

CAN/CGSB-32.311-2026

Supersedes CAN/CGSB-32.311-2020,
Corrigendum No. 1



Organic production systems Permitted Substances Lists

Developed by the Canadian General Standards Board



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This standard was developed by the Canadian General Standards Board and published in March 2026.

ICS 67.040 / 67.120.30

ISBN 978-0-660-98650-0

Catalogue number P29-32-311-2026E-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 Listes des substances permises*

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

CAN/CGSB-32.311-2026

Preface

This National Standard of Canada, CAN/CGSB-32.311-2026, supersedes the 2020 edition and its 2021 Corrigendum. The following changes have been made.

Changes since the previous edition

- Additions, deletions or changes in all tables and Annex A

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.

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Introduction

Organic operations in Canada remain subject to all applicable laws and regulations. Substances that appear in CAN/CGSB-32.311, Organic production systems — Permitted substances lists, are subject to the Pest Control Products Act (PCPA) or the Food and Drugs Act (FDA) when used in Canada as pesticides or disinfectants. Health Canada's Pest Management Regulatory Agency (PMRA) is the federal authority responsible for the regulation of pest control products (including sanitizers) under the PCPA Regulations. Disinfectants are regulated by Health Canada's Therapeutic Products Directorate (TPD) under the FDA Regulations.

Substances that appear in CAN/CGSB-32.311, Organic production systems — Permitted substances lists, are subject to the FDA when used in Canada as veterinary drugs destined to food producing animals and to the Feeds Act (FA) when used in Canada as livestock feed. Health Canada's Veterinary Drugs Directorate is the federal authority responsible for the regulation of veterinary drugs under the FDA Regulations. Livestock feeds are regulated by the Animal Feed Division of the Canadian Food Inspection Agency under the FA Regulations and the Health of Animals Act.

This standard, in conjunction with CAN/CGSB-32.310, is intended for certification and regulation to prevent deceptive practices in the marketplace. The certification process assesses operational compliance. Certification is granted to compliant product.

Annex A provides a list of permitted substances in alphabetical order.

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 Permitted Substances Lists

1. Scope

This National Standard of Canada¹ provides additional information to CAN/CGSB-32.310, Organic production systems — General principles and management standards, in the form of permitted substances to be used as annotated in accordance with the scope of the table in which they are listed. Use of a listed substance in a manner inconsistent with the scope of the table in which it appears is not permitted, except as specified in a listed substance annotation.

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

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-32.310 — *Organic production systems — General principles and management standards*.

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 Council of Ministers of the Environment (CCME)

Guidelines for compost quality.

2.2.1 Source

The above may be obtained from the Canadian Council of Ministers of the Environment, 123 Main Street, Suite 360, Winnipeg, Manitoba R3C 1A3. Telephone: 204-948-2090. Fax: 204-948-2125. E-mail: info@ccme.ca. Web site: <http://www.ccme.ca>.

¹ References throughout this document to “this National Standard of Canada” or “this standard” refer to CAN/CGSB-32.311, Organic Production Systems — Permitted Substances Lists.

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2.3 Biodynamic Federation Demeter International

International Demeter Biodynamic Standards.

2.3.1 Source

The above may be obtained from the Biodynamic Federation Demeter International. Web site at: https://demeter.net/wp-content/uploads/2024/10/2025_Int_Dem_bio_Standard_eng.pdf

2.4. Pest Management Regulatory Agency (PMRA)

PMRA list of formulants.

2.4.1 Source

The above may be obtained from the PMRA Web site (<https://www.canada.ca/en/health-canada/services/consumer-product-safety/pesticides-pest-management.html>), at <https://open.canada.ca/data/en/dataset/ededff77-a021-48d6-89a5-cdbcd75fb4ff>.

2.5 Ministère du développement durable, de l'environnement et de la lutte contre les changements climatiques (MELCC)

Guidelines for the Beneficial Use of Fertilizing Residuals

2.5.1 Source

The above can be obtained from the MELCC Website, at http://www.environnement.gouv.qc.ca/matieres/mat_res/fertilisantes/critere/guide-mrf.pdf (only available in French).

2.6 Organisation for Economic Co-operation and Development (OECD)

OECD Guidelines for the Testing of Chemicals, Section 3: Environmental fate and behaviour

2.6.1 Source

The above may be obtained from the OECD Web site at <https://www.oecd-ilibrary.org/>.

2.7 Environment and Climate Change Canada (ECCC)

Toxic Substances List: Canadian Environmental Protection Act, 1999

2.7.1 Source

The above may be obtained from the ECCC Web site at <https://www.canada.ca/en/environment-climate-change/services/canadian-environmental-protection-act-registry/substances-list.html>

3 Requirements for adding or amending substances in the lists

Clause 10 of CAN/CGSB-32.310 outlines the requirements for adding or amending listed substances.

4 Permitted substances lists for crop production

4.1 Classification

4.1.1 Crop production substances are classified according to the following uses and applications:

- a) Soil amendments and crop nutrition in Table 4.2 (Column 1) are substances applied to the soil to improve fertility, tilth and soil biodiversity. Fertilizers, plant foods and soil amendments are primarily used for their plant nutrient content and may be applied to the soil or to plant foliage. Soil building practices and nutrient usage shall comply with section 5.4 of CAN/CGSB-32.310.
- b) Crop production aids and materials in Table 4.2 (Column 2) may be directly applied to the crop or soil, or used to control pests (including diseases, weeds and insects) when organic management practices alone cannot prevent or control pests as specified in section 5.6.2 of CAN/CGSB-32.310. Examples include: adjuvants, insect traps and plastic mulch, vertebrate animal pest management substances, plant disease and insect pest management substances.

4.1.2 Use of a listed substance in a manner inconsistent with the scope of the table in which it appears is not permitted, except as specified in substance annotations.

4.1.3 Substances listed in Table 4.2 shall comply with prohibitions in clauses 1.4 and 1.5 of CAN/CGSB-32.310. The following additional requirements apply to substances produced on substrates or growth media (for example, microorganisms and gibberellic acid):

- a) if the substance includes the substrates or growth media, the ingredients of the substrates or growth media shall be listed in Table 4.2;
- b) if the substance does not include the substrates or growth media, the substance shall be produced on non-genetically engineered substrates or growth media, if commercially available.

Table 4.2 — Substances for crop production			
Substance name(s)	Origin and usage	Column 1 Soil amendments	Column 2 Production aids
Acetic acid	Sources other than petrochemicals can be used. As an adjuvant, a pH regulator and for controlling pests (including weeds) and cleaning seeds.		•
Adhesives for sticky traps and barriers			•
Agar	For use in initial mushroom spawn production.	•	
Alfalfa meal and pellets	Shall be organic if commercially available.	•	
Algae and algal products	See Table 4.2 Aquatic plant extracts and Plant material.	•	•
Ammonium carbonate	As an attractant in insect traps.		•
Animal manure, dried	Dried manure may be pelleted or granulated. a) The operator shall be able to demonstrate that best practices known to eliminate human pathogens have been used in the production process; or b) demonstrate that the product meets criteria for acceptable levels (MPN/g total solids) of human pathogens as specified in Guidelines for Compost Quality; or c) follow the application restrictions in section 5.5.2.5 of CAN/CGSB-32.310. See also Compost and Digestate, anaerobic, for microbially treated manure.	•	
Animal manure, unprocessed	Includes solid manure (manure mixed with bedding), liquid manure and slurry. Manure sources shall comply with the requirements specified in 5.4.2 b) 3) and 5.5.1 of CAN/CGSB-32.310. Usage shall comply with 5.5.2.5. Concentrated nutrient extracts, such as those produced by distillation, are not considered to be animal manure.	•	

Table 4.2 — Substances for crop production			
Substance name(s)	Origin and usage	Column 1 Soil amendments	Column 2 Production aids
Aquatic plant extracts	Aquatic plant extracts may be produced using the following substances in order of preference: a) substances listed in Table 4.2 (Column 1 or 2) with the exception of Formulants used in Crop Production Aids; b) potassium hydroxide provided that the amount of solvent used does not exceed the amount necessary for extraction. The operator shall provide an affidavit from the manufacturer that proves the need to use potassium hydroxide; c) potassium sorbate; and d) sodium benzoate Aquatic plant extracts shall not contain more than: a) 1.5% total nitrogen (dry basis); b) 0.5% P₂O₅ (dry basis); and c) 20% K₂O (dry basis). Ammonium nitrogen shall not exceed 20% of total nitrogen. Nitrate-nitrogen shall not exceed 20% of total nitrogen (dry basis). Nitrogen compounds may not be added during the extraction process. See Table 4.2 Plant material for use of unprocessed aquatic plants.	•	•
Ascorbic acid (vitamin C)			•
Ash	Ash shall be from plant and animal sources. Ash from burning manure or from burning minerals, coloured paper, plastics or other non-biological substances is prohibited. Ash containing materials that cannot be verified or containing prohibited substances shall not exceed the limits (category C1) for acceptable levels (mg/kg) of arsenic, cadmium, chromium, lead and mercury, as specified in <i>Guidelines for the Beneficial Use of Fertilizing Residuals</i>. Shall not cause a build-up of heavy metals or micronutrients in soil.	•	•
Baits for rodent traps	May contain food or substances listed in Table 8.2.		•
Bentonite	See Table 4.2 Mined minerals, unprocessed and Clay.	•	•

Table 4.2 — Substances for crop production			
Substance name(s)	Origin and usage	Column 1 Soil amendments	Column 2 Production aids
Biochar	Produced through pyrolysis of forestry by-products which have not been treated or combined with prohibited substances. Recycled biochar from contaminated remediation sites is prohibited.	•	
Biodegradable plant containers	Biodegradable planting containers (for example, biobased pots or cell packs and paper chain pots) may be left to decompose in the field if all ingredients, including adhesives, are listed in Table 4.2 (Column 1). Paper-based plant containers may contain incidental formulants included in PMRA lists 4A and 4B. See definition of “Biodegradable”.		•
Biodynamic preparations for compost, soil and plants	As described in the international <i>Demeter Biodynamic Production Standards</i> .	•	•
Blood meal	Shall be sterilized.	•	
Bone meal	Shall be guaranteed free of Specified Risk Material (SRM).	•	
Borate (boric acid)	Mined sources of sodium tetraborate and octaborate are permitted as wood preservatives. Permitted for structural pest control (example: for ants). Direct contact with organic food or crops is prohibited in the case of products formulated as pesticides.		•
Boron	Borates including hydrated borates of sodium (octaborate, pentaborate, tetraborate, borax), boric acid, and boron-lignosulphonate complexes (except those containing ammonium lignosulphonate) are permitted when soil and plant deficiencies are documented by visual symptoms or by testing soil or plant tissue, or when the need for a preventative application can be documented. May be chelated with substances listed under Table 4.2 Chelates. Ammonium borates, boron-amino acid and boron potassium nitrate mixes (BKNO ₃) are not permitted.	•	

Table 4.2 — Substances for crop production			
Substance name(s)	Origin and usage	Column 1 Soil amendments	Column 2 Production aids
Botanical pesticides	Botanical pesticides shall be used in conjunction with a biorational pest management program. They shall not be the primary method of pest control. The least toxic botanicals shall be used in the least ecologically disruptive way possible. All label restrictions and directions shall be followed, including restrictions concerning crops, livestock, target pests, safety precautions, pre-harvest intervals and worker re-entry.		•
Brewers' grains and solubles	A by-product or by-products from the production of alcohol by fermenting grain. Shall be from non-GE grain. Shall not contain more than 7% total nitrogen (dry basis). Ammonium nitrogen shall not exceed 15% of the total nitrogen (dry basis). Nitrate nitrogen shall not exceed 10% of the total nitrogen (dry basis). Nitrogen compounds, beyond what is needed for yeast nutrition, may not be added during the fermentation process and they may not be added post fermentation.	•	
Calcium	Calcium carbonate (calcitic limestone), calcium magnesium carbonate (dolomitic limestone), calcium silicate, and calcium sulphate (gypsum), all from mined sources. Other biological or mineral sources, such as shells from aquatic animals (for example, oyster shell flour), aragonite, eggshell meal and lime from sugar processing. Calcium chloride derived from naturally occurring brines. May be chelated with substances listed under Table 4.2 Chelates. Prohibited forms include slaked limestone (calcium hydroxide); quicklime (calcium oxide); calcium sulphate produced using sulphuric acid and calcium products that have been used in controlled atmosphere storage. See Table 4.2 Calcium sulphate (gypsum) for additional restrictions on this substance.	•	
Calcium lignin sulphonate	See Table 4.2 Lignin and lignin sulphonates (lignosulphonates)	•	•
Calcium polysulphide	See Table 4.2 Lime sulphur.		•

