



Government  
of Canada

Gouvernement  
du Canada

Canadian General  
Standards Board

Office des normes  
générales du Canada

**CAN/CGSB-32.311-2006**

Supersedes part of CAN/CGSB-32.310-99

# Organic Production Systems Permitted Substances Lists

ICS 67.040

**National Standard of Canada**

**Canada**

*Experience and excellence*  
*Expérience et excellence*



The CANADIAN GENERAL STANDARDS BOARD (CGSB), under whose auspices this National Standard of Canada has been developed is a government agency within Public Works and Government Services Canada. CGSB is engaged in the production of voluntary standards in a wide range of subject areas through the media of standards committees and the consensus process. The standards committees are composed of representatives of relevant interests including producers, consumers and other users, retailers, governments, educational institutions, technical, professional and trade societies, and research and testing organizations. Any given standard is developed on the consensus of views expressed by such representatives.

CGSB has been accredited by the Standards Council of Canada as a national standards-development organization. The standards that it develops and offers as National Standards of Canada conform to the criteria and procedures established for this purpose by the Standards Council of Canada. In addition to standards it publishes as national standards, CGSB produces standards to meet particular needs, in response to requests from a variety of sources in both the public and private sectors. Both CGSB standards and CGSB national standards are developed in conformance with the policies described in the CGSB Policy Manual for the Development and Review of Standards.

CGSB standards are subject to review and revision to ensure that they keep abreast of technological progress. Suggestions for their improvement, which are always welcome, should be brought to the notice of the standards committees concerned. Changes to standards are issued either as separate amendment sheets or in new editions of standards.

An up-to-date listing of CGSB standards, including details on latest issues and amendments, and ordering instructions, is found in the CGSB Catalogue, which is published annually and is available without charge upon request. An electronic version, ECAT, is also available. More information is available about CGSB products and services at our Web site — [www.ongc-cgsb.gc.ca](http://www.ongc-cgsb.gc.ca).

Although the intended primary application of this standard is stated in its Scope, it is important to note that it remains the responsibility of the users of the standard to judge its suitability for their particular purpose.

The testing and evaluation of a product against this standard may require the use of materials and/or equipment that could be hazardous. This document does not purport to address all the safety aspects associated with its use. Anyone using this standard has the responsibility to consult the appropriate authorities and to establish appropriate health and safety practices in conjunction with any applicable regulatory requirements prior to its use. CGSB neither assumes nor accepts any responsibility for any injury or damage that may occur during or as the result of tests, wherever performed.

Attention is drawn to the possibility that some of the elements of this Canadian standard may be the subject of patent rights. CGSB shall not be held responsible for identifying any or all such patent rights. Users of this standard are expressly advised that determination of the validity of any such patent rights are entirely their own responsibility.

Further information on CGSB and its services and standards may be obtained from:

The Manager  
Strategic Standardization Division  
Canadian General Standards Board  
Gatineau, Canada  
K1A 1G6

The STANDARDS COUNCIL OF CANADA is the co-ordinating body of the National Standards System, a federation of independent, autonomous organizations working towards the further development and improvement of voluntary standardization in the national interest.

The principal objectives of the Council are to foster and promote voluntary standardization as a means of advancing the national economy, benefiting the health, safety and welfare of the public, assisting and protecting the consumer, facilitating domestic and international trade, and furthering international co-operation in the field of standards.

A National Standard of Canada is a standard which has been approved by the Standards Council of Canada and one which reflects a reasonable agreement among the views of a number of capable individuals whose collective interests provide, to the greatest practicable extent, a balance of representation of producers, users, consumers and others with relevant interests, as may be appropriate to the subject in hand. It normally is a standard that is capable of making a significant and timely contribution to the national interest.

Approval of a standard as a National Standard of Canada indicates that a standard conforms to the criteria and procedures established by the Standards Council of Canada. Approval does not refer to the technical content of the standard; this remains the continuing responsibility of the accredited standards-development organization.

Those who have a need to apply standards are encouraged to use National Standards of Canada whenever practicable. These standards are subject to periodic review; therefore, users are cautioned to obtain the latest edition from the organization preparing the standard.

