping equipment.

7.2.10.4 Renewing the tap and removal of spouts

Maple trees shall only be tapped once a year. The practice of retapping a previously tapped tree during the same season or double tapping is prohibited. To allow trees to heal, spouts shall be removed no later than 60 days after the final, seasonal sap flow. Maple trees shall only be tapped during the sugar bush operation period (maple syrup season). Fall syrup production is prohibited.

7.2.11 Collection and storage of maple syrup

7.2.11.1 Spouts

Spouts shall be made of food-grade materials.

7.2.11.2 Vacuum collection system

All parts of the collection system that may come in contact with sap shall be made of materials suitable for use in the manufacture of food products. Pumps shall be well-maintained and used oil shall be collected and disposed of so as to not contaminate the environment.

NOTE It is recommended to recycle all materials of the components of the collection system.

7.2.11.3 Storage

All equipment that may come into contact with sap or its concentrate and filtrates, such as storage tanks, connections and transfer systems, shall be made of materials suitable for use in the manufacture of food products. This also applies to any surface coatings, such as paints and soldered joints. The use of air injection systems with a forced air blower in sap before, during or after its conversion to syrup is prohibited.

7.2.11.4 Collecting with buckets

Pails or buckets may be made of aluminum or plastic. Galvanized steel is prohibited. Buckets shall be covered with a lid. The standards that apply to storage tanks also apply to reservoirs used to transport collected sap.

7.2.12 Conversion of sap to syrup

7.2.12.1 Sap filtration

Sap shall be filtered before processing. The filtration shall not compromise the sap's inherent qualities.

7.2.12.2 Sap sterilization

Sterilization of sap with ultraviolet radiation or by adding a sterilizer prior to conversion is prohibited.

7.2.12.3 Osmosis extraction and membranes

The membrane concentration technique is acceptable for treating maple water. Only reverse osmosis and nanofiltration (ultraosmosis) membranes are allowed. In the off-season, osmosis membranes can be stored with filtrate or potable water in the equipment or in a hermetically sealed container. Sodium metabisulfite (SMBS), potassium metabisulfite (PMBS) or citric acid may be added to the filtrate or potable water to prevent microbial growth.

If sodium metabisulfite (SMBS or potassium metabisulfite (PMBS is used, the membrane must be rinsed before the next use with a volume of water equal to the hourly capacity of the membrane (for example, 2,271 L [600 US gal/h] of water for a 2,271 L/h [600 US gal/h] membrane). When citric acid is used, the membrane must be rinsed before the next use with a volume representing at least 40 times the residual dead volume of the equipment. Off-site storage of the membrane (for example, by the membrane supplier) shall be documented. Food-grade lubricants are allowed as a lubricant for equipment used in maple production.

7.2.12.4 Evaporator

Evaporator pans shall be made of stainless steel. They shall be tungsten-inert gas (TIG) welded or soldered with tin-silver solder. Pans made of galvanized steel, copper, aluminum or tin-plated steel are prohibited. Air and environmental quality shall be controlled in the evaporator room. Air injection systems with a forced air blower are prohibited in evaporator pans.

7.2.12.5 Defoamers

Only plant-based organic defoaming products (e.g., organic vegetable oils with no allergenic potential) are permitted.

Pennsylvania maple wood from the organic operation (Acer pennsylvanicum, also known as striped maple) can also be used.

7.2.12.6 Syrup filtration and other treatments

Organic maple syrup shall not be refined by artificial means, bleached or lightened in colour. Any manipulation on maple syrup carried out in order to mask defects in flavour, mainly that of the bud, is prohibited. Simple filtration via the following methods is permitted: through cloth or paper, a filter press or calcined diatomaceous earth; or use of silica powder or clay dust with a filter press to remove suspended solids. The use of air injection systems with a forced air blower in maple syrup is prohibited.

7.2.13 Cleaning of equipment for use in syrup production

7.2.13.1 Maple sap collection systems, tubing and tanks

Cleaning shall take place before or after each production season. Permitted sanitation substances include:

Table 9 – Permitted sanitation substances for maple

In-season	For all equipment except tubing	Product based on acetic acid, hydrogen peroxide or peracetic acid Cleaning shall be followed by rinsing with drinking water, filtrate or sap before restarting the operations.
Off-season	For all equipment Including tubing	• Sodium hypochlorite • Fermented sap • Product based on acetic acid, hydrogen peroxide or peracetic acid Cleaning shall be followed by rinsing with drinking water, filtrate or sap before the next season.
	For tubing only	• Isopropyl alcohol • Fermented sap • Product based on acetic acid, hydrogen peroxide or peracetic acid Cleaning shall be followed by rinsing with drinking water, filtrate or sap before the next season.
Other substances, including substances based on phosphoric acid, are prohibited.		

7.2.13.2 Osmosis extraction and membranes

Reverse osmosis units and membranes shall first be cleaned using filtrate, according to the time and temperature recommended by the manufacturer.

a) Cleaning during the production season:

1) If after rinsing with warm filtrate (in an open or closed circuit), a Pure Water Permeability (PWP) test indicates that controlled efficiency is less than 85% of the controlled efficiency recorded at the beginning of the season, a caustic soda-based soap (NaOH) recommended by the manufacturer for membrane cleaning is permitted.

2) Following the use of NaOH-based soap, the following substances are permitted for cleaning: citric acid, acetic acid, peracetic acid and hydrogen peroxide if PWP test results stay below 75% of the efficiency recorded at the beginning of the season.

3) Cleaning or a cleaning sequence with substances permitted in 7.2.13.2 a) 1) and 2) shall be followed by a rinse with clean filtrate or potable water. The rinse volume shall be greater than or equal to 40 times the dead (residual) volume of the unit (total volume of the unit and its components after it is drained).

4) Daily efficiency readings and calculations shall be recorded. Membrane flush water shall be disposed of in a manner that does not harm the environment.

b) For cleaning after the production season, off-season treatment of membranes with citric acid, acetic acid, peracetic acid and hydrogen peroxide is permitted.

7.2.13.3 Evaporators

At any time, evaporators may be cleaned with potable water or filtrate adding, if necessary, caustic soda, citric acid, acetic acid or products based on acetic acid, hydrogen peroxide or peracetic acid.

Double rinsing is mandatory and the second rinsing shall be done with hot water or hot filtrate.

Cleaning with fermented sap followed by a double rinse can also be used at the end of the season. The second rinse should be strictly with hot water or filtrate.

7.2.13.4 Reusable bulk storage containers

Bulk maple syrup storage containers may be rinsed at any time with potable water or filtrate.

If washing, sanitizing or deodorizing is required, baking soda; sodium hypochlorite; or a mixture of acetic acid, hydrogen peroxide and peracetic acid may be used.

A double rinse is mandatory after using a sanitizing or deodorizing product.

7.2.13.5 Prohibited substances

Substances other than those specified in 7.2.13.1, 7.2.13.2 and 7.2.13.3 are prohibited, including those with phosphoric acid content.

7.2.14 Food additives and processing aids

Transformation of syrup into maple products (for example, maple butter, sugar and taffy) shall comply with this standard. Boiling with microwaves is prohibited. No other substances shall be added to syrup or maple products during production or preparation, 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.