Table 4.2 — Substances for crop production			
Substance name(s)	Origin and usage	Column 1 Soil amendments	Column 2 Production aids
Calcium sulphate (gypsum)	Mined sources are allowed; calcium sulphate produced using sulphuric acid is prohibited. To correct calcium and sulphur deficiencies and soil salinity problems.	•	
Cannery wastes	Shall be from organic sources. Non-organic cannery wastes shall be composted. See Table 4.2 Compost feedstocks.	•	
Carbon dioxide (CO ₂)	For soil and greenhouse use, for controlled atmosphere storage, and for storage pest control.		•
Cardboard	Cardboard shall not be waxed or impregnated with fungicide or prohibited substances. For use as mulch, as composting feedstock or as pest trapping material. See Table 4.2 Compost feedstocks.	•	•
Chelates	The following acids may be used to chelate metallic or metalloid nutrient elements listed in Table 4.2: Acetic (including vinegar), Ascorbic, Citric, Humic, Fulvic and Lignosulphonic.	•	•
Chitosan	Including chitosan hydrochloride and chitosan oligosaccharides (COS).	•	•
Cholecalciferol (vitamin D ₃)	Permitted if used outdoors and inside greenhouses for rodent control when methods described in 5.6.1 of CAN/CGSB-32.310 have failed. Prohibited inside on-farm food processing and food storage facilities.		•
Citric acid			•
Clay	Bentonite, perlite and kaolin as soil amendments, as seed pellet additives or for pest control. See Table 4.2 Mined minerals, unprocessed; Bentonite; Kaolin clay.	•	•

Table 4.2 — Substances for crop production			
Substance name(s)	Origin and usage	Column 1 Soil amendments	Column 2 Production aids
Cobalt	Sulphates, carbonates, oxides and chlorides of cobalt are permitted when soil deficiencies are documented by testing soil or plant tissue, or when the needs of soil microorganisms or livestock can be documented. May be chelated with substances listed under Table 4.2 Chelates. Nitrates and amino acid chelates are not permitted. Shall be used with caution to prevent excessive cobalt accumulation. Cobalt build-up in soil shall prohibit future use.	•	
Coir (coconut fiber)	Washed, processed and/or buffered (to adjust pH) with substances listed in Table 4.2 (Column 1 or Column 2) excluding Formulants used in crop production aids.		•
Compost	Compost produced on the farm is restricted to compost produced on a certified organic farm. Compost from off-farm sources includes every other source, for example: municipal, residential or industrial sources, or from any organic or non-organic farm. See Table 4.2 Compost from off-farm sources; Compost produced on the farm; Compost tea; and Compost feedstocks. For information on compost starters, see Table 4.2 Microorganisms and microbial products. For information on vermicompost, see Table 4.2 Worm castings.	•	

Table 4.2 – Substances for crop production			
Substance name(s)	Origin and usage	Column 1 Soil amendments	Column 2 Production aids
Compost feedstocks	Acceptable feedstocks include: a) animal manures conforming to criteria specified in 5.5.1 of CAN/CGSB-32.310; b) animals, animal products and by-products (including fishery); c) plants and plant by-products (including forestry and source-separated yard debris, such as grass clippings and leaves), pomaces and cannery wastes; d) soils and minerals that conform to the requirements of this standard and of CAN/CGSB-32.310; e) paper yard waste bags which contain coloured ink; and f) anaerobic digestate that conforms to the requirements of this standard. Substances listed in Table 4.2 (Column 1) are permitted in compost feedstocks when they meet the annotations therein. When evidence indicates that compost feedstocks could contain a substance or substances prohibited by Clauses 1.4 or 1.5 of CAN/CGSB-32.310 that is known to be potentially persistent in compost, before using the compost, compost test results shall be provided indicating no presence of the prohibited substance or a reference to scientific literature that establishes that the specific potential contaminant(s) will degrade during the composting process. The following composting feedstocks are prohibited: sewage sludge; compost starter and feedstocks fortified with substances not included in this standard; leather by-products; glossy paper; waxed cardboard; paper containing coloured ink other than paper yard waste bags; and animals, animal products and animal by-products not guaranteed free of Specified Risk Material (SRM).	•	
Compost from off-farm sources	Compost obtained from off-farm sources shall conform to the criteria specified in Table 4.2 Compost feedstocks. If compost is obtained from another farm, feedstock sources shall be documented. Compost obtained from all other sources shall comply to the following: a) shall not exceed the maximum acceptable levels of arsenic, cadmium, chromium, lead and mercury (mg/kg) and foreign matter outlined for unrestricted use compost (Category A), as specified in <i>Guidelines for Compost Quality</i>; b) shall meet criteria for acceptable levels (MPN/g total solids) of human pathogens as specified in <i>Guidelines for Compost Quality</i>; and c) shall not cause heavy metal buildup in soil.	•	

Table 4.2 — Substances for crop production			
Substance name(s)	Origin and usage	Column 1 Soil amendments	Column 2 Production aids
Compost produced on the farm	Compost produced on the farm shall conform to the criteria specified in Table 4.2 Compost feedstocks. In addition, if made from animal manures or other likely sources of human pathogens, compost produced on the farm shall: a) reach a temperature of 55 °C (130 °F) for a period of four consecutive days or more. The compost piles shall be mixed or managed to ensure that all of the feedstock heats up to the required temperature for the minimum time; or b) meet limits for acceptable levels (Most Probable Number of total solids per gram [MPN/g total solids]) of human pathogens specified in <i>Guidelines for Compost Quality</i>; or c) be considered as aged or raw manure rather than compost, that is, meeting requirements specified in subclause 5.5.2.5 of CAN/CGSB-32.310.	•	
Compost tea	Compost tea shall be made from composts that conform to criteria specified in Table 4.2 Compost produced on the farm; Compost from off-farm sources; or Worm castings. Additional ingredients shall be listed in Table 4.2 (Column 1). If compost tea is applied directly to the edible parts of plants, the operator shall be able to demonstrate that best practices known to eliminate pathogens during the processing have been used OR that the requirements for raw manure, as specified in subclauses 5.5.2.5 of CAN/CGSB-32.310, have been met. See the Compost tea definition in clause 3 of CAN/CGSB-32.310.	•	•
Condensed molasses fermentation solubles (Vinasse)	A by-product from the fermentation of cane, beet or agave sugar and/or their respective molasses. Shall be from non-GE feedstock. Shall not contain more than 7% total nitrogen (dry basis). Ammonium nitrogen shall not exceed 15% of the total nitrogen (dry basis). Nitrate nitrogen shall not exceed 10% of the total nitrogen (dry basis). Additional Nitrogen compounds may not be added post fermentation.	•	

Table 4.2 — Substances for crop production			
Substance name(s)	Origin and usage	Column 1 Soil amendments	Column 2 Production aids
Copper (plant nutrition)	Sulphates, carbonates, oxides and oxysulphates of copper may be used when soil and plant deficiencies are documented by visual symptoms or by testing of soil or plant tissue, or when the need for a preventative application can be documented. May be chelated with substances listed under Table 4.2 Chelates. Nitrates, chlorides, amino acid chelates, and ammonia-copper complexes are not permitted. Shall be used with caution to prevent excessive copper accumulation in the soil. Copper build-up in soil shall prohibit future use. No residues of copper products shall be visible on harvested products.	•	
Copper (production aid)	Copper sulphate, copper hydroxide, copper octanoate, Bordeaux mix, copper oxychloride and copper oxide. Permitted for use as a wood preservative, or for controlling pests, including diseases. Shall be used with caution to prevent excessive copper accumulation in the soil. Copper build-up in soil shall prohibit future use. No residues of copper products shall be visible on harvested products.		•
Diatomaceous earth	Non-calcined forms. May contain substances listed in Table 4.2 (Column 2).		•

Table 4.2 — Substances for crop production			
Substance name(s)	Origin and usage	Column 1 Soil amendments	Column 2 Production aids
Digestate, anaerobic	Permitted to be used for soil amendment, provided that the following conditions are met: a) the materials added to the digester shall be listed in Table 4.2 (Column 1) or permitted as Compost feedstocks; b) nutrients, vitamins and trace minerals other than nitrogen and phosphorus may be supplemented (in amounts needed for optimal metabolic performance of the digester) without restriction; c) shall not exceed maximum acceptable levels of arsenic, cadmium, chromium, lead and mercury (mg/kg), and foreign matter outlined for unrestricted use compost (Category A), as specified in <i>Guidelines for Compost Quality</i>; and d) shall meet the criteria for acceptable levels (MPN/g total solids) of human pathogens as specified in <i>Guidelines for Compost Quality</i> or the criteria for the application of raw manure on land specified in subclause 5.5.2 of CAN/CGSB-32.310 shall be met. When digestate feedstocks could contain a substance or substances prohibited by Clauses 1.4 or 1.5 of CAN/CGSB-32.310 that is potentially persistent, before using the anaerobic digestate, test results shall be provided indicating no presence of the prohibited substance or a reference to scientific literature that establishes that the specific potential contaminant(s) will degrade during the digestion process. It is permitted to use anaerobic digestate as a compost feedstock if it is added to other substances which are then composted. See Table 4.2 Compost feedstocks.	•	
Distillers' grains and solubles	A by-product or by-products from the production of alcohol by fermenting grain. Shall be from non-GE grain. Shall not contain more than 7% total nitrogen (dry basis). Ammonium nitrogen shall not exceed 15% of the total nitrogen (dry basis). Nitrate nitrogen shall not exceed 10% of the total nitrogen (dry basis). Nitrogen compounds, beyond what is needed for yeast nutrition, may not be added during the fermentation process and they may not be added post fermentation.	•	
Dormant oils	For use as a dormant spray on woody plants. Shall not be used as a dust suppressant.		•

Table 4.2 — Substances for crop production			
Substance name(s)	Origin and usage	Column 1 Soil amendments	Column 2 Production aids
Dust suppressants	Vegetable oils, organic molasses or substances listed in Table 4.2 (Column 1 or 2) are permitted, for example: Lignin and lignin sulphonates (lignosulphonates), excluding Formulants used in crop production aids. Petroleum products are prohibited.	•	•
Enzymes	Originating from plants, animals or microorganisms.	•	•
Extractants	The following may be used as extractants: a) water; b) culinary steam, as described in subclause 8.1.2 b) of CAN/CGSB-32.310; c) fats and oils, such as cocoa butter, vegetable oils, lanolin and animal fats, and alcohols other than isopropyl alcohol; d) supercritical CO ₂ ; and e) substances listed in Table 4.2 (Column 1 or 2) except for Formulants used in crop production aids.	•	•
Feather meal		•	
Ferric phosphate (iron ortho-phosphate, iron phosphate)	Permitted as a molluscicide (for slug and snail control). Shall be used in such a manner that runoff into water bodies is prevented. Contact with crops is prohibited.		•
Fibre row covers	Shall not be incorporated into the soil or left in the field to decompose; shall be removed at the end of the growing season.		•
Fish products	The following fish products are permitted: fish meal; fish powder; fish farm wastes and hydrolysate, emulsions and solubles. Fish farm wastes shall be composted. Only substances listed in Column 1 or 2 of Table 4.2 can be added to fish products with the exception that the addition of Formulants used in crop production aids is prohibited. Chemical treatment is prohibited, with the exception of the following substances which are in preferential order: a) vinegar; b) citric acid; c) phosphoric acid; or d) sulphuric acid. The amount of acid used shall not exceed the minimum needed to stabilize the product.	•	