The responsibility for approving National Standards of Canada rests with the:

Standards Council of Canada  
270 Albert Street  
Suite 200  
Ottawa, Ontario  
K1P 6N7

## How to order **CGSB** Publications:

- by telephone — (819) 956-0425 *or*  
— 1-800-665-2472
- by fax — (819) 956-5644
- by mail — CGSB Sales Centre  
Gatineau, Canada  
K1A 1G6
- in person — Place du Portage  
Phase III, 6B1  
11 Laurier Street  
Gatineau, Quebec
- by email — [ncr.cgsb-ongc@pwgsc.gc.ca](mailto:ncr.cgsb-ongc@pwgsc.gc.ca)
- on the Web — [www.ongc-cgsb.gc.ca](http://www.ongc-cgsb.gc.ca)

**ORGANIC PRODUCTION SYSTEMS  
PERMITTED SUBSTANCES LISTS**

**Prepared by the**

Canadian General Standards Board 

**Approved by the**

Standards Council of Canada 

Published September 2006 by the  
**Canadian General Standards Board**  
Gatineau, Canada K1A 1G6

© HER MAJESTY THE QUEEN IN RIGHT OF CANADA,  
as represented by the Minister of Public Works and Government Services,  
the Minister responsible for the Canadian General Standards Board, (2006).

No part of this publication may be reproduced in any form without the prior permission of the publisher.

**CANADIAN GENERAL STANDARDS BOARD**  
**COMMITTEE ON ORGANIC AGRICULTURE**

*(Membership at date of approval)*

Lynch, G.	<i>Chairperson</i>	Consultant
Andres, L.		Dairy Farmers of Canada
Barry, C.		Canadian Food Inspection Agency
Beauchemin, R.		Table filière biologique du Québec
Bouchard, G.		Fédération d'agriculture biologique du Québec
Bouffard, D.-P.		Conseil des appellations agro-alimentaires du Québec
Boyle, D.		Pro Organics Marketing Inc.
Buchler, H.		Park Hill Vineyards
Bushnell, L.		Consumers Council of Canada
Calhoun, R.		Canada's Association for The Fifty-Plus
Chorniak, M.		Food Processors of Canada
Chrapko, V.		Organic Crop Improvement Association — Alberta, Chapter 1
Cruikshank, J.		Canadian Council of Grocery Distributors
De Valk, R.		Further Poultry Processors Association of Canada
Edwards, L.		Organic Producers Association of Cawston and Keromeos
Eisen, R.		Rare Enterprises
Fréchette, J.		Organisme de certification Québec Vrai
Gibson, J.		Independent Organic Inspectors Association — Canadian Committee
Graham, R.		Sunopta Organics
Gravel, F.		Garantie Bio-Ecocert
Hamblin, G.		Hamblin's Organic Farm Milling
Hamm, J.W.		OCPP/Pro-Cert Canada Inc.
Hennigar, L.		Canadian Federation of Agriculture
Hymers, K.		Canadian Organic Livestock Association Inc.
Kneen, C.		BC Food Systems Network Society
Leclair, M.		Agriculture and Agri-Food Canada
Lynch, D.		Organic Agriculture Centre of Canada
Macey, A.		Canadian Organic Growers National Office
Miller, D.		Organic Crop Improvement Association — Saskatchewan, Chapter 8
Nimmo, T.L.		Organic Food Conferences Canada
Nodge, G.		Canadian Organic Certification Cooperative, Ltd.
Phillips, C.		Atlantic Canadian Organic Regional Network
Preater, R.		Canadian Seed Growers' Association
Redden, J.		Viriditas Herbal Products
Scott, A.		Organic Producers Association of Manitoba Cooperative Inc.
Semmelhaack, R.		Organic Crop Improvement Association — Quebec
Sinkevich, Y.		Peace River Organic Producers Association
Smillie, J.		Quality Assurance International — Canada
Taylor, A.		Saskatchewan Organic Directorate
Wells, S.		Organic Trade Association
Forget, M.	<i>Secretary</i>	Canadian General Standards Board

*Acknowledgment is made for the translation of this National Standard of Canada by the Translation Bureau of Public Works and Government Services Canada.*