7.2.15 Transport, storage and conservation

Maple syrup not intended for immediate consumption shall be stored in food-grade containers that do not alter the chemical composition or quality of the syrup. Permitted containers include barrels made of stainless steel, fibreglass, food-grade plastic or metal with an interior food-grade coating. Reusing single-use barrels is prohibited. Barrels shall carry a unique identification number that is used in all related records. The barrel fill-date shall be recorded.

7.2.16 Preparation of maple sap

7.2.16.1. General

Operations preparing maple sap must comply with the requirements of clauses 8.1.4, 8.1.5 and 8.1.6 of the present standard in order to maintain the biological integrity of maple products. Organic and non-organic maple products prepared in the same production unit must not be mixed at any stage of the production cycle.

7.2.16.2. Preparation specifications

The preparation of maple water into syrup, including the filtration, osmosis and evaporation stages, must comply with the requirements of clauses 7.2.12, 7.2.13, 7.2.14 and 7.2.15 of the present standard.

7.3 Mushroom production and mushroom products

All relevant subclauses in this standard apply to mushroom production and mushroom products where this subclause has no specific requirements, including 5.1.3, 5.1.4, 5.1.5, 5.1.6, 5.1.7 and 5.1.8. For outdoor production, 5.2.2 also applies.

7.3.1 Production sites and structures

For organic mushrooms or mushroom products, the operator shall manage production units in a manner that ensures substrates and mushrooms do not come into contact with prohibited substances. Substrates shall be produced in accordance with this standard and applicable entries in Table 4.2 (Column 1) of CAN/CGSB-32.311 such as Composting feedstocks and Compost produced on the production unit:

a) For indoor facilities, organic mushrooms shall not come into contact with prohibited substances that would compromise the integrity of the crop.

b) For mushrooms grown in soil, prohibited substances shall not have been used for at least 36 months before the harvest of an organic crop.

c) For new installations or replacement purposes, lumber treated with prohibited substances shall not be used in structures, containers or other surfaces that come into contact with the growth substrate or mushrooms.

7.3.2 Substrates and growth media

7.3.2.1 Wood substrates

Logs, sawdust or other wood-based materials used as substrates shall come from wood, trees or logs that have not been treated with prohibited substances.

7.3.2.2 Manure

Subclause 5.5.1 applies to manure (including any non-organic agricultural substances in the manure) used in growth substrates. Manure shall be composted according to the requirements for Compost, Compost from off-farm sources or Compost produced on the farm in Table 4.2 of CAN/CGSB-32.311.

7.3.2.3 Agricultural substances

Agricultural substances, such as straw, grain or feather meal, shall be from organic sources. If organic sources are not commercially available, non-organic sources may be used, provided that they are composted according to the requirements for Compost, Compost from off-farm sources or Compost produced on the farm in Table 4.2 of CAN/CGSB-32.311.

7.3.3 Spawn

Organic spawn (seed) shall be used (see definitions in 3). Spawn grown or treated with substances listed in Table 4.2 (Column 2) of CAN/CGSB-32.311 may be used if organic spawn is neither:

a) available from within the production unit; nor

b) commercially available.

To be considered organic spawn, spawn shall be propagated from organic mycelium and produced on organic agricultural substrates, wood substrates or manure (as defined in 7.3.2 of this standard).

7.3.4 Crop pest control and sanitation

Preventative pest control measures shall include the following:

a) removal of infected materials. Infected mushroom strains shall be burned, moved at least 50 m (164 ft) from a production site (if, for example, the diseased logs are kept for research), or disposed of as recommended by good management practices;

b) sanitation with substances listed in Table 4.2 (Column 2) of CAN/CGSB-32.311;

c) using cultivation sites that are free of debris from understory, diseased trees and trees infected by other pests; and

d) cleaning and maintenance of equipment with sanitizers and disinfectants listed in Table 4.2 (Column 2) of CAN/CGSB-32.311.

7.3.5 Mushroom product preparation

Wherever organic product preparation takes place, Subclause 8.1 and 8.2 apply.

7.3.6 Facility pest management

Subclause 8.3 applies to pest management practices in and around mushroom facilities.

7.4 Sprouts, shoots and microgreens production

7.4.1 Subclause 7.4 applies to crops that are harvested within 30 days of imbibition, either to be consumed with roots attached (e.g., sprouts and nanoshoots) or to be cut from the roots for consumption (e.g., shoots, living greens and microgreens).

7.4.2 Subclause 7.4 does not apply to whole head products (e.g., heads of lettuce, mini cabbage).

7.4.3 Sprouts, shoots, and microgreens may be produced in water or in a growing media whether they are grown in a growth chamber or vessel, greenhouse or other structures used to grow crops.

7.4.4 Organic seed shall be used.

NOTE A water monitoring program should be in place to ensure water is potable.

7.4.5 Artificial lighting is permitted to supplement or replace natural light.

7.4.6 Inert containers made of stainless steel and food-grade plastic are permitted in both water and growing media production systems.

7.4.7 Containers made of untreated plant-based materials (for example: burlap, coconut coir, fibre) are prohibited in water production systems, but are permitted in growing media production systems.

7.4.8 Fertilizers in all stages of growing and harvesting are prohibited in water production systems.

7.4.9 When growing sprouts, shoots or microgreens in a growing media, substances listed in Table 4.2 (Column 1) of CAN/CGSB-32.311 are permitted as the growing media and for crop nutrition. The physical structure of the growing media shall include both a mineral fraction (sand, silt or clay, excluding perlite and vermiculite) and a biological fraction.

7.4.10 Substances used for cleaning or sanitation of seed shall be limited to substances listed in Table 4.2 (Column 2) or Table 7.3 of CAN/CGSB-32.311.

7.4.11 When growing sprouts, shoots or microgreens the operator shall:

a) use reusable and recyclable containers and flats whenever possible;

b) reuse or recycle growing media whenever possible;

c) only use substances listed in Table 4.2 (Column 2) of CAN/CGSB-32.311 if crop production aids are required; and

d) use appropriate equipment cleaners, disinfectants and sanitizers listed in Tables 7.3 and 7.4 of CAN/CGSB-32.311.

7.4.12 Sprouts, shoots and microgreens product preparation

Wherever harvested organic product preparation takes place, 8.1 and 8.2 apply.

7.4.13 Facility pest management

Clause 8.3 applies to pest management practices in and around facilities.

7.5 Crops Grown in Structures or Containers (previously known as Greenhouse crops)

7.5.1 Subclause 7.5 applies to:

a) all organic crops grown in containers (indoors or outdoors). Containers include production systems that limit root contact with native soil, such as crops grown in pots, troughs and plastic-lined beds, etc.; and

b) in-ground crops that are grown using supplemental lighting, heating or CO2 enrichment within a structure, such as a greenhouse, tunnel (high or low), hoophouse, etc.

7.5.2 Subclause 7.5 does not apply to:

a) sprouts, shoots or microgreens (Clause 7.4);
b) in-ground crops grown in a structure, such as a cold frame, caterpillar tunnel, etc., without supplemental lighting, heating or CO2 enrichment; or
c) crops grown under row cover, insect netting or bird netting (covered in Clause 5).