Table 4.2 — Substances for crop production			
Substance name(s)	Origin and usage	Column 1 Soil amendments	Column 2 Production aids
Formulants used in soil amendments	Shall be derived from biological or mineral sources unless a substance annotation permits the use of a specified formulant. Substances listed elsewhere in Table 4.2 (Column 1) and used as formulants in soil amendments are subject to the annotations therein.	•	
Formulants used in crop production aids	Formulants used in crop production aids may only be used with substances listed in Column 2 of this table. Only formulants classified as List 4A or 4B by the Pest Management Regulatory Agency (PMRA) or derived from biological or mineral sources may be used with substances in Table 4.2 (Column 2). Formulants classified as List 3 by PMRA may be used with passive pheromone dispensers. Formulants classified as List 4A, 4B or 3 by PMRA are not subject to Clauses 1.4 or 1.5 of CAN/CGSB-32.310. Formulants classified as List 1 or 2 by PMRA are prohibited.		•
Frass	A by-product of insect farming. Shall be from an organic source if commercially available.	•	
Growth regulators for plants	Plant hormones, such as gibberellic acid, indoleacetic acid and cytokinins, made from terrestrial or aquatic plants or produced by microorganisms.		•
Homeopathic preparations			•
Hormones	See Table 4.2 Growth regulators for plants.		•
Humates, humic acid and fulvic acid	Permitted if mined; produced through microbial activity; extracted by physical processes; or with: a) Table 4.2 Extractants; or b) potassium hydroxide—potassium hydroxide levels used in the extraction process shall not exceed the amount required for extraction. Levels (mg/kg) of arsenic, cadmium, chromium, lead and mercury shall not exceed the limits (category C1) specified in <i>Guidelines for the Beneficial Use of Fertilising Residuals</i>. Shall not cause a build-up of heavy metals or micronutrients in soil.	•	

Table 4.2 — Substances for crop production			
Substance name(s)	Origin and usage	Column 1 Soil amendments	Column 2 Production aids
Hydrated lime (calcium hydroxide)	For plant disease control.		•
Hydrogen peroxide			•
Hydrolyzed proteins of plant origin	Resulting from enzymatic hydrolysis (in conjunction with physical processes). Shall not contain more than 0.3% hydroxyproline (as a percentage of total amino acids). Shall not contain more than 15% N (dry basis). At least 90% of the total nitrogen shall be organic (protein) nitrogen. Isolated amino acids such as glycine, lysine and methionine are prohibited. Nitrogen compounds may not be added during hydrolysis.	•	
Hydrolyzed proteins of animal origin	Resulting from enzymatic hydrolysis (in conjunction with physical processes). Shall not be applied to the edible portion of crops. Shall not contain more than 17% N (dry basis). At least 90% of the total nitrogen shall be organic (protein) nitrogen. Isolated amino acids such as glycine, lysine and methionine are prohibited. Nitrogen compounds may not be added during hydrolysis.	•	
Inoculants	See Table 4.2 Microorganisms and microbial products.	•	
Invertebrates	Worms, insects (including sterile insects), nematodes, arthropods and other invertebrates. See Table 4.2 Worm castings; Shells from aquatic animals.	•	•
Iron	Sulphates, carbonates, chlorides, oxides, oxysulphates, citrates, tartrates or permitted chelates of iron may be used when soil and plant deficiencies are documented by visual symptoms or by testing soil or plant tissue, or when the need for a preventative application can be documented. May be chelated with substances listed under Table 4.2 Chelates. Iron chloride may be used to prevent loss of phosphorus in soils prone to flooding without demonstrating a soil deficiency. Nitrates, amino acid chelates, and ammonia-iron complexes are not permitted.	•	
Kaolin clay	May be calcined. Shall not be processed or fortified with substances unless listed in Table 4.2 (Column 2).		•

Table 4.2 — Substances for crop production			
Substance name(s)	Origin and usage	Column 1 Soil amendments	Column 2 Production aids
Kelp and kelp products	See Table 4.2 Aquatic plant extracts and Plant Material.	•	•
Leaf mould		•	
Lignin and lignin sulphonates (ligno-sulphonates)	Permitted as a formulant ingredient(s), such as a chelating agent(s), binding agent(s), and as a dust suppressant(s). Ammonium lignosulphonate is prohibited. Other lignin forms, such as lignosulphonic acid, calcium lignosulphonate, magnesium lignosulphonate, sodium lignin and sodium lignosulphonate, are permitted.	•	•
Lime sulphur (calcium polysulphide)	Permitted on plants as: a) a fungicide; b) an insecticide; and c) an acaricide (mite control).		•
Limestone	Mined magnesium and calcium carbonates. See Table 4.2 Calcium.	•	
Magnesium	The following sources are permitted: a) mined magnesium rock; b) magnesium chloride derived from natural brines; c) mined calcium magnesium carbonate (dolomitic limestone) that has not been slaked; d) potassium magnesium sulphate (langbeinite); e) magnesium sulphate (kieserite or Epsom salts) may be used when soil and plant deficiencies are documented by visual symptoms or by testing of soil or plant tissue, or when the need for a preventative application is documented.	•	
Manganese	Sulphates, oxides, oxysulphates, carbonates, chlorides, citrates, tartrates or permitted chelates of manganese may be used when soil and plant deficiencies are documented by visual symptoms or by testing soil or plant tissue, or when the need for a preventative application can be documented. May be chelated with substances listed under Table 4.2 Chelates. Nitrates, amino acid chelates, and ammonia-manganese complexes are not permitted.	•	
Meat meal	Shall be processed by drying or heat sterilization or composted.	•	

Table 4.2 — Substances for crop production			
Substance name(s)	Origin and usage	Column 1 Soil amendments	Column 2 Production aids
Microbial extracts	Extracts of microorganisms (viruses, bacteria, protozoa, phages, and fungi), such as spinosad. Products may contain dead microorganisms and substances in Table 4.2 (Column 1 or 2). If the growth substrate includes substances not listed in Table 4.2 column 1, the growth substances (substrate) shall not be present in the final product, or be present at levels which have no material functional effect. Sewage sludge is prohibited. Carriers or substances added to or expected to be present in the final product shall be listed in Table 4.2 Column 1. Pharmaceuticals made from biological sources, such as natamycin, penicillin and streptomycin, are prohibited even if registered as pesticides. Does not include nutrient extracts such as nitrogen extracted from microorganisms. See Table 4.2 Microorganisms and microbial products and Microbial fertilizers.		•
Microbial fertilizers	Microbial biomass that is the by-product of food processing. Examples include bacterial biomass and yeast press cake. If the growth substrate includes substances not listed in Table 4.2 (Column 1), the growth substances (substrate) shall not be present in the final product, or be present at levels that have no material functional effect. Sewage sludge is prohibited. Carriers or substances added to or expected to be present in the final product shall be listed in Table 4.2 (Column 1). Shall not exceed the limits (category C1) for acceptable levels (mg/kg) of arsenic, cadmium, chromium, lead and mercury, as specified in Guidelines for the Beneficial Use of Fertilizing Residuals. Shall not cause a build-up of heavy metals or micronutrients in the soil. Does not include substances extracted from microorganisms or produced by fermentation. See Table 4.2 Microbial extracts and Microorganisms and microbial products.	•	

Table 4.2 — Substances for crop production			
Substance name(s)	Origin and usage	Column 1 Soil amendments	Column 2 Production aids
Microorganisms and microbial products	Living microorganisms, such as viruses, bacteria, protozoa, phages, and fungi. Microbial products may contain substances in Table 4.2 (Column 1 or 2). Examples include: rhizobium bacteria; mycorrhizal fungi; yeast; <i>Bacillus thuringiensis</i>; virus and viruses sprays (e.g., granulosis). If the growth substrate includes substances not listed in Table 4.2, the growth substances (substrate) shall not be present in the final product, or be at levels which have no material functional effect. Sewage sludge is prohibited. Carriers or substances added to or expected to be present in the final product shall be listed in Table 4.2. Ionizing radiation is permitted for use on a peat moss carrier before the addition of microbial inoculants. Radiation is otherwise prohibited. Pharmaceuticals made from biological sources, such as natamycin, penicillin and streptomycin, are prohibited even if registered as pesticides. See Table 4.2 Microbial extracts and Microbial fertilizers.	•	•
Milk and milk by-products		•	•
Mined minerals, unprocessed	Mined minerals include basalt, pumice, sand, feldspar, mica, granite dust and unprocessed rock dust. Minerals extracted from seawater are permitted. To be allowed as a mined mineral, the product shall not have undergone any change in its molecular structure through heating, processing, ion exchange or combining with other substances. Sodium nitrate is prohibited. Rock dust mixed with petroleum products, such as those from stone engraving, is prohibited. See annotations for specific minerals in Table 4.2 (Column 1).	•	
Molasses	Shall be organic.	•	

Table 4.2 – Substances for crop production			
Substance name(s)	Origin and usage	Column 1 Soil amendments	Column 2 Production aids
Molybdenum	Sodium molybdate and molybdenum trioxide may be used when soil and plant deficiencies are documented by visual symptoms or by testing soil or plant tissue, or when the need for a preventative application can be documented. May be chelated with substances listed under Table 4.2 Chelates. Ammonium molybdate and amino acid chelates complexes are not permitted.	•	
Mulches	Biological materials from organic sources are permitted (e.g., straw, leaves, grass clippings, hay, wool or untreated burlap). If organic materials are not commercially available, non-organic, non-genetically engineered sources may be used provided that prohibited substances have not been used on these materials for at least 60 days before harvest. Prohibited mulch material includes, but is not limited to, sawdust, wood chips, bark and shavings that is treated or processed with Formulants used in crop production aids or with substances, such as herbicides, preservatives and glues, not listed in Table 4.2 (Column 1 or 2). Newspaper and paper mulch are permitted; glossy paper and coloured ink are prohibited. Plastic mulches: Non-biodegradable and semi-biodegradable materials shall not be incorporated into the soil or left in the field to decompose. Use of polyvinyl chloride as plastic mulch or row cover is prohibited. Biodegradable mulches: 100% of biodegradable mulch films shall be derived from bio-based sources. Formulants or ingredients shall be listed in Table 4.2 (Column 1 or 2). Biodegradable polymers and Carbon Black from GE or petroleum sources are not permitted.	•	•
Mushroom compost	See Table 4.2 Compost.	•	
Ozonated water	Water saturated with ozone gas. For control of microbial pathogens in crops as a foliar application. Neither the ozonated water nor the gas is permitted for weed control or soil fumigation.		•
Nitrogen gas	For controlled atmosphere storage.		•

Table 4.2 — Substances for crop production			
Substance name(s)	Origin and usage	Column 1 Soil amendments	Column 2 Production aids
Non-ionizing radiation	May be used to manage pest load		•
Oilseed meals	Shall be organic if commercially available.	•	
Oxygen	For controlled atmosphere storage.		•
Peat moss		•	
Peracetic (peroxyacetic) acid	Formulations of peracetic acid may include unreacted residual reagents and catalysts, such as hydrogen peroxide, acetic acid and sulphuric acid. Permitted for: a) pest control; and b) disinfecting and cleaning seeds and plant stock. See Table 7.3.		•
Pheromones and other semiochemicals	All sources are permitted. For pest control.		•
Phosphate rock	May be fortified or processed with substances listed in Table 4.2 (Column 1) with the exception that treatment with acid prior to application is not permitted. Cadmium shall not exceed 90 mg/kg P ₂ O ₅ .	•	
Plant extracts, oils and preparations	Permitted extractants include fats and oils (such as cocoa butter, lanolin and animal fats); alcohols; water; or substances listed on Table 4.2 (Column 2) other than Formulants used in crop production aids. Extraction with other solvents is prohibited except with, in order of preference: a) potassium hydroxide; or b) sodium hydroxide; provided the amount of solvent used does not exceed the amount necessary for extraction. The operator shall provide an affidavit from the manufacturer that proves the need to use sodium hydroxide. For control of pests (e.g., diseases, weeds and insects). Plant oil, such as clove or mint oil is permitted for sprout inhibition in potatoes. See Table 8.3 Botanical oils.		•

Table 4.2 — Substances for crop production			
Substance name(s)	Origin and usage	Column 1 Soil amendments	Column 2 Production aids
Plant material	Aquatic or terrestrial plant biomass including cover crops, green manures, crop wastes, hay, straw, leaves, peat, forestry by-products, hulls and grain screenings. Does not include plant-based food products or by-products of food processing, fermentation or chemical treatment, such as corn steep liquor or concentrated nutrient extracts. However, certain products may be permitted under separate listings in Table 4.2; see Oilseed meal, Plant extracts, oils and preparations, Molasses, Pomaces, Cannery waste, Lignin and lignin sulphonates, etc. Wastes from crops that have been treated or produced with prohibited substances are permitted as compost feedstocks only (subject to Compost feedstock restrictions). Prohibited plant materials include sawdust, wood chips, bark and shavings that are treated or processed with Formulants used in crop production aids or with substances, such as herbicides, preservatives or glues, that are not listed in Table 4.2 (Column 1 or 2)	•	
Plant protectants	Mineral and biological substances including, but not limited to: calcium carbonate (from chalk, limestone, etc.); diatomaceous earth; kaolin clay; pine oil; pine resin; and yucca. White wash (solution of hydrated limestone) is permitted for use on trees to protect against sunburn and southwest disease. Permitted to protect plants from harsh environmental conditions (such as frost and sunburn), infection, the build-up of dirt on leaf surfaces, or injury by an invertebrate pest or disease.		•
Plastic for row covers and solarization	Non-biodegradable and semi-biodegradable materials shall not be incorporated into the soil or left in the field to decompose. Use of polyvinyl chloride as plastic mulch or row cover is prohibited.		•
Polyoxin D zinc salt			•
Pomaces	Feedstocks shall be from organically grown fruits or vegetables. Non-organic pomaces shall be composted. See Table 4.2 Compost feedstocks.	•	