## CANADIAN GENERAL STANDARDS BOARD

ORGANIC PRODUCTION SYSTEMS  
PERMITTED SUBSTANCES LISTS

## TABLE OF CONTENTS

	<b>Page</b>
<b>1. SCOPE</b> .....	1
<b>2. REFERENCED PUBLICATIONS</b> .....	1
<b>3. REQUIREMENTS FOR ADDING OR AMENDING SUBSTANCES IN THE LISTS</b> .....	1
<b>4. PERMITTED SUBSTANCES LISTS FOR CROP PRODUCTION</b> .....	1
4.1 <b>Classification</b> .....	1
4.2 <b>Soil Amendments</b> .....	2
4.3 <b>Crop Production Aids and Materials</b> .....	8
4.4 <b>Weed Management</b> .....	13
<b>5. PERMITTED SUBSTANCES LISTS FOR LIVESTOCK PRODUCTION</b> .....	13
5.1 <b>Classification</b> .....	13
5.2 <b>Feed, Feed Additives and Feed Supplements</b> .....	14
5.3 <b>Health Care Products</b> .....	14
5.4 <b>Production Aids</b> .....	16
<b>6. PERMITTED SUBSTANCES LISTS FOR PROCESSING AND SANITATION</b> .....	16
6.1 <b>Classification</b> .....	16
6.2 <b>Other Categories of Substances</b> .....	16
6.3 <b>Organic Ingredients</b> .....	17
6.4 <b>Non-organic Ingredients</b> .....	17
6.5 <b>With Organic Ingredients</b> .....	19
6.6 <b>Processing Aids</b> .....	20
6.7 <b>Cleaners, Disinfectants and Sanitizers</b> .....	21
6.8 <b>Pest Control Substances</b> .....	21
<b>7. NOTES</b> .....	22
7.1 <b>Sources of Referenced Publications</b> .....	22
<b>APPENDIX A ORGANIC PRODUCTION SYSTEMS REVIEW RECORD FOR GENERIC SUBSTANCES ADDED OR AMENDED</b> .....	A1

## CANADIAN GENERAL STANDARDS BOARD

ORGANIC PRODUCTION SYSTEMS  
PERMITTED SUBSTANCES LISTS**1. SCOPE**

- 1.1. This standard<sup>1</sup> provides additional information to CAN/CGSB-32.310, *Organic Production Systems — General Principles and Management Standards*. It consists of requirements for adding or amending permitted substances in the following lists, organized by category of use.
- 1.2. 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. REFERENCED PUBLICATIONS**

- 2.1. The following publications are referenced in this standard:

## 2.1.1 Canadian General Standards Board (CGSB)

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

## 2.1.2 Health Canada

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

## 2.1.3 Canadian Food Inspection Agency (CFIA)

Feeds Regulations, 1983 (SOR/83-593).

**3. REQUIREMENTS FOR ADDING OR AMENDING SUBSTANCES IN THE LISTS**

- 3.1. Section 11 of CAN/CGSB-32.310 outlines the requirements for adding or amending substances in the lists.

**4. PERMITTED SUBSTANCES LISTS FOR CROP PRODUCTION**

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

- a. **Soil Amendments** are substances applied to the soil to improve fertility and tilth and to correct soil problems. Fertilizers, plant foods and soil amendments are primarily used for their plant nutrient content and may be applied to the soil or to the foliage of plants.
- b. **Crop Production Aids and Materials** are substances used in conjunction with other substances, which may or may not be directly applied to the crop or soil, or substances used to control diseases or pests. Examples include
  - i. adjuvants, equipment cleaners, insect traps and plastic mulch
  - ii. vertebrate animal pest management substances
  - iii. plant disease management substances
  - iv. insect pest management (invertebrates), mites, molluscs and crustacean substances
  - v. nematode management substances.
- c. **Weed Management**

<sup>1</sup> References throughout this document to “this standard” refer to CAN/CGSB-32.311, Organic Production Systems — Permitted Substances Lists.

## Soil Amendments

Common Name(s)	Origin and Usage
Agar	For use in initial mushroom spawn production.
Alfalfa meal and pellets	Use organic alfalfa unless commercially unavailable. Ensure non-organic alfalfa is not a product of genetic engineering.
Algae	<i>See</i> Aquatic plant products.
Amino acids, non-synthetic	Amino acids produced by plants, animals and micro-organisms that are not from genetic engineering and that are extracted or isolated by hydrolysis or by physical or other non-chemical means are considered non-synthetic. Non-synthetic amino acids may be used as plant growth regulators or chelating agents.
Animal manure	<i>See</i> sections 5 and 6 of CAN/CGSB-32.310.
Animal manure, processed	Heat-treated, mechanical and physical processed manures may be acceptable but shall be reviewed on a case-by-case basis.
Aquatic plant products	Natural (non-synthetic) extracts are allowed. Extraction with synthetic solvents is prohibited except for potassium hydroxide or sodium hydroxide, provided the amount of solvent used does not exceed the amount necessary for extraction. Of the two products, potassium hydroxide is the preferred choice; the manufacturer shall prove the need to use sodium hydroxide. Aquatic plant products are prohibited if they contain other synthetic preservatives, such as formaldehyde, or are fortified with other prohibited plant nutrients.
Ash	Ash from plant and animal sources only. Ash from burning minerals, manure or prohibited substances is prohibited. Wood-stove ash is allowed only if not contaminated with coloured paper, plastics or other synthetic substances. Document non-contamination of ash obtained from off-farm sources including arsenic, cadmium, chromium and lead. (Manure ash is prohibited because burning manure wastes organic matter and nutrients.)
Basalt	Mined or quarried volcanic rock minerals.
Bentonite	<i>See</i> Mined minerals and unprocessed mined minerals.
Biodynamic preparations for soil and plants	Horn manure spray (Prep 500) or horn silica (Prep 501). <i>See also</i> par. 4.3 for other biodynamic preparations.
Biotite (iron, magnesium or aluminum silicates)	
Blood meal	Allowed only if sterilized.
Bone meal	Permitted only if guaranteed free of specific risk materials.
Borate	Shall only be used for a documented deficiency relative to the type of crop. <i>See also</i> Boron products.
Borax (sodium tetraborate)	<i>See</i> Boron products.
Boron products	The following soluble boron products may be used: sodium tetraborate (borax and anhydrous) and sodium octaborate. Shall only be used for a documented deficiency relative to the type of crop. <i>See also</i> Trace elements (micronutrients) for documentation requirements.
Calcium chloride	Natural sources and food-grade quality only. Shall be used to adjust nutrient deficiencies and physiological disorders.
Calcium, natural sources	Sources include shells from aquatic animals.