7.5.3 All relevant subclauses in this standard apply to crops grown in structures or containers where this subclause has no specific requirements, including clauses 1-4, 5.1.1, 5.1.2 (for in ground operations) and 5.1.3, through 5.9.

Additional exceptions for container operators are as follows:

a) crop rotations as part of a soil building program (5.4.2) are not required;

b) mechanical tillage and cultivation practices as outlined in 5.4.5 are not applicable; and

c) the requirement in 5.4.4 with regards to the organic matter produced on the operation is superseded by the allowance for disposal in 7.5.12 b1); and if manure is not used, 5.5.1 does not apply.

7.5.4 In a permanent, in-ground soil system, prohibited substances shall not have been used for at least 36 months before the harvest of an organic crop.

7.5.5 Hydroponic and aeroponic productions (see definitions in Clause 3) are prohibited.

7.5.5.1 The soil used in a container system shall support and promote microorganism and macroorganism populations that contribute, like a living soil in the field, to nourishing plant roots. If necessary, the soil can be inoculated with non-genetically engineered microorganisms (see 1.4 a) of this standard and Table 4.2 Microorganisms and microbial products of CAN/CGSB-32.311). The soil shall:

a) not contain prohibited substances (see 1.5 of this standard);
b) be composed of substances listed in Table 4.2 (Column 1) of CAN/CGSB-32.311;
c) contain a mineral fraction (sand, silt or clay, that excludes perlite and vermiculite) that makes up at least 2% of the soil mix as measured by dry weight or volume (whichever measure is appropriate) when initially mixed;
d) contain compost compliant with this standard that makes up at least 10% of the volume of the soil mix. As an exception, seedling/starter mixes may contain less than 10% compost if needed to ensure adequate germination/rooting; and
e) a biological fraction that supports root-soil interaction and supports soil health.

7.5.5.2 The starting and maintained volume of soil in containers shall be proportional to the overall plant size, growth rate, targeted yield, and length of crop cycle.

a) For crops grown in structures covered by Clause 7.5, the photosynthetic area comprises the floor area devoted to crop production including the aisles and spaces between plants but not including non-production areas, such as centre or header aisles, service ways, and storage areas, etc.

b) For outdoor crops grown in containers, the photosynthetic area comprises the ground area devoted to crop production including the walkways, aisles and spaces between plants, but not including non-production areas, such as field access ways, turn-around areas, hedgerows and storage areas, etc.

c) The length of a crop cycle will vary across the country, particularly in unheated structures, and should be taken into consideration when determining the volume of soil required. For perennial crops, the length of the active crop cycle starts at the beginning of seasonal growth and ends at the end of harvest during the same season.

NOTE For container crops that are difficult to top-dress, for example strawberries, sufficient nutrition should be provided in the soil, prior to the start of the crop, to provide available nutrition continuously for the duration of the crop cycle. When this is not possible, liquid amendments listed in Table 4.2 (Column 1) of CAN/CGSB-32.311 may be used.

7.5.5.3 The minimum amount of soil required for crops not covered by 7.5.5.4 is 2.5 L (0.66 gal) of soil per m^2 of photosynthetic area per week of crop production time. The maximum amount of soil required in any case is 60 L/m^2 (1.2 gal/ft^2) of photosynthetic area. Crop production time is counted from the start of plant propagation (for example seeding, sticking of unrooted vegetative cuttings, divisions, etc.) until final harvest.

7.5.5.4 The following conditions apply to containerized, semi-indeterminate and indeterminate staked crops (for example, tomatoes, peppers, cucumbers, eggplant):

a) additional compost applications shall be included in the fertility program;
b) the maintained soil volume shall be at least 60 L/m² (1.2 gal/ft²), based on the photosynthetic area. Interplanting short-lived crops among other crops (e.g., basil among tomatoes) or having multiple crop cycles within a year (i.e., cucumber) do not reduce this 60 L/m² requirement; and
c) production units existing prior to November 2016 that have been continuously managed organically by the same operator, have not had major renovations, have not changed production area and do not comply with 7.5.5.4 b) are allowed to continue producing staked crops using a soil volume smaller than 60 L/m² (1.2 gal/ft²).

NOTE Part 13 Organic Products of the *Safe Food for Canadians Regulations* requires that the application for the organic certification of crops grown in greenhouses with a permanent in-ground soil system be filed at least 15 months before the day on which the food is expected to be sold. During that period of time, compliance with this standard will be assessed by the certification body and this assessment must include at least one inspection of the production unit, during production, in the year before crops may be eligible for certification and one inspection, during production, in the year crops are eligible for certification. This requirement does not apply to greenhouses built on land that is part of an existing organic operation. In the case of an initial application for organic certification of crops grown in containers, the application for certification must be filed within 12 months before the day on which the product is expected to be marketed.

7.5.6 Supplemental heat and carbon dioxide (CO_2) enrichment are permitted. Supplemental nutrition with substances listed in Table 4.2 (Column 1) of CAN/CGSB-32.311 is permitted.

7.5.7 The sun shall be the primary source of light for photosynthesis from sunrise to sunset for all crops covered by Clause 7.5 on a year-round basis (i.e., growing plants in a predominantly opaque structure is prohibited, even if it has windows that permit some sunlight to reach the plants).

In addition to sunlight, supplemental lighting may be used (see 7.5.11 b 2)). As an exception, 100% artificial lighting can be used for annual seedling and transplants that are started by the operation in winter or spring and will be planted in the same operation. The exception allows 100% artificial lighting only for these plants for the period from seeding to final transplanting. "Final transplanting" means moving a seedling or transplant into its final growing container or into the ground.

7.5.8 For crops harvested within 30 days of imbibition, organic seed shall be used.

7.5.9 Plants and soil, including potting soil, shall not come into contact with prohibited substances, including wood treated with prohibited substances.

7.5.10 For crop production, the operator shall:

a) use reusable and recyclable pots and flats whenever possible;
b) use substances listed in Table 4.2 (Column 1 or 2) of CAN/CGSB-32.311 as required; and
c) use appropriate equipment cleaners, disinfectants and sanitizers listed in Tables 7.3 and 7.4 of CAN/CGSB-32.311.

7.5.11 The following procedures, processes or substances are permitted to:

a) clean and disinfect crop structures, equipment that may contact the soil or crop, and plant containers, pots and flats:
    1) substances listed in Tables 7.3 or 7.4 of CAN/CGSB-32.311; and
    2) steam-heat sterilization;
b) stimulate growth or development:
    1) substances listed in Table 4.2 (Column 1 or 2) of CAN/CGSB-32.311; and
    2) control of daily temperature and light levels;
c) prevent and control pests including diseases, insects and other organisms:
    1) substances listed in Table 4.2 (Column 2) of CAN/CGSB-32.311;
    2) pruning;
    3) roguing;
    4) vacuuming;
    5) temperature manipulation, for example freezing, heating, steaming;
    6) pest exclusion from greenhouses with air filters, screens or other physical devices; and
    7) biological control methods.