Table 4.2 — Substances for crop production			
Substance name(s)	Origin and usage	Column 1 Soil amendments	Column 2 Production aids
Potassium	The following potassium sources are permitted: a) mined potassium magnesium sulphate (langbeinite) and mined potassium magnesium chlorides (sylvinite and kainite); b) potassium rock powder—includes basalt, biotite, mica, feldspar, granite, glauconite and greensand; c) potassium chloride—muriate of potash or rock potash. The use of potassium chloride shall not cause salt build-up in soil through repeated application; d) d) potassium sulphate—shall be produced by evaporating brines from seabed deposits or combining mined minerals using ion exchange. Potassium sulphate made using sulphuric acid as a reactant is prohibited.	•	
Potassium bicarbonate	For pest and disease control for crops grown in greenhouses and other structures, and for other crops.		•
Pyrethrum	May be combined with Formulants used in crop production aids. See Table 4.2 Botanical pesticides for restrictions.		•
Quicklime (calcium oxide)	Shall not be used as a fertilizer or as a soil amendment.		•
Repellents	Shall be derived from biological sources, such as sterilized blood meal, rotten eggs, hair or predator scents. May contain substances listed in Table 4.2 Column 2.		•
Salt	Sodium chloride, calcium chloride or potassium chloride; shall be mined or derived from sources of natural brine. The effluent from ion exchange water softener regeneration may be used. For pest control.		•
Seaweed and seaweed products	See Table 4.2 Aquatic plant extracts and Plant material.	•	•
Seed lubricant	Talc and graphite are permitted, and other substances listed in Table 4.2 (columns 1 and 2).		•

Table 4.2 — Substances for crop production			
Substance name(s)	Origin and usage	Column 1 Soil amendments	Column 2 Production aids
Seed treatments	Includes microbial products, kelp, yucca, gypsum, clays and botanicals. May contain substances listed in Table 4.2 (Column 1 or 2) or Table 7.3. See Table 4.2 Peracetic Acid; Treated Seeds and refer to subclause 5.3.2 of CAN/CGSB-32.310. Sodium hypochlorite 2.5% solution may be used to disinfect Solanaceae seeds.		•
Selenium	Sodium selenate and sodium selenite may be used when: (1) soil and plant deficiencies are documented by visual symptoms, (2) testing of soil or plant tissue indicates deficiencies, or (3) when the need for a preventative application to maintain plant, animal or human health can be documented.	•	
Shell from aquatic animals	Includes chitin.	•	•
Silicic acids, including potassium and sodium salts of silicic acid	Includes potassium and sodium silicates (and associated hydrates), and silicic acids such as monosilicic acid. May be pH-adjusted with sodium or potassium hydroxide, or with acids listed in Table 4.2. Formulations shall not contain more than 0.1% P ₂ O ₅ (dry basis) and not more than 0.1% N (dry basis). For unprocessed silicon minerals, such as Wollastonite, see Table 4.2 Mined minerals, unprocessed.		•
Soaps	Soaps (including insecticidal soaps) shall consist of fatty acids derived from animal or vegetable oils.		•
Soaps, ammonium	As a large animal repellent. Direct contact with soil or edible portion of crop is prohibited.		•
Sodium bicarbonate	For pest and disease control for crops grown in greenhouses and other structures, and for other crops.		•
Soil	From organic sources. Shall comply with restrictions specified in subclause 5.1.2 of CAN/CGSB-32.310. See definition of Soil in Clause 3 of CAN/CGSB-32.310. For soils used in containers, see Transplant media, potting soil and potting media.	•	
Sphagnum moss	May contain wetting agents that are listed in Table 4.2 Surfactants.	•	

Table 4.2 — Substances for crop production			
Substance name(s)	Origin and usage	Column 1 Soil amendments	Column 2 Production aids
Struvite (magnesium ammonium phosphate)	Obtained through precipitation from one or more of the following: a) liquid animal manure as described in CAN/CGSB-32.311 Table 4.2 (Column 1) Animal Manure, unprocessed, and in subclause 5.5.1 of CAN/CGSB-32.310; b) anaerobic digestate as described in Table 4.2 (Column 1); c) liquid waste from the processing of foods, beverages, pet foods or animal feeds; d) wastes from the processing of ethanol or biodiesel from plant-based agricultural feedstocks; and/or e) municipal wastewater that has undergone advanced treatment processes/systems capable of reducing impurities to levels below those attainable through conventional secondary or biological treatment. The type of wastewater stream and exact location(s) of the wastewater facilities shall be documented. May contain incidental precipitated phosphate salts. Struvite products from non-organic source animal manure (a) and municipal wastewater (e) shall contain: a) a phosphorus content (expressed as P_2O_5) between 25% and 30% (dry matter basis); b) a maximum organic carbon content of 1.5% (dry matter basis); c) a nitrogen content between 4% and 6% (dry matter basis); and d) a magnesium content (expressed as Mg) between 8% and 11% (dry matter basis) Derivatives from struvite are prohibited. Shall not exceed the maximum acceptable levels of arsenic, cadmium, chromium, lead and mercury (mg/kg) and foreign matter outlined for unrestricted use compost (Category A), as specified in <i>Guidelines for Compost Quality</i>. Shall not cause a build-up of heavy metals or micronutrients in soil. Shall meet criteria for acceptable levels (MPN/g total solids) of human pathogens as specified in <i>Guidelines for Compost Quality</i>.	•	

Table 4.2 — Substances for crop production			
Substance name(s)	Origin and usage	Column 1 Soil amendments	Column 2 Production aids
	Struvite from municipal wastewater (e): a) shall not exceed total aluminium 0.1% (dry matter basis); b) shall not exceed total iron 1% (dry matter basis); and c) shall have no more than 6 mg/kg of any substance classified as a PAH (polycyclic aromatic hydrocarbon) as defined in the <i>Toxic Substances List</i> (schedule 1) of the <i>Canadian Environmental Protection Act</i> (1999). For the evaluation of aluminium, iron and PAHs, struvite shall be measured using vacuum drying at 40°C until a constant weight to avoid the loss of crystal-bound water.		
Sugars	Organic sugars (e.g., sucrose, glucose, fructose) are permitted.	•	•
Sulphur smoke bombs	Use of sulphur smoke bombs shall be permitted in conjunction with other methods used for rodent control when a full pest control program is maintained but temporarily overwhelmed.		•
Sulphur, elemental	Both mined and reclaimed sources of elemental sulphur are permitted.	•	•
Summer oils	On foliage, as suffocating or stylet oils.		•
Surfactants	Includes plant-derived saponins, such as <i>Yucca schidigera</i> and <i>Quillaja saponaria</i> , or substances listed in Table 4.2 Formulants used in soil amendments; Formulants used in crop production aids; Soaps.	•	•
Transplant media, potting soil and potting media	Shall be composed entirely of permitted substances listed in Table 4.2 (Column 1 or 2). Soil from the field may be used provided that prohibited substances have not been used on the soil for at least 36 months.	•	
Treated seed	See Table 4.2 Peracetic acid; Seed treatments and refer to section 5.3.5 of CAN/CGSB-32.310.		•
Tree seals	Plant or milk-based paints are permitted. May only be combined with substances listed in Table 4.2 (Column 1 or 2). See Table 4.2 Plant Protectants. For planting stock: commercial grafting materials are permitted, provided that plants are maintained in accordance with requirements of CAN/CGSB-32.310 for at least 12 months prior to harvest of organic products.		•

Table 4.2 — Substances for crop production			
Substance name(s)	Origin and usage	Column 1 Soil amendments	Column 2 Production aids
Vermicasts	See Table 4.2 Worm castings.	•	
Vermiculite		•	
Vinegar (acetic acid)	See Table 4.2 Acetic acid.		•
Vitamins	Biological and mineral sources of all vitamins are permitted. Non-biological and non-mineral sources of vitamins B ₁ , C (ascorbic acid) and E are permitted.	•	•
Water		•	•
Water, recycled	Recycled water shall only contain substances listed in Tables 4.2 (Column 1 or 2), 7.3 and 7.4. Recycled wash water from all organic operations, including dairy operations, may be spread on crop lands. Requirements for land application, as specified in subclause 5.5.2.5 of CAN/CGSB-32.310, shall be met. In all other uses, recycled water shall meet applicable irrigation water regulatory requirements. Wastewater from sewage or industrial treatment plants are not permitted.	•	•
Wetting agents	See Table 4.2 Surfactants.	•	•
Wood ash	See Table 4.2 Ash.	•	•
Worm castings	Worm castings (also called vermicompost, worm compost, vermicasts, worm humus or worm manure) are the end product of the breakdown of organic matter and compounds by some earthworm species. Feedstocks for earthworms shall meet the criteria in Table 4.2 Compost feedstocks. The operator shall be able to demonstrate that: a) worm castings produced either on the farm or obtained from off-farm sources meet the limits for acceptable levels (MPN/g total solids) of human pathogens as specified in <i>Guidelines for Compost Quality</i>; or b) best practices known to eliminate human pathogens during vermicomposting have been used. See Table 4.2 Microorganisms and microbial products for information on compost starters.	•	

Table 4.2 — Substances for crop production			
Substance name(s)	Origin and usage	Column 1 Soil amendments	Column 2 Production aids
Yeast	See Table 4.2 Microorganisms and microbial products.	•	
Zinc	Sulphates, oxides, oxysulphates, carbonates, chlorides, citrates, lignosulphonates or permitted chelates of zinc may be used only when soil and plant deficiencies are documented by visual symptoms or by testing soil or plant tissue, or when the need for a preventative application can be documented. May be chelated with substances listed under Table 4.2 Chelates. Nitrates, amino acid chelates, ammonia-manganese complexes and polyphosphates are not permitted.	•	

5 Permitted substances lists for livestock production

5.1 Classification

5.1.1 Livestock production substances are classified according to the following uses and applications:

- a) Feed, feed additives and feed supplements;
- b) Health care products and production aids — Health care products include medications, remedies, parasiticides and other substances used to maintain or restore the well-being of an animal. Production aids include all other substances used on animals and their living areas, such as bedding, teat seals and teat dips.

5.1.2 Substances listed in Tables 5.2 and 5.3 shall comply with prohibitions in Clauses 1.4 and 1.5 of CAN/CGSB-32.310. The following additional requirements apply to substances produced on substrates or growth media (for example, microorganisms and lactic acid):

- a) if the substance includes the substrate or growth media, the substrate or growth media ingredients shall be listed in Table 5.2 or 5.3;
- b) if the substance does not include the substrates or growth media, the substance shall be produced on non-genetically engineered substrates or growth media, if commercially available.

Note: In Canada, livestock feed shall meet the compositional and labelling standards of the *Feeds Regulations, 2024*. Ingredients used in livestock feed must be approved and listed in the Canadian Feed Ingredients Table of the *Feeds Regulations, 2024*. Some ingredients and products require registration (such as enzymes and chelate minerals).

Table 5.2 – Feed, feed additives and feed supplements	
Substance name(s)	Origin and usage
Amino acids	As an exception to subclause 5.1.2 (CAN/CGSB-32.311) and Clause 1.4 a) of CAN/CGSB-32.310, isolated amino acids may be used when organic protein feeds and non-organic feed additives that are listed in Table 5.2 cannot meet amino acid requirements to produce a balanced feed as per subclauses 6.4.1 and 6.4.2 of CAN/CGSB-32.310.
Antioxidants	Derived from materials produced by living organisms (such as, but not limited to, plants, animals and microorganisms) using substances listed in Table 6.3 Extraction solvents and precipitation aids. Example: tocopherols derived from plants.
Colouring agents	From biological sources.
Diatomaceous earth	As a preventative livestock health care practice for control of internal parasites, and as an anti-caking agent. Shall be food grade (non-calcined). As free choice, or up to 2% of total diet, or as an anti-caking agent in feed ration.
Energy feeds and forage concentrates (grains) and roughages (hay, silage, fodder, straw)	Shall be obtained from organic sources. May include silage preservation products. See Table 5.2 Hay or silage preservation products.
Enzymes	Originating from plants, animals or microorganisms. Examples include, but are not limited to, bromelain, bovine liver catalase, ficin, animal lipase, malt, pancreatin, pepsin, trypsin, proteases and carbohydrases. Animal-derived enzymes shall be free of Specified Risk Material (SRM). This annotation will be reviewed at the next revision of the standard. See Table 5.2 Phytase.
Fishmeal	Shall be organic if commercially available. All preservatives and other ingredients shall be listed in Table 5.2.
Flavours	Shall be organic.
Food waste	Organic food for human consumption or by-products from organic food production (excluding abattoir waste).
Hay or silage preservation products	Preference should be given to bacterial or enzymatic additives derived from bacteria, fungi and plants and food by-products (such as molasses and whey). The following acids may be used: lactic, propionic and formic.