7.5.12 Soil building and health are the cornerstones of organic agriculture and hence Subclause 5.4 regarding "Soil fertility and nutrient management" of this standard applies to crops grown under clause 7.5, except that 5.4.5 does not apply to container production as outlined in 7.5 c). In addition:

a) in-ground operations shall regenerate their soils in the same fashion as field crop operations;

b) in addition to the requirements in 7.5.5, container operations

1) shall build permanent soils in their containers reusing their soil for a minimum of three consecutive years. If necessary, and with justification, the soil may be replaced prior to three years. Spent soil shall be recycled in or outside the operation unless the disposal of used soil is mandatory due to a regulatory directive. Container operators have 3 years from publication of the 2025 standard to comply with this requirement.
2) may graft onto disease-resistant rootstock, freeze the soil in their containers in winter, and regenerate the soil by introducing organic matter such as compost or biodegradable plant mulch (straw or hay).
3) may be disposed of plant debris as necessary.

7.6 Wild crops

7.6.1 An organic wild plant product shall be harvested from a clearly defined area or production unit. The operator shall provide documentation proving that prohibited substances have not been used for at least 36 months before the harvest of an organic crop.

7.6.2 The operator shall prepare an organic plan (see 4.1, 4.2 and 4.3) that includes:

a) a detailed description of production areas and harvest methods;

b) management practices that preserve wild species and avoid disturbance of the environment; and

c) a record keeping system that meets the requirements of 4.4.

7.6.3 Wild products shall be considered organic on the condition that they are harvested in relatively undisturbed or stable natural settings. A wild plant shall be harvested or picked in a manner that promotes growth and production and does not damage the environment.

7.6.4 The production zone for wild crops shall be isolated from contact with prohibited substances by a clearly defined buffer (see 5.2.2). Harvest sites shall be located more than one kilometre (0.62 mi) from potential sources of environmental contamination, such as golf courses, dumps, sanitary landfill sites and industrial complexes.

7.6.5 Wild crop product preparation

Wherever organic product preparation takes place, clauses 8.1 and 8.2 apply.

7.6.6 Facility pest management

Clause 8.3 applies to pest management practices in and around crop facilities.

7.7 Organic insects

Clause 7.7 covers insects, snails, and other terrestrial invertebrates, excluding bees (which are addressed in Section 7.1 Apiculture of CAN/CGSB-32.310). All the relevant elements of clauses 1 to 6 in this standard shall apply.

7.7.1 Origin of insects

7.7.1.1 Insects shall:

a) be hatched on organic production units;
b) be managed organically throughout their lifetime.
c) be the offspring of organic parents. As an exception, insects may be the offspring of non-organic parents from outside the operation that have not been treated with prohibited substances after being introduced into the operation. These introduced non-organic parents shall never be sold as organic.

Note: Low replacement rates for organic insect breeding stock are expected. Operators should maintain their own organic breeding stock.

7.7.2 Insect feed

7.7.2.1 As per 6.4.1 and 6.4.2, the operator shall provide an organic feed ration that meets the nutritional requirements of the species being reared and limits cannibalism.

7.7.2.2 Feed, feed additives and feed supplements listed in 6.4.4; the following exceptions apply only for insects and only if permitted by CFIA regulations for the end use of the product and to recognize insects' natural consumption of decomposing and waste materials as part of their ecological role in nutrient cycling:

a) mammalian or avian slaughter by-products (as referenced in Table 5.2 of CAN/CGSB-32.311) from organic sources and guaranteed free of Specified Risk Materials (SRM) are permitted;

b) feed formulas that contain manure or other animal waste (as referenced in Table 5.2 of CAN/CGSB-32.311) sourced from organic livestock operations are permitted.

7.7.2.3 Insects of all ages shall have access to a species-appropriate source of water, whether from a vessel of potable water, environmental humidity, or feed moisture.

7.7.2.4 By exception, 6.4.7 a) applies as the result of a catastrophic event with a direct impact on the production unit (for example, fire, flood, or extraordinary weather conditions).

7.7.3 Insect health care

7.7.3.1 The operator shall establish and maintain preventative livestock health care practices, including:

a) a feed ration sufficient to meet the nutritional requirements of the livestock, as required under 7.7.2.1;

b) housing, space allowance and sanitation practices that minimize the occurrence and spread of disease and parasites.

7.7.3.2 The operator shall not administer (see definitions in Clause 3):

a) antibiotics;

b) veterinary drugs, in the absence of illness, other than vaccines;

c) synthetic substances to stimulate or retard growth or production, including hormones for growth promotion;

d) synthetic parasiticides or anti-microbials; nor

e) heath care products other than those listed in Table 5.3 of CAN/CGSB-32.311 and used as annotated.

7.7.3.3 Physical alterations of living invertebrates, such as the trimming of wings or removing of legs, are prohibited.

7.7.3.4 The method of killing shall ensure rapid death and minimize invertebrate suffering.

7.7.3.5 Medical treatment shall not be withheld from sick or injured insects to preserve their organic status. If methods permitted in organic production fail, all appropriate medications shall be used to restore insects to health. Insects that are treated with a method that is not permitted under organic production shall lose their organic status but may remain breeders in the organic operation.

7.7.4 Insect living conditions

7.7.4.1 The operator shall establish and maintain stocking densities and living conditions (environment, facilities, air quality and population size) that accommodate the health and natural behaviour of the species; minimize stress, pain, injuries and cannibalism; and meet the needs of the species for exploratory and foraging behaviour.

7.7.4.2 Density requirements may vary depending on many factors, such as the type of production system, species and production stage of the animal.

7.7.4.3 Air quality and living conditions of the insects shall be maintained and based on the needs and metabolic output of each species. The operator shall monitor the temperature, humidity, levels of dust particles and concentration of potentially damaging gases, such as ammonia.

7.7.4.4 Light cycle and light density shall satisfy the specific needs of the species being reared.

7.7.4.5 Land used for outdoor production shall be free of prohibited substances for 36 months prior to use.

7.7.4.6 Facilities shall be designed to prevent the escape of living invertebrates at any stage of development into local natural habitats.

7.7.4.7 Habitat construction materials, equipment, structural components or furnishing elements shall be kept in a reasonable hygienic condition in order to protect the insects' health and allow natural expression of behaviours (jumping, climbing, hiding), such as;

a) Wood and other structural materials shall not have been treated with prohibited substances.
b) Cardboard, including corrugated cardboard, may be used for structures; cardboard that is waxed or impregnated with a fungicide or another prohibited substances is prohibited.
c) Glossy paper and paper containing coloured ink are prohibited.
d) Bedding or substrate material shall be organic. However, if organic bedding is not commercially available, and if bedding or substrate is required for production, transportation or handling, non-organic bedding is permitted provided it shall not contain, or have been treated with, prohibited substances and shall meet the requirements in 1.4 and 1.5.

7.7.4.8 Frass management practices shall be implemented in a manner that minimizes soil and water degradation. Frass storage and handling facilities, including composting facilities, shall be designed, constructed and operated to prevent contamination of ground and surface water.

7.7.4.9 Clause 8.3 applies to pest management practices in and around insect production facilities.

Note: This section will be revised in 2030 to comply with the latest industry standards and research.

8 Maintaining organic integrity during cleaning, preparation and transportation

This clause applies to all operations that handle (including packaging and labelling), store or transport organic products for production or processing. During these activities, a central objective is to maintain the inherent organic qualities of the product through strict adherence to the procedures and principles of this standard. Operators are responsible for maintaining organic integrity at all points of the market supply chain, from production through the point of sale to the final consumer.

8.1 Maintaining integrity

8.1.1 Preparation materials, such as counters, containers and conveyors, in contact with food shall be clean and of food-grade quality.

8.1.2 Incidental additives shall not compromise organic integrity:

a) active ingredients of hand sanitizers used on hands that come into direct contact with organic products shall be listed in Table 7.3 of CAN/CGSB-32.311. Synthetic dyes, synthetic fragrances, and high viscous extenders, such as carbomers, are not permitted;

b) culinary steam, that is, steam used in direct contact with organic products or packaging, shall only contain:

   1) substances listed in Tables 6.3, 6.4 or 6.5 of CAN/CGSB-32.311; and/or

   2) food-grade cleaners, disinfectants and sanitizers authorized for organic product contact in Table 7.3 of CAN/CGSB-32.311;

c) food-contact lubricants shall be listed in Tables 6.3, 6.4 or 6.5 of CAN/CGSB-32.311;

d) use of cleaners, disinfectants and sanitizers shall comply with the requirements in 8.2 of this standard.

8.1.3 Mechanical, physical or biological processes (such as fermentation and smoking) are permitted.

8.1.4 To prevent commingling, organic products shall be segregated or otherwise protected from non-organic products at all times, for example, during processing, storage, at bulk and unbound stages.

8.1.5 If a production unit handles or prepares both organic and non-organic ingredients or products:

a) organic and non-organic ingredients and products shall not be mixed at any stage of preparation;
b) every measure shall be taken to ensure that the organic and non-organic identity of the finished product is maintained;
c) organic ingredients and products that are being moved or transferred within the operation shall remain visually identifiable;
d) operators shall document removal events used to prevent cross-contamination of organic and non-organic production runs;
e) handling or preparation of organic ingredients and products shall be carried out continuously until the run is complete;
f) organic runs shall be separated by place or time from similar runs of non-organic products; and
g) organic runs shall be planned in advance to prevent commingling.

8.1.6 Organic product packaging shall:

a) maintain organic product quality and integrity; and
b) be minimal in a manner that is consistent with 8.1.6 a). Packaging materials that minimize harm to the environment throughout their life cycle are preferred; and
c) comply with prohibitions in 1.4 b) and 1.4 e).

8.2 Cleaning, disinfecting and sanitizing

8.2.1 Food-grade cleaners, disinfectants and sanitizers listed in Table 7.3 of CAN/CGSB-32.311 may be used as annotated:

a) on organic product contact surfaces, which include equipment, storage and transport units;
b) in direct contact with organic products.

8.2.2 Cleaners, disinfectants and sanitizers listed in Table 7.4 of CAN/CGSB-32.311 may be used on organic product contact surfaces. Operators shall document that:

a) the cleaners, disinfectants and sanitizers are used as annotated; and
b) removal event(s) have eliminated the substance(s) from organic product contact surfaces prior to organic production.

8.2.3 If substances in Tables 7.3 and 7.4 are ineffective, other cleaners, disinfectants or sanitizers may be used on organic product contact surfaces. Operators shall document:

a) why the permitted substances were unsuitable or ineffective for cleaning, disinfecting or sanitizing specific equipment;
b) that removal event(s) have eliminated the substance(s) from organic product contact surfaces prior to organic production; and
c) that effluent discharge was neutralized to minimize the negative impact on the environment.

8.2.4 Specific cleaning, sanitation and disinfection requirements in clause 7 of this standard supersede those specified in 8.2.

8.3 Facility pest management and post-harvest management

8.3.1 Good production and manufacturing practices shall be adopted to prevent pest problems and shall involve:

a) the removal of pest habitat and food sources;
b) b) sealing the facility to limit pest intrusion when applicable; and
c) using environmental management (for example, altering light, temperature and atmosphere) to further prevent pest intrusion and reproduction.

8.3.2 Mechanical and physical methods of pest management may be used, including:

a) sticky tape, sticky traps or glue boards for insect monitoring and control (e.g., in light traps);
b) live capture traps and snap traps;
c) glue boards for rodents to mitigate infestations; and
d) d) lures, repellents, and baits as listed in Table 8.1 of CAN/CGSB-32.311.

8.3.3 In all cases for rodent control covered by 8.3.2, the catch must be disposed of promptly and humanely.

8.3.4 If the practices enumerated in 8.3.1 and 8.3.2 are ineffective, the operator may use pest control substances l isted in Table 8.1 of CAN/CGSB-32.311. The operator shall record the target pests, substances used, start and end dates, and the location(s) of pest control devices.

8.3.5 If the practices specified in 8.3.4 are ineffective, substances not listed in Table 8.1 of CAN/CGSB-32.311 ma y be used provided that there is no risk to organic product status or integrity. The following conditions apply:

a) If pest activity assessments justify the use of fumigation or fogging, operators shall ensure that organic products or the packaging materials are not present when these substances are used and shall document this activity.
b) If rodent activity assessments justify using rodenticide-containing baits, the bait shall:
   1) be enclosed in tamper-proof containers, in locations where there is no potential for contamination of organic products, crops, or fields; and
   2) not be used inside organic product processing areas or organic product storage areas.
c) Operators shall clearly document:
   1) why permitted substances were not suitable or were found to be ineffective for pest management;
   2) how operators prevented contact between organic products, packaging materials, crops and fields with substances that are not listed in Table 8.1;

3) all activities involved in the use, storage and disposal of substances that are not listed in Table 8.1 and;
4) a plan to minimize potential for non-target wildlife poisoning when baits containing rodenticide are used.

8.3.6 If pest and disease control substances that are not listed in Table 8.1 of CAN/CGSB-32.311 are used under a mandatory government program, operators shall monitor and document their use.

NOTE In the event of an emergency pest outbreak, Canadian operators are required to notify their certification body immediately of any change that may affect organic product certification.

8.3.7 Substances in Table 8.2 of CAN/CGSB-32.311 may be used for post-harvest storage.

8.4 Transportation

8.4.1 Every measure shall be taken to ensure that the integrity of organic inputs, ingredients and products is not compromised in transit. Physical segregation or other protection methods shall be used to avoid commingling or substitution with non-organic inputs, ingredients and products.

8.4.2 The following information shall accompany the organic product while in transit, including bulk loads:

a) a) the name and address of the person or organization responsible for the production, preparation or distribution
b) of the product;
c) b) the name of the product;
d) c) the organic status of the product; d) the name of the certification body; and
e) information that ensures traceability, for example, the lot number.

8.4.3 Organic products shall not be exposed to pesticides or pest control substances that are not listed in Table 8.1 of CAN/CGSB-32.311 during any stage of transit or at border crossings.

NOTE Owners are responsible for the organic integrity of the organic product while it is in transit. This includes the use of common carriers and custom hauling. Transport companies share responsibility for organic integrity while loading, transporting, or off-loading certified organic products.

9 Organic product composition

This clause applies to all operations involved in organic product preparation, including retailers.