Table 5.2 – Feed, feed additives and feed supplements	
Substance name(s)	Origin and usage
Mammalian or avian slaughter by-products	From organic sources and guaranteed free of Specified Risk Materials (SRM). Shall be used only to feed insects.
Manure or other animal waste	Sourced from organic livestock operations. Shall be used only as a component of feed formulas for insects.
Microorganisms and yeasts	If organic sources of yeast are not commercially available, non-organic yeast sources, including yeast autolysate, shall be used.
Milk replacer	Shall be organic if commercially available. Permitted for emergency use. Without antibiotics and animal fats or by-products.
Minerals, trace minerals, elements	Unprocessed rock dusts; ground animal or plant material (other than blood or bone meal); and seawater are preferred sources. Chelated and sulphated forms are permitted. If none of the aforementioned sources are commercially available, other versions are permitted except for forms containing or produced with EDTA or EDDHA.
Molasses	Shall be organic.
Phytase	Permitted when feed supplementation with phytase is recommended to reduce the phosphorus level in manure and thereby reduce the potential environmental consequence. As an exception, GE-derived sources of phytase are allowed even though they are not compliant to subclause 5.1.2 of CAN/CGSB-32.311 or Clause 1.4 a) of CAN/CGSB-32.310. This substance and annotation will be reviewed at the next revision of the standard.
Pre-mixes	Concentrated mixture of minerals and vitamins. From organic sources if commercially available. All ingredients in pre-mixes shall be essential for animal nutrition, and listed in Table 5.2. Non-GE fillers, for example rice hulls, may be non-organic.
Probiotics	Probiotics may be administered orally, as dietary supplements, via pharmaceutical preparations in the form of capsules, tablets, alginate gels, or dry powder.
Protein feeds	Shall be from organic sources.
Seaweed meal	Shall be organic, if commercially available (to be reviewed in 2031).

Table 5.2 – Feed, feed additives and feed supplements	
Substance name(s)	Origin and usage
Vitamins	Permitted for enrichment or fortification. Vitamin formulants that comply with Canadian regulations are accepted, including those containing non-organic agricultural carriers. Vitamins not compliant to subclause 5.1.2 of CAN/CGSB-32.311 are permitted.

Table 5.3 – Health care products and production aids	
Substance name(s)	Origin and usage
Acetylsalicylic acid	Aspirin.
Acids	Ascorbic, acetic, propionic, citric, formic and lactic acids and vinegar. Permitted for all uses such as treatment of water and bedding.
Activated charcoal	Shall be of plant origin.
Alcohol, ethyl (ethanol)	Permitted as a disinfectant and sanitizer.
Alcohol, isopropyl	Permitted as a disinfectant.
Antibiotics	See Clause 6.6 of CAN/CGSB-32.310, for conditions pertaining to antibiotic use in livestock. See Table 5.3 Antibiotics, oxytetracycline.
Antibiotics, oxytetracycline	For emergency use for bees. The equipment shall be destroyed in accordance with subclause 7.1.15.7 of CAN/CGSB-32.310; treated bees do not need to be destroyed if they are taken out of organic production.
Anti-inflammatories	Non-steroid anti-inflammatories such as ketoprofen. To reduce inflammation, preference shall be given to alternative products, such as those listed in Table 5.3, Botanical compounds; and Homeopathy and biotherapies. See subclause 6.6.4.1 of CAN/CGSB-32.310.
Biologics	
Botanical compounds	Botanical preparations, such as atropine, butorphanol and other medicines from herbaceous plants shall be used according to label specifications. Substances containing petroleum-derived formulants, such as propylene glycol, shall not be fed to livestock.
Calcium borogluconate	For milk fever. No withdrawal period required.
Chlorhexidine	For surgical procedures conducted by a veterinarian. To be used as a post-milking teat dip when alternative germicidal agents and physical barriers have lost their effectiveness. See Table 5.3 Teat dips and udder wash.
Colostrum whey	Probiotic.
Colostrum	Shall be organic if commercially available.
Copper sulphate	As an essential nutrient (source of copper and sulphur) and for topical use (foot baths).

Table 5.3 – Health care products and production aids	
Substance name(s)	Origin and usage
Diatomaceous earth	For use in control of external parasites and as a preventative practice for control of internal parasites. For internal use, diatomaceous earth shall be food grade (non-calcined).
Electrolytes	Including, but not limited to: CMPK (Calcium, Magnesium, Phosphorus, Potassium), calcium propionate and calcium sulphate. Shall not contain antibiotics. Orally or by injection.
Formic acid	For apicultural use, to control parasitic mites. The use of this substance shall be discontinued 14 days before harvesting the hive products.
Formulants (inerts, excipients)	Shall be used in conjunction with substances listed in Table 5.3. Formulants are not subject to Clause 1.4 or 1.5 of CAN/CGSB-32.310 or subclause 5.1.2 of this standard.
Glucose	
Glycerol (glycerine, glycerin)	Shall be from organic sources if commercially available. Shall be from vegetable oil or animal fat. Shall be produced using fermentation or by hydrolysis.
Homeopathy and biotherapies	
Honey	Shall be organic.
Hydrated lime (calcium hydroxide)	Shall not be used to deodorize animal wastes.
Hydrogen peroxide	Pharmaceutical grade hydrogen peroxide is permitted for external use (disinfectant). Food-grade hydrogen peroxide is permitted for internal use (for example, added to livestock drinking water).
Iodine	If used as a topical disinfectant: permitted iodine sources include potassium iodide and elemental iodine. If used as a cleaning agent: non-elemental iodine shall be used; iodine shall not exceed 5% solution by volume (example: iodophors). Use shall be followed by a hot-water rinse.
Iron products	May be supplied by ferric phosphate, ferric pyrophosphate, ferrous lactate, ferrous sulphate, iron carbonate, iron gluconate, iron oxide, iron phosphate, iron sulphate or reduced iron.

Table 5.3 – Health care products and production aids	
Substance name(s)	Origin and usage
Lanolin	For external use only, such as udder balm (ointment).
Local anesthetics	Such as lidocaine. Use of pharmaceutical local anesthetics shall be followed by withdrawal periods of 90 days before slaughter for meat products, and seven days for milk. Preference shall be given to alternatives, such as clove oil, listed in Table 5.3 Botanical compounds; Homeopathy and biotherapies.
Magnesium sulphate	Mined sources. A source of magnesium and sulphur.
Mineral oil	For external use.
Minerals, trace minerals, elements	Non-synthetic chelated or sulphated minerals. Examples include oyster shell, calcium chloride and magnesium oxide. Synthetic nutrient minerals may be used if non-synthetic sources are not commercially available. Minerals from any source are permitted for medical use.
Microorganisms and yeasts	If organic sources of yeast are not commercially available, non-organic yeast sources derived from living yeast, including yeast autolysate, shall be used.
Oxalic acid	For mite control in honeybee colonies.
Oxytocin	For post-parturition therapeutic use. Meat from treated animals will not lose its organic status. See subclause 6.6.10 d) of CAN/CGSB-32.310, for criteria pertaining to the mandatory withdrawal period.
Paraffin	Shall be food-grade. For use in hives.
Parasiticides and anti-microbials	Shall respect requirements set out in Clause 6.6 of CAN/CGSB-32.310 with regard to the use of parasiticides.
Physical teat seals	All sources are permitted. Shall be free from antibiotics. For post-lactation use. Shall be completely removed prior to nursing or milking. Shall be prescribed and administered under veterinary supervision.
Plant oils	To control external parasites.
Prebiotics	From organic sources if commercially available.
Probiotics	Probiotics may be administered orally, as dietary supplements, via pharmaceutical preparations in the form of capsules, tablets, alginate gels, or dry powder.

Table 5.3 – Health care products and production aids	
Substance name(s)	Origin and usage
Propylene glycol	May only be used as an ingredient in foot baths.
Sedatives	Such as xylazine.
Selenium products	Derived from sodium selenate or sodium selenite. May be used to address documented deficiencies in the stock, soils or feed supplies. See Table 5.3 Minerals, trace minerals, elements.
Sulphur	For control of external parasites.
Teat dips and udder wash	Substances, such as alcohol, iodine, hydrogen peroxide, chlorine dioxide and ozone, can be used as disinfectants for a pre- or post-teat dip or udder wash if they are registered for this use by Canada's <i>Food and Drug Regulations</i> . Chlorhexidine can be used as a post-milking teat dip if alternative germicidal agents and physical barriers have lost their effectiveness. See Table 5.3 Chlorhexidine.
Thymol	See Table 5.3 Botanical compounds for thymol derived from botanical sources. Thymol that is not derived from botanical sources may only be used in foot baths.
Vaccines	Vaccines may be used in prevention of diseases. If vaccines compliant to subclause 5.1.2 of this standard are not commercially available, or are ineffective, vaccines not compliant to subclause 5.1.2 are permitted.
Vitamins	Vitamin formulants that comply with Canadian regulations are accepted, including those containing non-organic agricultural carriers. Vitamins not compliant to subclause 5.1.2 of this standard are permitted. Orally, topically or by injection.

6 Permitted substances lists for preparation

6.1 Classification

6.1.1 Processing substances are classified according to the following uses and applications:

- a) Food additives (see definition in Clause 3 of CAN/CGSB-32.310);
- b) Other ingredients not considered to be food additives;
- c) Processing aids (see definition in Clause 3 of CAN/CGSB-32.310).

6.2 Restrictions

6.2.1 Substances listed in Tables 6.3, 6.4 and 6.5 shall comply with prohibitions in Clauses 1.4 and 1.5 of CAN/CGSB-32.310. The following additional requirements apply to substances produced on substrates or growth media (for example, microorganisms and lactic acid):

- a) if the substance includes the substrates or growth media, the substrates or growth media ingredients shall be listed in Table 6.3, 6.4 or 6.5;
- b) if the substance does not include the substrates or growth media, the substance shall be produced on non-genetically engineered substrates or growth media, if commercially available.

6.2.2 Organic commercial availability requirements specified in the substance listing annotations of Tables 6.3, 6.4 or 6.5 apply to substances used in products composed of 95% or more organic content.

6.2.3 Other commercial availability requirements specified in the substance listing annotations of Tables 6.3, 6.4 or 6.5 apply to substances used in organic products composed of 70% or more organic content.

Table 6.3 – Ingredients classified as food additives	
Substance name(s)	Origin and usage
Alginic acid	
Antifoaming agents	See Table 6.5 Antifoaming agents.
Activated charcoal	Shall be of plant origin. Prohibited for use in the production of maple syrup.
Agar	See Table 6.3 Extraction solvents and precipitation aids.
Alginates	The following alginates are permitted: a) alginic acid; b) potassium alginate; and c) sodium alginate.
Ammonium bicarbonate	As a leavening agent.
Ammonium carbonate	As a leavening agent.
Argon	
Ascorbic acid (vitamin C)	
Calcium carbonate	Prohibited for use as a colouring agent.