9.1 Product composition

9.1.1 Organic product formulations shall consist primarily of organic whole or processed agricultural ingredients, organic whole or processed aquaculture ingredients (see 2.1, CAN/CGSB-32.312), and organic processing aids. Other permitted ingredients and processing aids, as described in Clause 9.2, shall be kept to a minimum.

9.1.2 The evaluation of product composition shall exclude non-agricultural sub-parts of ingredients listed in Tables 6.3 and 6.4 in CAN/CGSB-32.311 that have a technical or functional effect on the ingredient but not on the final organic product, and are not declared on the final organic product label. These ingredient sub-parts may be present in the final organic product but only in insignificant amounts. This includes non-agricultural sub-parts of ingredients, such as anticaking agents, carriers and fillers, preservatives, stabilizers, pH adjusters or buffers. The calculation of organic percentages shall account for all constituent ingredients or ingredient sub-parts, distinguishing between organic and non-organic components of each ingredient contained in the product.

9.1.3 The percentage of all organic ingredients in an organic product shall be calculated as follows:

a) Solid products (except livestock feed: see 9.1.3 d)): Divide the net mass, excluding water and salt, of all organic ingredients in the formulation by the net mass, excluding water and salt, of all ingredients.

b) Liquid products: If the product and its ingredients are liquid, 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 principal display panel, specification sheet or certificate of analysis uses phrases such as "reconstituted from concentrates" to describe the final product, single-strength concentrations of the ingredients or the finished product shall be used to calculate organic percentages.

c) Solid products and liquid products: Using data from the product's recipe and considering work-in-process ingredients made onsite, divide the combined net mass of solid organic ingredients (except for salt added during production) and liquid organic ingredients (except for water or salt/brine added during production) by the total mass of all ingredients. The water and salt content of ingredients received are not to be deducted.

d) Livestock feed shall exclusively contain organic agricultural ingredients and permitted feed additives or feed supplements as listed in Table 5.2 of CAN/CGSB-32.311. The requirements of 9.2 do not apply to livestock feed. No actual calculation required.

e) Seed products as defined by the *Seeds Act* (see 2.4) shall contain 100% organic seeds and may be treated, primed, pelleted, or coated with substances listed in Table 4.2 (Column 1 or 2) or Table 7.3 of CAN/CGSB-32.311.

9.1.4 The percentage of all organic ingredients in an organic product shall be rounded down to the nearest whole number.

9.2 Categorization of organic products

Based on the percentage of their organic ingredients, organic products fall into two categories:

9.2.1 95% organic content (or more)

Such products shall not contain an ingredient in both organic and non-organic form.

Such products may contain up to 5% of the following:

a) "ingredients classified as food additives" and "ingredients not classified as food additives" as listed in Tables 6.3 and 6.4 of CAN/CGSB-32.311, respectively, subject to requirements specified in substance listing annotations and restrictions specified in 6.2 of CAN/CGSB-32.311. Listed ingredients of agricultural origin shall meet the requirements in 1.4 a), 1.4 c), 1.4 d) of this standard and 6.2 of CAN/CGSB-32.311;

b) non-organic agricultural processing aids that meet the requirements in 1.4 a), 1.4 b), 1.4 c), and 1.4 d) of CAN/CGSB-32.310, and any annotations listed in Table 6.5 of CAN/CGSB-32.311;

c) non-agricultural processing aids as listed in Table 6.5 of CAN/CGSB-32.311, subject to the requirements specified in substance listing annotations;

d) non-organic agricultural ingredients that meet the requirements in 1.4 a), 1.4 c) and 1.4 d) of this standard, and non-organic aquacultural ingredients that meet the requirements in 1.4 a), 1.4 b) 1.4 c) and 1.4 h) of CAN/CGSB-32.312, and wild-capture aquatic animal ingredients. These ingredients are also subject to organic commercial availability requirements.

9.2.2 70-95% organic content

Such products shall not contain an ingredient in both its organic and non-organic form.

Such products may contain up to 30% of the following:

a) non-organic agricultural ingredients subject to the requirements in 1.4 a), 1.4 c), and 1.4 d) of this standard;

b) non-organic aquacultural ingredients subject to the requirements in 1.4 a), 1.4 b) 1.4 c) and 1.4 h) of CAN/CGSB-32.312, and wild-capture aquatic animal ingredients;

c) “ingredients classified as food additives”, and “ingredients not classified as food additives,” as listed in Tables 6.3 and 6.4 of CAN/CGSB-32.311, respectively, subject to the requirements specified in substance listing annotations and restrictions specified in 6.2 of CAN/CGSB-32.311. Listed ingredients of agricultural origin shall meet the requirements in 1.4 a), 1.4 c), 1.4 d) of this standard and 6.2 of CAN/CGSB-32.311;

d) non-organic agricultural processing aids that meet the requirements in 1.4 a), 1.4 b), 1.4 c), and 1.4 d) of this standard and any annotations listed in Table 6.5 of CAN/CGSB-32.311;

e) non-agricultural processing aids listed in Table 6.5 of CAN/CGSB-32.311 subject to the requirements specified in substance listing annotations.

10 Procedures, criteria and conditions to amend CAN/CGSB-32.311, Organic production systems – Permitted substances lists

This clause applies to all proposed amendments to the permitted substances lists (PSL). Only generic substances are listed in the PSL. Brand name substances, which may be a combination of generic substances, are not eligible for inclusion on the PSL. This clause does not apply to packaging materials, equipment surfaces, or other similar substances or materials.

10.1 Substance review procedures

10.1.1 Criteria provided in this clause shall be the determinants for amending CAN/CGSB-32.311.

10.1.2 The substance review process shall be open, transparent and fully participatory according to the Canadian General Standards Board (CGSB) procedures.

10.1.3 Consideration shall be given to the consequences a proposed amendment may have on equivalency and harmonization of this standard with standards and regulations of other jurisdictions.

10.2 Permitted substances criteria

10.2.1 Substances included in the PSL shall:

a) comply with the general principles of organic production specified in section 0.2 of the Introduction of this standard, and

b) comply with 1.4 and 1.5 of this standard.

10.2.2 Substance reviews shall:

a) consider the necessity, origin and mode of production, and the social and ecological impact of the production and application of the substance;

b) include a detailed description of the substance and a substantive rationale along with documentation in support of the proposed amendment; and

c) include an evaluation of all available alternatives, including substances and acceptable practices outlined in this standard, and in other production systems.

10.2.3 If applicable, the substance annotation shall include:

a) restrictions concerning its origin and mode of production;

b) restrictions concerning its composition and usage; and

c) a commercial availability clause which allows for the use of an alternative substance when the preferred form of the substance as outlined in the following tables is not available in sufficient quality or quantity, at the time of publication.

10.3 Specific substance review criteria

The criteria used for guiding the review of a substance are described in Tables 10, 11, 12 and 13.

Table 10 — Substance review criteria for permitted substances in crop production

	Soil amendments and crop nutrition (Table 4.2 Column 1 of CAN/CGSB-32.311)	**Crop production aids and materials (Table 4.2 Column 2 of CAN/CGSB-32.311)**
A. Necessity	Shall be necessary to improve or maintain soil fertility, to fulfil specific requirements of crops, or for specific soil conditioning and rotational purposes that cannot be satisfied by the requirements and practices of this standard.	Shall be necessary to manage plant diseases, insects, weeds and other pests. Used when no other adequate biological, physical or plant breeding alternatives or effective management practices are available.
B. Origin and mode of production	1. Shall be of plant, animal, microbial or mineral origin. Substances may be produced through physical (for example, mechanical or thermal), enzymatic or microbial (for example, composting, fermentation or digestion) methods of transformation. 2. Shall be derived from crops and livestock produced in accordance with this standard, or from naturally occurring minerals. 3. If preferred forms, as described in B1 & B2, of these substances do not exist, alternative substances may be considered for inclusion.	
C. Impact	Substance reviews shall consider: 1. 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. 2. The impact of a substance's use or potential misuse on soil quality (including biological diversity and activity, structure, salinity, sodicity, erodability and tilth), surface and ground water quality, ecosystems (in particular, non-target organisms) including wildlife and wildlife habitat, and animal and human health.	

Table 11 — Substance review criteria for permitted substances in livestock production

	Livestock feed (Table 5.2 of CAN/CGSB-32.311)	Livestock health care (Table 5.3 of CAN/CGSB-32.311)
A. Necessity	1. Shall be necessary to correct documented essential nutrient deficiencies in the forage or feed ration, when other biological, cultural or physical treatments permitted by this standard are not available; or 2. Shall be necessary to ensure and preserve product quality, when other biological, cultural or physical treatments permitted by this standard are not available.	Shall be necessary to prevent or treat livestock health problems when other treatments permitted by this standard are not available.
B. Origin and mode of production	Shall be organic or derived from mineral or biological matter.	Shall be organic or derived from mineral or biological matter.
C. Impact	Substance reviews shall consider: 1. 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. 2. The impact of a substance's use or potential misuse on soil quality (including biological diversity and activity, structure, salinity, sodicity, erodability and tilth), surface and ground water quality, ecosystems (in particular non-target organisms) including wildlife and wildlife habitat, and animal and human health.	

Table 12— Substance review criteria for permitted substances in processing of organic food

	Food ingredients and processing aids (Tables 6.3, 6.4 and 6.5 of CAN/CGSB-32.311)
A. Necessity	1. Shall be necessary to correct documented, essential nutrient deficiencies of the product, that is, vitamins and minerals; or when required by regulations; 2. Shall be essential for ensuring the safety of the product; 3. Shall be used only when it is not feasible or practical to produce or store such products without the use of these substances; or 4. Shall be necessary to achieve a technological effect during processing (for example, filtration) or an organoleptic effect in the final product (for example, colouring and flavouring).

Table 12– Substance review criteria for permitted substances in processing of organic food

	Food ingredients and processing aids (Tables 6.3, 6.4 and 6.5 of CAN/CGSB-32.311)
B. Origin and mode of production	1. Shall be found in nature. Substances may be produced using physical (for example, extraction, precipitation), enzymatic or microbial (for example, fermentation) processes, as well as through chemical extractions that do not alter the substance's chemical structure. 2. Preferably from organic sources. 3. If preferred forms, as described in B1 & B2, of these substances do not exist, alternative substances may be considered for inclusion.
C. Impact	Substance reviews shall consider the impact of use and potential misuse on: 1. Human health through both food and non-food exposure, including acute and chronic toxicity, allergenicity and metabolites; 2. product quality, including nutrition, flavour, taste, appearance and storage, if applicable; 3. consumer perception of the nature, substance and quality of a food product.

Table 13 – Substance review criteria for permitted substances in cleaning and sanitation

	Cleaning and sanitation substances (Tables 7.3 and 7.4 of CAN/CGSB-32.311)	Facility management substances (Tables 8.1 and 8.2 of CAN/CGSB-32.311)
A. Necessity	Substances used for cleaning and sanitizing organic products and organic product contact surfaces shall be necessary and appropriate for the intended use.	Substances used for pest control or to cause a post-harvest physiological effect shall be necessary and appropriate for the intended use.
B. Origin and mode of production	1. Shall be organic or derived from mineral or biological matter whenever possible. 2. If preferred forms, as described in B1, of these substances do not exist, alternative substances may be considered for inclusion.	
C. Impact	Substance reviews shall consider: 1. 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. 2. The impact of a substance’s use or potential misuse on soil quality (including biological diversity and activity, structure, salinity, sodicity, erodability and tilth), surface and ground water quality, ecosystems (in particular non-target organisms) including wildlife and wildlife habitat, and animal and human health.	

Annex A
(informative)
Categorization of organic products

Table A.1 – Categorization of organic products based on their percentage of organic ingredients