Table 6.3 — Ingredients classified as food additives	
Substance name(s)	Origin and usage
Calcium chloride	Permitted for: a) milk products; b) fat products; c) soybean products; d) fruits and vegetables; and e) beer brewing to adjust the level of calcium.
Calcium citrate	
Calcium phosphates (mono-, di-, and tri-basic forms)	
Calcium sulphate (gypsum)	Mined sources; calcium sulphate produced using sulphuric acid is prohibited.
Carbon dioxide (CO ₂)	Carbonation of wine or mead is prohibited.
Carrageenan (Irish moss)	Shall be derived using substances listed in Table 6.3 Extraction solvents and precipitation aids. By exception, isopropyl alcohol may be used to derive carrageenan.
Carriers	Carriers of non-agricultural origin may be used if listed on Tables 6.3, 6.4 or 6.5. Non-organic carriers of agricultural origin (such as wheat starch) may be used if ingredients or processing aids containing organic carriers are not commercially available.
Citric acid	From fruit and vegetable products or produced by microbial fermentation of carbohydrate substances.
Colouring agents	From biological sources such as spices, annatto, juices made from plant sources, etc. derived using approved methods (see Table 12 B (1) and (2), Origin and mode of production of CAN/CGSB-32.310), and substances in Table 6.3 Extraction solvents and precipitation aids. May contain permitted carriers (see Table 6.3 and 6.4 Carriers).
Dibasic ammonium phosphate (diammonium phosphate, DAP)	As a yeast and bacterial food for vinegar and alcohol production restricted to 0.3 g/L (0.04 oz/gal). Not to be added to a final vinegar or alcohol product.

Table 6.3 — Ingredients classified as food additives	
Substance name(s)	Origin and usage
Enzymes	The following sources of enzymes are permitted: a) any preparations of enzymes normally used in food processing originating from edible, non-toxic plants, non-pathogenic fungi or non-pathogenic bacteria; b) originating from animals—shall be organic if commercially available: rennet; catalase from bovine liver; animal lipase; pancreatin; pepsin; and trypsin. Animal-derived enzymes shall be free of Specified Risk Material (SRM); and c) egg white lysozyme.
Extraction solvents and precipitation aids	The following may be used to derive (extract) substances listed in Tables 5.2, 6.3, 6.4 and 6.5: a) water; b) culinary steam, as described in subclause 8.1.2 b) of CAN/CGSB-32.310; c) fats, oils and alcohols other than isopropyl alcohol; d) supercritical CO₂; and e) substances listed in Tables 6.3, 6.4 or 6.5 of this standard. Precipitation aids derived from biological sources (such as plant proteins, albumin, casein, and gelatin) may also be used. In addition, non-biological precipitation aids, such as bentonite, silicon dioxide, etc., may be used if listed in Tables 6.3, 6.4 or 6.5. If listed in Tables 6.3, 6.4 or 6.5, precipitation aids shall meet any annotation restrictions therein.
Gelatine	Shall be organic, if commercially available. Gelatine may be sourced from: a) plants; or b) animals. If originating from cattle, gelatine shall be guaranteed free of Specified Risk Material (SRM).
Glucono delta lactone	Production by the oxidation of D-glucose with bromine water is prohibited.
Glycerides (mono- and diglycerides)	From organic sources if commercially available. For use in drum drying of products.
Glycerol (glycerine, glycerin)	Shall be from organic sources if commercially available. Shall be from vegetable oil or animal fat. Shall be produced using fermentation or by hydrolysis.
Gums	The following gums are permitted: arabic gum, carob bean gum (locust bean gum), gellan gum, guar gum, karaya gum, tragacanth gum, and xanthan gum. Shall be derived using substances listed in Table 6.3 Extraction solvents and precipitation aids. By exception, isopropyl alcohol may also be used to derive gums.

Table 6.3 — Ingredients classified as food additives	
Substance name(s)	Origin and usage
Kelp and kelp products	For use as a thickener and dietary supplement.
Lactic acid	
Lecithin	Shall be organic if commercially available. The bleached form is permitted if processed using food-grade hydrogen peroxide.
Magnesium carbonate	As an anti-caking agent in non-standardized dry mixes (e.g., seasonings) used in meat products with 70-95% organic content.
Magnesium chloride	Derived from seawater.
Magnesium stearate	For use as an anti-caking or releasing agent in products whose contents are ≥70% and <95% organic ingredients.
Magnesium sulphate	
Malic acid	
Meat curing agents	Extracts, juice, or cultured powder of celery or chard are permitted. Shall be organic if commercially available.
Ozone	
Pectin	High-methoxyl and low-methoxyl pectin sources are permitted.
Potassium acid tartrate (KC ₄ H ₅ O ₆)	From grapes/wine-making.
Potassium carbonates (mono- and bi-)	
Potassium chloride	From mined sources, such as sylvite, carnalite and potash. Refer to the potassium chloride listing in Table 6.4 regarding potassium chloride in vinegar and alcohol production.
Potassium citrate	
Potassium sulphite (bi-, meta- forms)	See Table 6.3 Sulphur dioxide, anhydrous (SO ₂).
Potassium phosphate (mono-, di-, and tribasic forms)	For use in products whose contents are ≥70% and <95% organic ingredients.

Table 6.3 — Ingredients classified as food additives	
Substance name(s)	Origin and usage
Potassium tartrate (K ₂ C ₄ H ₄ O ₆ . INS 336)	
Silicon dioxide (silica)	No restrictions on sources or uses except for maple (see subclause 7.2.12.6 of CAN/CGSB-32.310).
Sodium acid pyrophosphate	For use as a leavening agent.
Sodium bicarbonate (baking soda)	
Sodium carbonate (soda ash)	If biological or mined sources are not commercially available, synthetic forms are permitted.
Sodium chloride	
Sodium citrate	
Sodium hydroxide (lye or caustic soda)	
Sodium phosphates	For use in dairy products.
Sulphur dioxide, anhydrous (SO ₂)	Sulphites from SO₂-bottled gas; as liquid SO₂; or liberated from ignition of asbestos-free sulphur wicks are permitted. Sulphurous acid (aqueous sulphur dioxide)₁, Potassium bisulphite and potassium metabisulphite are also permitted. For use as a preservative in alcoholic beverages; minimal use of SO₂ is recommended. Maximum allowable levels of SO₂ in parts per million (ppm) are: a) in alcoholic beverages containing less than 5% residual sugar, 100 ppm and 30 ppm for total and free sulphites, respectively; b) in alcoholic beverages containing 5%-10% residual sugar, 150 ppm and 35 ppm for total and free sulphites, respectively; and c) in alcoholic beverages containing more than 10% residual sugar, 250 ppm and 45 ppm for total and free sulphites, respectively
Sulphurous acid	See Table 6.3 Sulphur dioxide, anhydrous (SO ₂).
Tartaric acid (C ₄ H ₆ O ₆ INS 334)	From lees. For beverages.
Tocopherols and mixed natural concentrates	Derived from vegetable oil when rosemary extract is not a suitable alternative.

Table 6.3 — Ingredients classified as food additives	
Substance name(s)	Origin and usage
Vegetable oils	Shall be organic if commercially available. Derived using substances listed in Table 6.3 Extraction solvents and precipitation aids. Maple syrup production—vegetable oils shall be organic and without allergenic potential.
Waxes, produce	Organic beeswax and organic carnauba wax may be used to wax produce. See subclause 9.2.1 d) of CAN/CGSB-32.310 if organic wax is commercially unavailable. For other wax uses, see Table 6.5 Waxes.
Yeast	If organic sources of yeast are not commercially available, these alternative sources of yeast may be used: a) autolysate; b) bakers' (may contain lecithin, as listed in Table 6.3); c) brewers'; d) nutritional; and e) torula. Growth on petrochemical substrate and sulphite waste liquor is prohibited. Yeast may be smoked or smoke-flavoured. When smoked, the smoke shall come from concentrated, condensed smoke from wood without additional ingredients (unless listed in Tables 6.3, 6.4 or 6.5).

Table 6.4 – Ingredients not classified as food additives	
Substance name(s)	Origin and usage
Algal oil	See Table 6.4 Long-chain polyunsaturated fatty acids (LCPUFAs).
Amino acids	May be used if legally permitted for infant formula and formulated liquid diets to achieve the levels of proteins legally required.
Carriers	Carriers of non-agricultural origin may be used if listed on Tables 6.3, 6.4 or 6.5. Non-organic carriers of agricultural origin (such as wheat starch) may be used if ingredients or processing aids containing organic carriers are not commercially available.
Collagen casings	Collagen shall originate from animal sources. If derived from cattle, collagen shall be guaranteed free of Specified Risk Material (SRM). Other ingredients (such as, but not limited to: cellulose, calcium coatings, glycerin, etc.) added to collagen casings during their manufacture that remain in the collagen casing when it is used shall respect the requirement provided in Clause 1.4 a) of CAN/CGSB-32.310. Permitted for poultry sausage.
Cultures	See Table 6.4 Microorganisms.
Fatty Acids	a) Omega-3 b) Omega-6. Shall be organic if commercially available. Permitted for infant formulas to achieve the levels of fatty acids legally permitted.
Flavours	Derived from biological sources using approved methods (see Table 12 B (1) and (2) Origin and mode of production of CAN/CGSB-32.310), and substances (see Table 6.3 Extraction solvents and precipitation aids). Includes alternative substances derived from biological sources that impart flavour including but not limited to acids and bases permitted by Table 12 B (3) in CAN/CGSB 32.310. May contain permitted carriers (see Table 6.3 and 6.4 Carriers).
Long-chain polyunsaturated fatty acids (LCPUFAs)	Docosahexaenoic acid (DHA)—from algal sources; arachidonic acid (ARA)—from fungal sources. Shall be organic if commercially available. Permitted for infant formulas to achieve the levels of fatty acids legally permitted.
Microorganisms	Microbial preparations may contain substrates made from agricultural substances or derived from biological substances such as milk, lactose, soy, agar, etc. May also contain permitted carriers (see Table 6.3 and 6.4 Carriers). Includes starter and dairy cultures and other preparations of microorganisms normally used in product processing.

Table 6.4 – Ingredients not classified as food additives	
Substance name(s)	Origin and usage
Nitrogen	Shall be food-grade quality.
Oxygen	
Potassium chloride	From mined sources such as sylvite, carnalite, and potash. May be used for all types of food production, including as food for yeast and bacteria in vinegar and alcohol production.
Potassium iodide	Shall be used when legally required or permitted.
Salt	Substances listed in Tables 6.3 or 6.4 may be added to mined or sea salt. See Table 6.3 Sodium chloride; Potassium chloride. See definition of Salt in clause 3 of CAN/CGSB-32.310.
Smoke flavour	See Table 6.3 Yeast.
Starch	From rice and waxy maize—Shall be derived using substances listed in Table 6.3 Extraction solvents and precipitation aids, where applicable. Starch shall not be modified by chemicals. Starch may be modified using physical or enzymatic methods. Cornstarch — If organic cornstarch is not commercially available, non-organic may be used and may contain substances that are plant-derived or listed in Tables 6.3, 6.4 or 6.5.
Vitamins and mineral nutrients	Shall be used if legally required (e.g., fluid milk, white flour, infant formula, meal replacement, etc.). The following non-dairy substitute products may be fortified on a voluntary basis, if legally permitted: plant-based beverages, products that resemble cheese, and butter substitutes. Ferrous sulphate—Shall be used if legally required and may be used, on a voluntary basis, if legally permitted.
Yeast	If organic sources of yeast are not commercially available, these alternative sources of yeast may be used: a) autolysate; b) bakers' (may contain lecithin, as listed in Table 6.3); c) brewers'; d) nutritional; and e) torula. Growth on petrochemical substrate and sulphite waste liquor is prohibited. Yeast may be smoked or smoke flavoured. When smoked, the smoke shall come from concentrated, condensed smoke from wood without additional ingredients (unless listed in Tables 6.3, 6.4 or 6.5).

Table 6.5 – Processing aids	
Substance name(s)	Origin and usage
<i>Acer pennsylvanicum</i>	As an anti-foaming agent in maple syrup production.
Alginic acid	
Antifoaming agents	Shall be composed of organic ingredients. May contain permitted substances (Tables 6.3 and 6.5).
Activated charcoal	Shall be of plant origin. Prohibited for use in the production of maple syrup.
Alcohol, ethyl (ethanol)	Shall be organic if commercially available.
Argon	
Ascorbic acid (vitamin C)	For use as an anti-browning agent prior to the extraction or concentration of fruit or vegetable juice.
Bentonite	
Calcium carbonate	
Calcium hydroxide (lime)	
Calcium sulphate (gypsum)	Sulphates produced using sulphuric acid are prohibited. May be used: a) as a carrier for cakes and biscuits; b) for soybean products; and c) for bakers' yeast.
Carbon dioxide (CO ₂)	
Carrageenan (Irish moss)	Derived using substances listed in Table 6.3 Extraction solvents and precipitation aids.
Casein	Shall be from organic sources if commercially available. Non-organic casein shall be derived from the milk of animals not treated with rBGH (recombinant bovine growth hormone).
Clay dust	As a filtering agent in maple syrup production.
Cellulose	As a filtering aid (non-chlorine bleached) and for use in inedible regenerative sausage casings. The TCF (Totally Chlorine Free) method of bleaching is permitted.