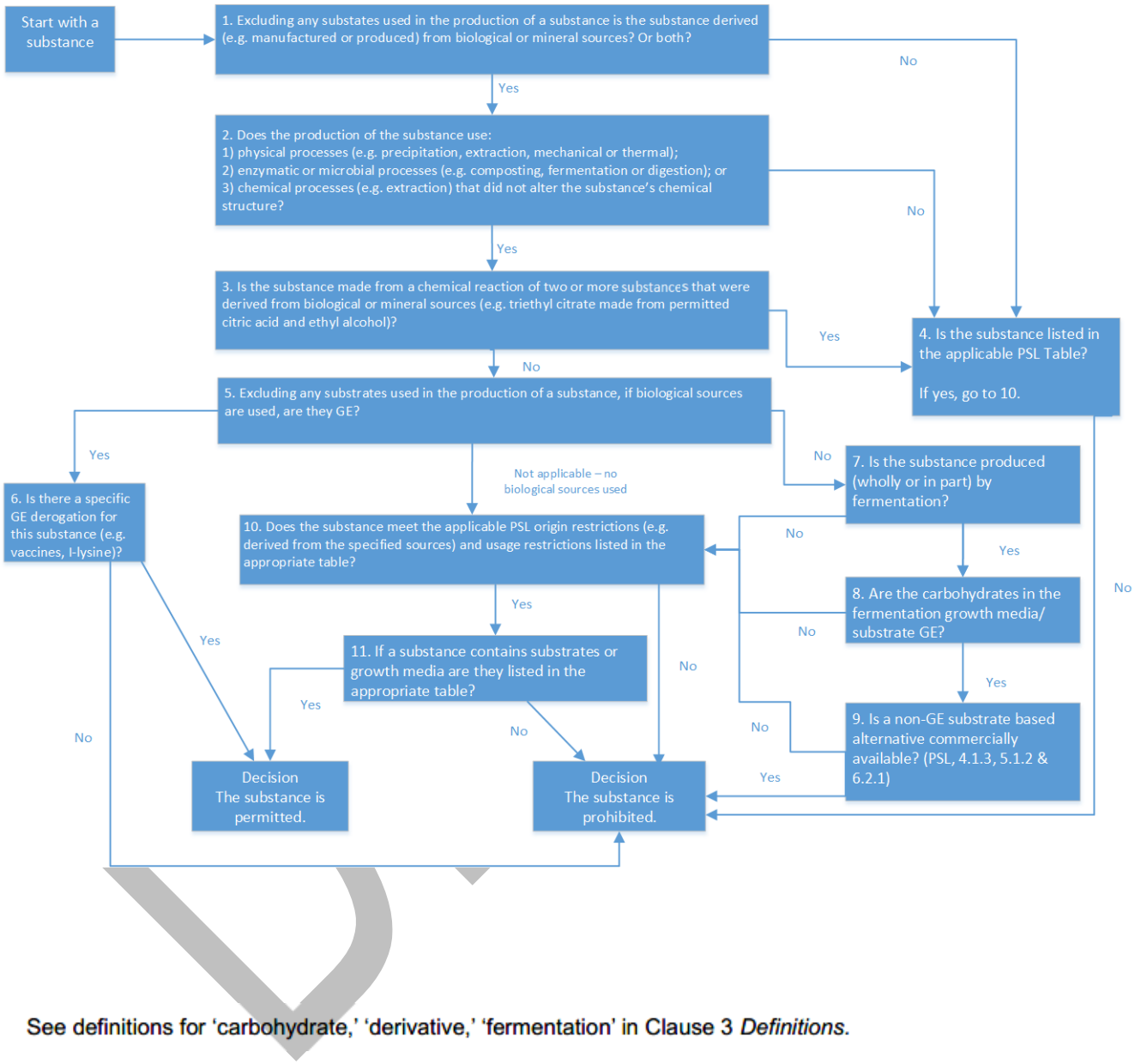
Summary	Categories		
	95%a **(or more)**	**70-<95%**b **(or more)**	**<70%**c
May not contain an ingredient in both its organic and non-organic form.	✓	✓	**n/a**
May contain up to 5% non-organic ingredients if the organic form is not commercially available.	✓	**n/a**	**n/a**
May contain up to 30% non-organic ingredients.	**n/a**	✓	**n/a**
May contain less than 70% organic ingredients.	**n/a**	**n/a**	✓
Non-organic ingredients both “classified as food additives” and “not classified as food additives” shall be listed in Tables 6.3 and 6.4 of CAN/CGSB-32.311, meet the specified annotations and comply with 6.2 of CAN/CGSB-32.311.	✓	✓	**n/a**
Whether listed or not in Tables 6.3 and 6.4 of CAN/CGSB-32.311, agricultural, non-organic ingredients shall meet 1.4 a), c) and d), and 6.2 of CAN/CGSB-32.311.	✓	✓	**n/a**
Non-listed agricultural, non-organic ingredients are subject to commercial availability requirements.	✓	**n/a**	**n/a**
Non-organic processing aids of agricultural origin are permitted, subject to the requirements of 1.4 a), b), c), and d); and any annotations listed in Table 6.5 of CAN/CGSB-32.311.	✓	✓	**n/a**
Non-agricultural processing aids are permitted if they are listed in Table 6.5 (processing aids) of CAN/CGSB-32.311.	✓	✓	**n/a**

[a] Products compliant with 9.2.1 may be identified as organic.

[b] Products compliant with 9.2.2 may only declare the percentage of organic ingredients.

[c] Products with less than 70% organic content may identify which ingredients are organic in their ingredient list. For full labelling requirements refer to current regulations.

Annex B
(informative)
Permitted Substances Decision Tree



See definitions for 'carbohydrate,' 'derivative,' 'fermentation' in Clause 3 *Definitions*.

Annex C
(*informative*)
Notes on Organic Principles

Section 0.2 of the Introduction indicates the General Principles of Organic Production. These are from IFOAM Organics International (www.ifoam.bio/why-organic/shaping-agriculture/four-principles-organic.

Historical organic principles

The principles listed below were the original principles published in 2006. Though they have been updated in the introduction of this standard, they have been retained in this annex to provide context for existing organic plans.

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.

The general principles of organic production include the following:

1. Protect the environment, minimize soil degradation and erosion, decrease pollution, optimize biological productivity and promote a sound state of health.
2. Maintain long-term soil fertility by optimizing conditions for biological activity within the soil.
3. Maintain biological diversity within the system.
4. Recycle materials and resources to the greatest extent possible within the operation.
5. Provide attentive care that promotes the health and meets the behavioural needs of livestock.
6. Prepare organic products, emphasizing careful processing, and handling methods in order to maintain the organic integrity and vital qualities of the products at all stages of production.
7. Rely on renewable resources in locally organized agriculture systems.

Fairness

IFOAM Organics International describes fairness as:

“Organic Agriculture should build on relationships that ensure fairness with regard to the common environment and life opportunities.

Fairness is characterized by equity, respect, justice and stewardship of the shared world, both among people and in their relations to other living beings.

This principle emphasizes that those involved in Organic Agriculture should conduct human relationships in a manner that ensures fairness at all levels and to all parties – farmers, workers, processors, distributors, traders and consumers. Organic Agriculture should provide everyone involved with a good quality of life, and contribute to food sovereignty and reduction of poverty. It aims to produce a sufficient supply of good quality food and other products.

This principle insists that animals should be provided with the conditions and opportunities of life that accord with their physiology, natural behaviour and well-being.

Natural and environmental resources that are used for production and consumption should be managed in a way that is socially and ecologically just and should be held in trust for future generations. Fairness requires systems of production, distribution and trade that are open and equitable and account for real environmental and social costs.”

Bibliography

[1] Canadian Food Inspection Agency (CFIA), *Organic equivalency arrangements with other countries*. Available from http://www.inspection.gc.ca/food/organic-products/equivalence-arrangements/eng/1311987562418/1311987760268

[2] Certified Organic Associations of British Columbia (COABC), *British Columbia Certified Organic Production Operation Policies and Management Standards*, décembre 2009. Disponible à l'adresse http://www.certifiedorganic.bc.ca.

[3] Codex Alimentarius Commission, CAC/GL 20-1995 — *Principles for Food Import and Export Certification and Inspection*. Available from http://www.codexalimentarius.org.

[4] Codex Alimentarius Commission, CAC/GL 32-1999 — *Guidelines for the Production, Processing, Labelling and Marketing of Organically Produced Foods*. Available from http://www.codexalimentarius.org.

[5] Conseil des appellations réservées et des termes valorisants (CARTV), *Québec Organic Designation Specification Manual*, January 2015. Available from http://www.cartv.gouv.qc.ca.

[6] Health Canada (HC), *Pest Control Products Act* (2002, c. 28). Available from https://laws-lois.justice.gc.ca/fra/lois/p-9.01/

[7] IFOAM Organics International, *IFOAM Norms for Organic Production and Processing*, August 2014. Available from https://ifoam.bio/sites/default/files/2020-04/ifoam_norms_version_july_2014.pdf.

[8] Organisation for Economic Co-operation and Development (OECD) *OECD Guidelines for the Testing of Chemicals, Section 3: Environmental fate and behaviour,* https://www.oecd-ilibrary.org/.

[9] Pest Management Regulatory Agency (PMRA) https://www.canada.ca/en/health-canada/services/consumer-product-safety/pesticides-pest-management.html.

[10] U.S. Department of Agriculture, *Agricultural Marketing Service, National Organic Program*. Available from http://www.ams.usda.gov/AMSv1.0/nop.