Table 6.5 – Processing aids	
Substance name(s)	Origin and usage
Chlorine compounds	See Table 7.3 Chlorine compounds.
Citric acid	From fruit and vegetable products or produced by microbial fermentation of carbohydrate substances.
Diatomaceous earth	As a food filtering aid or as a clarifying agent.
Enzymes	The following sources of enzymes are permitted: a) any preparations of enzymes normally used in food processing made from edible, non-toxic plants, non-pathogenic fungi or non-pathogenic bacteria; b) originating from animals—shall be organic if commercially available: rennet; catalase from bovine liver; animal lipase; pancreatin; pepsin; and trypsin. Animal-derived enzymes shall be free of Specified Risk Material (SRM); c) egg white lysozyme.
Gelatine	Shall be from organic sources if commercially available. Permitted sources are: a) plants; and b) animals. Animal gelatine may be used in preparations of canned meat or as a gelling agent for gummed candy. If originating from cattle, gelatine shall be guaranteed free of Specified Risk Material (SRM).
Hydrogen peroxide	Food-grade. For use as a bleaching agent for proteins and starches.
Isinglass	As a fining agent (fish-based).
Kaolin	As a clarifying agent.
Lactic acid	
Lecithin	Shall be organic if commercially available. Bleached form is permitted if processed using food-grade hydrogen peroxide.
Nitrogen	Shall be food-grade quality.
Oxygen	
Ozone	
Peracetic acid	
Perlite	For use as a filtering aid.
Potassium carbonate	

Table 6.5 – Processing aids	
Substance name(s)	Origin and usage
Potassium hydroxide (caustic potash)	For pH adjustment. Prohibited for use in lye peeling of fruits and vegetables.
Silicon dioxide (silica)	No restrictions on sources or uses except for maple (see subclause 7.2.12.6 of CAN/CGSB-32.310)
Sodium bicarbonate (baking soda)	
Sodium hydroxide (lye or caustic soda)	Prohibited for use in lye peeling of fruits and vegetables.
Talc	As a filtering agent.
Tannic acid	Shall be from an organic source if commercially available. Shall be derived using substances listed in Table 6.3 Extraction solvents and precipitation aids. Permitted as a filtration aid for wines.
Tartaric acid (C ₄ H ₆ O ₆ INS 334)	From lees. For beverages.
Vegetable oils	From organic sources if commercially available. Derived using substances listed in Table 6.3 Extraction solvents and precipitation aids. Maple syrup production—vegetable oils shall be organic and without allergenic potential.
Waxes	If organic waxes, such as beeswax or caruaba, are not commercially available, waxes derived from non-organic biological sources may be used. Edible wax cheese coatings that require a knife to cut or peel the wax away shall not contain paraffin, microcrystalline wax, non-listed preservatives, colours, bactericides or fungicides. Non-edible, fully removable (i.e., no knife is needed to cut or peel the wax away from the cheese), non-organic cheese wax may be used and shall be considered packaging per subclause 8.1.6 of CAN/CGSB-32.310. For waxes applied to produce — see Table 6.3 Waxes, produce.

7 Permitted substances lists for cleaners, disinfectants and sanitizers

7.1 Classification

7.1.1 The cleaners, disinfectants and sanitizers listed below are used to remove dirt, filth and foreign matter from organic products and organic product contact surfaces. These substances are also used to control microorganisms that may contaminate products. The use of these substances may require a removal event, as defined in Clause 3 of CAN/CGSB-32.310.

7.1.2 They are classified as follows:

- a) food-grade cleaners, disinfectants and sanitizers permitted without a mandatory removal event;
- b) cleaners, disinfectants and sanitizers permitted on organic product contact surfaces, for which a removal event is mandatory prior to an organic production load or run.

7.1.3 All non-organic ingredients listed on Safety Data Sheets (SDS) and active ingredients listed on the label of formulated cleaners, sanitizers and disinfectants shall be listed in Tables 7.3 or 7.4. Other non-organic ingredients used without a removal event shall be limited to substances listed in Table 7.3; water; compounds used to treat drinking water; and product stabilisers, such as HEDP (1-hydroxyethane 1,1-diphosphonic acid) or dipicolinic acid, whose function is to prevent the chemical degradation of substances listed in Table 7.3. Table 7.4 compliant products may contain non-active ingredients, including, but not limited to, dyes, fragrances, and chemical agents used to prevent physical separation of foams or emulsions.

7.1.4 Substances listed in Tables 7.3 and 7.4 are not subject to Clauses 1.4 or 1.5 of CAN/CGSB-32.310.

7.2 Clause 7 does not apply to maple syrup production. The operator shall meet the specific requirements for the different stages of production as described in Clause 7.2 of CAN/CGSB-32.310.

Table 7.3 — Food-grade cleaners, disinfectants and sanitizers permitted without a mandatory removal event	
Substance name(s)	Origin and usage
Acetic acid	May be used on organic product contact surfaces. May be used on organic products if produced by microbial fermentation of natural carbohydrate sources (sugars, wood, etc.). Example: apple cider vinegar. May be filtered or unfiltered.
Alcohol, ethyl (ethanol)	May be used on organic product contact surfaces.
Alcohol, isopropyl	May be used on organic product contact surfaces.
Alcohol, organic sources	
Ascorbic acid (vitamin C)	
Carbon dioxide (CO ₂)	
Chlorine compounds	The following chlorine compounds are permitted: a) calcium hypochlorite; b) chlorine dioxide; c) hypochlorous acid generated via electrolyzed water; d) sodium hypochlorite. Chlorine compounds may be used: a) for wash water in direct contact with crops or food; b) in flush water from cleaning irrigation systems, equipment, storage or transport units—application to crops or fields is permitted. Shall not exceed the maximum level of chlorine in potable water, as per the <i>Guidelines for Canadian Drinking Water Quality</i> published by Health Canada, as well as any applicable provincial requirements.
Citric acid	
Glycerol (glycerine, glycerin)	May be used on organic product contact surfaces, including hands. May be used on organic products if sourced from vegetable oil or animal fat; and produced using fermentation or by hydrolysis.
Hydrogen peroxide	
Lactic acid	
Magnesium sulphate	
Microorganisms	Living or dead biological organisms, such as viruses, phages, bacteria, protozoa, fungi, etc.

Table 7.3 — Food-grade cleaners, disinfectants and sanitizers permitted without a mandatory removal event	
Substance name(s)	Origin and usage
Non-ionizing radiation	May be used to manage pest loads on product and product contact surfaces, including facilities, equipment and empty hives. Non-ionizing radiation is defined in Clause 3 of CAN/CGSB-32.310 in the Terms and Definitions.
Ozone	
Peracetic (peroxyacetic) acid	On food and plants: peracetic acid may be used in wash or rinse water. Peracetic acid may also be used on food contact surfaces.
Potassium bicarbonate	On organic product contact surfaces.
Sodium bicarbonate (baking soda)	
Sodium carbonate (soda ash)	Biological or mined sources. See Table 7.4 Sodium carbonate (soda ash), synthetic.
Sodium citrate	
Sodium hydroxide (lye or caustic soda)	
Surfactants, biodegradable	Surfactants either stand-alone or when formulated with substances listed on Table 7.3 shall be readily, ultimately or inherently biodegradable as per the Organisation for Economic Co-operation and Development (OECD) definitions. Permitted for egg washing.
Vinegar	

Table 7.4 – Cleaners, disinfectants and sanitizers permitted on organic product contact surfaces for which a removal event is mandatory	
Substance name(s)	Origin and usage
Chlorine compounds	The following chlorine compounds are permitted up to maximum label rates: - calcium hypochlorite; - chlorine dioxide; - hypochlorous acid generated via electrolyzed water; and/or - sodium hypochlorite.
Detergents	Detergent products shall be: - readily, ultimately or inherently biodegradable as per the Organisation for Economic Co-operation and Development (OECD) definitions; or - composed of substances listed in Tables 7.3 or 7.4 (if surfactants are added, the surfactants will meet the OECD definition of biodegradable); or - readily eliminated during wastewater treatment such that harm to the environment is minimized
Essential oils	Derived from plant sources using substances in Table 6.3 Extraction solvents and precipitation aids. May contain permitted carriers (see Table 6.3 and 6.4 Carriers).
Iodine	Shall be non-elemental. Shall not exceed 5% solution by volume (example: iodophors).
Lime	All forms of lime, including calcium carbonate, calcium hydroxide and calcium oxide.
Methanesulphonic acid (MSA)	
Octanoic acid (caprylic acid)	
Peroxyoctanoic acid (POOA)	
Phosphoric acid	On dairy equipment.
Potassium carbonate	Documentation shall demonstrate that effluent discharge was neutralized to minimize negative environmental impact.
Potassium hydroxide (caustic potash)	
Potassium permanganate	Not to exceed 1% solution by volume.
Saponin	Derived from plants such as <i>Yucca schidigera</i> and <i>Quillaja saponaria</i> .

Table 7.4 – Cleaners, disinfectants and sanitizers permitted on organic product contact surfaces for which a removal event is mandatory	
Substance name(s)	Origin and usage
Soap-based algicide (demossers)	
Soaps	Soaps shall consist of fatty acids derived from animal or vegetable oils.
Sodium borate	
Sodium carbonate (soda ash), synthetic	
Sodium percarbonate	
Sodium silicate	In detergents.
Surfactants	Surfactants either stand alone or when formulated with substances listed in Tables 7.3 or 7.4 to create cleaning products including detergents, soaps, degreasers, and disinfectants, shall be readily, ultimately or inherently biodegradable as per the Organisation for Economic Co-operation and Development (OECD) definitions, or readily eliminated during wastewater treatment such that harm to the environment is minimized.
Surfactants, biodegradable	Surfactants, used alone or added to substances authorized in Table 7.3, must be ultimately or intrinsically biodegradable according to the definitions of the Organisation for Economic Co-operation and Development (OECD). Egg washing permit.
Wetting agents	Substances listed in Table 4.2 or 7.3, including saponins and microbial wetting agents.

8 Facility management substances

8.1 Classification

8.1.1 Facility management substances are classified according to the following uses and applications:

- Substances listed in Table 8.2 are pesticides (See definition of Pesticides in clause 3 of CAN/CGSB-32.310) that may be used in and around facilities, as annotated and as specified in subclause 8.3.2 of CAN/CGSB-32.310. These substances may also be used in traps, lures and as repellents, unless indicated otherwise within substance annotations.
- Substances listed in Table 8.3 may be used in facilities as annotated, to accomplish a physiological effect post-harvest.
- Substances listed in Tables 8.2 and 8.3 are not subject to Clauses 1.4 and 1.5 of CAN/CGSB-32.310.

Table 8.2 – Facility pest management substances	
Substance name(s)	Origin and usage
Ammonium carbonate	As an attractant in insect traps.
Baits for rodent control	Non-poisonous baits are allowed for use with rodent control devices in locations where there is no potential for contamination of organic products, crops, or fields with prohibited substances.
Boric acid	May be used for structural pest control (example: for ants). Direct contact with organic products is prohibited.
Carbon dioxide (CO ₂)	For controlled atmosphere storage and for storage pest control.
Cholecalciferol (vitamin D ₃)	Prohibited inside organic food processing and food storage facilities.
Diatomaceous earth	Direct contact with organic products is permitted.
Formulants	May only be used with substances listed in Table 8.3. Only formulants classified as List 4A or 4B by the Pest Management Regulatory Agency (PMRA) or derived from biological or mineral sources may be used with substances in Table 8.2. Formulants classified as List 3 by PMRA may be used with passive pheromone dispensers. Formulants classified as List 4A, 4B or 3 by PMRA are not subject to Clauses 1.4 or 1.5 of CAN/CGSB-32.310. Formulants classified as List 1 or 2 by PMRA are prohibited.
Neem oil	
Pheromones and other semiochemicals	For pest control. Use in pheromone traps or passive dispensers.
Pyrethrins	Without piperonyl butoxide. Direct contact with organic products is prohibited.
Repellents	Shall be derived from a biological source, such as sterilized blood meal, rotten eggs, hair or predator scents. May contain other biological compounds and PMRA 4a- or 4b-listed formulants.
Soaps, ammonium	As a large animal repellent. Direct contact with organic products is prohibited.

Table 8.3 – Post-harvest substances	
Substance name(s)	Origin and usage
Carbon dioxide (CO ₂)	For controlled atmosphere storage.
Botanical oils	Oils from the Lamiaceae (mint family), Apiaceae/Umbelliferae (celery family) and Myrtaceae (clove family) may be used as post-harvest sprout inhibitors.
Ethylene	For post-harvest ripening of tropical fruit and degreening of citrus and to control sprouting of potatoes post-harvest in holding bins.
Formulants	Formulants may only be used with substances listed in Table 8.3. Only formulants classified as List 4A or 4B by the Pest Management Regulatory Agency (PMRA) or are non-synthetic may be used with substances in Table 8.3. Formulants classified as List 3 by PMRA may be used with passive pheromone dispensers. Formulants classified as List 4A, 4B or 3 by PMRA are not subject to 1.4 or 1.5 of CAN/CGSB-32.310. Formulants classified as List 1 or 2 by PMRA are prohibited.
Nitrogen	For controlled atmosphere storage.
Oxygen	

Annex A

(informative)

Alphabetized list of substances

Table A.1 – List of permitted substances in alphabetical order	
Substance name(s)	Referenced in table
<i>Acer pennsylvanicum</i>	6.5
Acetic acid	4.2, 7.3
Acetylsalicylic acid	5.3
Acids	5.3, 6.3, 6.5
Activated charcoal	5.3, 6.3, 6.5
Adhesives for sticky traps and barriers	4.2
Agar	4.2, 6.3
Alcohol, ethyl (ethanol)	5.3, 6.5, 7.3
Alcohol, isopropyl	5.3, 7.3
Alcohol, organic sources	7.3
Alfalfa meal and pellets	4.2
Algae	4.2
Alginates	6.3
Amino acids	5.2
Ammonium bicarbonate	6.3
Ammonium carbonate	4.2, 6.3, 8.2
Animal manure, unprocessed	4.2
Animal manure, dried	4.2
Antibiotics	5.3
Antibiotics, oxytetracycline	5.3
Anti-inflammatories	5.3
Antioxidants	5.2
Aquatic plant extracts	4.2
Argon	6.3, 6.5
Ascorbic acid (vitamin C)	4.2, 6.3, 6.5, 7.3
Ash	4.2
Baits for rodent traps	4.2, 8.2
Bentonite	4.2, 6.5
Biodegradable plant containers	4.2
Biochar	4.2
Biodynamic preparations for compost, soil and plants	4.2
Biologics	5.3
Blood meal	4.2

Table A.1 – List of permitted substances in alphabetical order	
Substance name(s)	Referenced in table
Bone meal	4.2
Borate (boric acid)	4.2
Boric acid	8.3
Boron	4.2
Botanical compounds	5.3
Botanical oils	8.3
Botanical pesticides	4.2
Brewers' grains and solubles	4.2
Calcium	4.2
Calcium borogluconate	5.3
Calcium carbonate	6.3, 6.5
Calcium chloride	4.2, 6.3
Calcium citrate	6.3
Calcium hydroxide (lime)	6.5
Calcium lignin sulphonate	4.2
Calcium phosphates (mono-, di-, and tri- basic forms)	6.3
Calcium polysulphide	4.2
Calcium sulphate (gypsum)	4.2, 6.3, 6.5
Cannery wastes	4.2
Carbon dioxide (CO ₂)	4.2, 6.3, 6.5, 7.3, 8.2, 8.3
Cardboard	4.2
Carrageenan (Irish moss)	6.3, 6.5
Carriers	6.3, 6.4
Casein	6.5
Cellulose	6.5
Chelates	4.2
Chitosan	4.2
Chlorine compounds	7.3, 7.4
Chlorhexidine	5.3
Cholecalciferol (vitamin D ₃)	4.2, 8.2
Citric acid	4.2, 6.3, 6.5, 7.3
Cobalt	4.2
Coir (coconut fiber)	4.2
Clay	4.2
Clay dust	6.5
Collagen casings	6.4
Colostrum whey	5.3

Table A.1 – List of permitted substances in alphabetical order	
Substance name(s)	Referenced in table
Colostrum	5.3
Colouring agents	5.2, 6.3
Compost	4.2
Compost feedstocks	4.2
Compost from off-farm sources	4.2
Compost produced on the farm	4.2
Compost tea	4.2
Condensed molasses fermentation solubles (Vinasse)	4.2
Copper (plant nutrition)	4.2
Copper (crop production aid)	4.2
Copper sulphate	5.3
Cultures	6.4
Detergents	7.4
Diatomaceous earth	4.2, 5.2, 5.3, 6.5, 8.2
Dibasic ammonium phosphate (diammonium phosphate, DAP)	6.3
Digestate, anaerobic	4.2
Distillers' grains and solubles	4.2
Dormant oils	4.2
Dust suppressants	4.2
Electrolytes	5.3
Energy feeds and forage concentrates (grains) and roughages (hay, silage, fodder, straw)	5.2
Enzymes	4.2, 5.2, 6.3, 6.5
Essential oils	7.4
Ethylene	8.3
Extractants	4.2
Extraction solvents and precipitation aids	6.3
Feather meal	4.2
Ferric phosphate (iron ortho-phosphate, iron phosphate)	4.2
Fibre row covers	4.2
Fish meal	5.2
Fish products	4.2
Flavours	5.2, 6.4
Food waste	5.2
Formic acid	5.3
Formulants used in soil amendments	4.2
Formulants used in crop production aids	4.2

Table A.1 – List of permitted substances in alphabetical order	
Substance name(s)	Referenced in table
Formulants (inerts, excipients)	5.3, 8.2, 8.3
Frass	4.2
Gelatine	6.3, 6.5
Glucono delta lactone	6.3
Glucose	5.3
Glycerides (mono and diglycerides)	6.3
Glycerol (glycerine, glycerin)	5.3, 6.3, 7.3
Growth regulators for plants	4.2
Gums	6.3
Hay or silage preservation products	5.2
Homeopathy and biotherapies	5.3
Homeopathic preparations	4.2
Honey	5.3
Hormones	4.2
Humates, humic acid and fulvic acid	4.2
Hydrated lime (calcium hydroxide)	4.2
Hydrogen peroxide	4.2, 5.3, 6.5, 7.3, 7.4
Hydrolyzed proteins of animal origin	4.2
Hydrolyzed proteins of plant origin	4.2
Inoculants	4.2
Invertebrates	4.2
Iodine	5.3, 7.4
Iron	4.2
Iron products	5.3
Isinglass	6.5
Kaolin	6.5
Kaolin clay	4.2
Kelp and kelp products	4.2, 6.3
Lactic acid	7.3
Lanolin	5.3
Leaf mould	4.2
Lecithin	6.3, 6.5
Lignin and lignin sulphonates (lignosulphonates)	4.2
Lime	4.2, 7.4
Lime sulphur (calcium polysulphide)	4.2
Limestone	4.2
Local anesthetics	5.3

Table A.1 – List of permitted substances in alphabetical order	
Substance name(s)	Referenced in table
Magnesium	4.2
Magnesium carbonate	6.3
Magnesium chloride	6.3
Magnesium stearate	6.3
Magnesium sulphate	5.3, 6.3, 7.3
Malic acid	6.3
Mammalian or avian slaughter by-products	5.2
Manure, non-organic manure source	4.2
Manure or other animal waste	5.2
Meat curing agents	6.3
Meat meal	4.2
Methanesulphonic acid (MSA)	7.4
Microbial extracts	4.2
Microbial fertilizers	4.2
Microorganisms	6.4, 7.3
Microorganisms and microbial products	4.2
Microorganisms and yeasts	5.2, 5.3
Milk and milk by-products	4.2
Milk replacer	5.2
Mined minerals, unprocessed	4.2
Mineral oil	5.3
Minerals, trace minerals, elements	5.2, 5.3
Molasses	4.2, 5.2
Molybdenum	4.2
Mulches	4.2
Mushroom compost	4.2
Neem oil	8.2
Nitrogen	6.4, 6.5, 8.3
Nitrogen gas	4.2
Non-ionizing radiation	4.2, 7.3
Octanoic acid (caprylic acid)	7.4
Oilseed meals	4.2
Oxalic acid	5.3
Oxygen	4.2, 6.4, 6.5, 8.3
Oxytocin	5.3
Ozonated water	4.2

Table A.1 – List of permitted substances in alphabetical order	
Substance name(s)	Referenced in table
Ozone	6.3, 6.5, 7.3
Paraffin	5.3
Parasitocides and anti-microbials	5.3
Peat moss	4.2
Pectin	6.3
Peracetic (peroxyacetic) acid	4.2, 6.5, 7.3
Perlite	6.5
Peroxyoctanoic acid (POOA)	7.4
Pheromones and other semiochemicals	4.2, 8.2
Phosphate rock	4.2
Phosphoric acid	7.4
Physical teat seals	5.3
Phytase	5.2
Plant extracts, oils and preparations	4.2
Plant material	4.2
Plant oils	5.3
Plant protectants	4.2
Plastic for row covers and solarization	4.2
Polyoxin D zinc salt	4.2
Pomaces	4.2
Potassium	4.2
Potassium acid tartrate ($\text{KC}_4\text{H}_5\text{O}_6$)	6.3
Potassium bicarbonate	4.2, 7.3
Potassium carbonate	6.5, 7.4
Potassium carbonates (mono- and bi-)	6.3
Potassium chloride	6.3, 6.4
Potassium citrate	6.3
Potassium hydroxide (caustic potash)	6.5, 7.4
Potassium iodide	6.4
Potassium sulphite (bi-, meta-.forms)	6.3
Potassium permanganate	7.4
Potassium phosphate (mono-, di-, and tribasic forms)	6.3
Potassium tartrate ($\text{K}_2\text{C}_4\text{H}_4\text{O}_6$ INS 336)	6.3
Prebiotics	5.3
Pre-mixes	5.2
Probiotics	5.2, 5.3

Table A.1 – List of permitted substances in alphabetical order	
Substance name(s)	Referenced in table
Propylene glycol	5.3
Protein feeds	5.2
Pyrethrins	8.2
Pyrethrum	4.2
Quicklime (calcium oxide)	4.2
Repellents	4.2, 8.2
Salt	4.2, 6.4
Saponin	7.4
Seaweed and seaweed products	4.2
Seaweed meal	5.2
Sedatives	5.3
Seed lubricant	4.2
Seed treatments	4.2
Selenium	4.2
Selenium products	5.3
Shell from aquatic animals	4.2
Silicic acids, including potassium and sodium salts of silicic acid	4.2
Silicon, silica (silicon dioxide) and silicates	6.3, 6.5
Smoke flavour	6.4
Soap-based algicide (demossers)	7.4
Soaps	4.2, 7.4
Soaps, ammonium	4.2, 8.2
Sodium acid pyrophosphate	6.3
Sodium bicarbonate	4.2, 6.3, 6.5, 7.3
Sodium borate	7.4
Sodium carbonate (soda ash)	6.3, 7.3
Sodium carbonate (soda ash), synthetic	7.4
Sodium chloride	6.3
Sodium citrate	6.3, 7.3
Sodium hydroxide (lye or caustic soda)	5.3, 6.3, 6.5, 7.3
Sodium percarbonate	7.4
Sodium phosphates	6.3
Sodium silicate	7.4
Soil	4.2
Sphagnum moss	4.2
Starch	6.4

Table A.1 – List of permitted substances in alphabetical order	
Substance name(s)	Referenced in table
Struvite (magnesium ammonium phosphate)	4.2
Sugar	4.2
Sulphur	5.3
Sulphur dioxide, anhydrous (SO ₂)	6.3
Sulphurous acid	6.3
Sulphur smoke bombs	4.2
Sulphur, elemental	4.2
Summer oils	4.2
Surfactants	4.2, 7.4
Talc	6.5
Tannic acid	6.5
Tartaric acid (C ₄ H ₆ O ₆ INS 334)	6.3, 6.5
Teat dips and udder wash	5.3
Thymol	5.3
Tocopherols and mixed natural concentrates	6.3
Transplant and potting media	4.2
Treated seed	4.2
Tree seals	4.2
Vaccines	5.3
Vegetable oils	6.3, 6.5
Vermicasts	4.2
Vermiculite	4.2
Vinegar (acetic acid)	4.2, 7.3
Vitamins	4.2, 5.2, 5.3
Vitamins and mineral nutrients	6.4
Water	4.2
Water, recycled	4.2
Waxes	6.5
Waxes, produce	6.3
Wetting agents	4.2, 7.4
Wood ash	4.2
Worm castings	4.2
Yeast	4.2, 6.3, 6.4
Zinc	4.2