Common Name(s)	Origin and Usage
Calcium sulphate (gypsum)	<i>See</i> Gypsum (calcium sulphate).
Cannery wastes	Use only if certified as organically grown or documented to be uncontaminated by pesticides or thoroughly composted before use.
Cardboard	Cardboard that is not waxed or impregnated with fungicide or substances not on these lists; may be used as mulch or compost feedstock.
Cardboard, waxed	Paraffin contained in waxed cardboard used as a mulch or compost ingredient shall not exceed 0.75% by mass of the total feedstock.
Clay	Bentonite, perlite and zeolite as a soil amendment or seed pellet additive. These are also listed individually in this standard. <i>See also</i> Mined minerals and unprocessed mined minerals.
Compost	<p>Composting refers to the carefully managed process whereby organic substances are thermophilically digested. In order to stabilize the nutrients in compost effectively, reduce some pesticide residues, and kill weed seeds and pathogens, aerobic compost piles shall reach a temperature of 55 to 60°C (130 to 140°F) for a period of several days and then finish decomposing for about six weeks. During the decomposition period, compost should remain moist and aerobic but never water-logged.</p> <p>Written documentation of the source of off-farm substances is required. Organic waste substances derived from industrial processing (e.g. abattoir waste, yeast fermentation waste, whey, hatchery waste, fish-farm waste, mushroom compost, and paper and wood products) are restricted products. Documentation, appropriate laboratory analysis for the absence of contamination by substances prohibited in this standard, or both shall be required.</p> <p>Acceptable feedstocks include animal manure, by-products of the processing of agricultural products, and source-separated yard debris. The following are prohibited in compost: sewage sludge, synthetically fortified compost starter, glossy paper and coloured ink. Paraffin from waxed cardboard cannot exceed 0.75% of total feedstock by mass.</p> <p><i>See</i> Microbial products for information on compost starters.</p> <p>Spent mushroom and vermiculite substrate: Natural substances or those derived from natural substances, without the addition of chemically synthesized substances or chemical treatment.</p> <p>Composted animal excrements, including poultry: Natural substances or those derived from natural substances, without the addition of chemically synthesized substances or chemical treatment.</p> <p>Compost tea: Compost shall be made from substances that meet compost standards. <i>See</i> definition for <i>Compost Tea</i> in section 3 of CAN/CGSB-32.310.</p> <p>Compost from off-enterprise, organic or non-organic sources; on-enterprise, organic or non-organic: Natural substances or those derived from natural substances, without the addition of chemically synthesized substances or chemical treatment, in accordance with this standard.</p>

Common Name(s)	Origin and Usage
Copper products	<p>These include</p> <p>copper hydroxide for use as a wood preservative (copper hydroxide is an active ingredient in products currently registered for use as wood preservatives) or for disease control;</p> <p>copper sulphates for use as a fungicide;</p> <p>Bordeaux mix and copper oxychloride, where there are PMRA<sup>2</sup> registrations, for fruits and vegetables.</p> <p>These products shall be used in a manner that prevents excessive copper accumulation in the soil. Buildup of copper in soil may prohibit future use. Use with caution. No visible residue shall be allowed on harvested crops. Basic copper sulphate, copper oxide, copper sulphate and copper oxysulphate may be used to correct documented copper deficiencies. Copper ammonia base, copper ammonium carbonate, copper nitrate and cuprous chloride are prohibited as sources of copper for plant nutrients.</p>
Dolomite	<i>See</i> Limestone.
Enzymes	Acceptable if derived microbiologically from natural substances and not fortified with synthetic plant nutrients. Ensure enzymes are not obtained through genetic engineering.
Epsom salts	<i>See</i> Magnesium sulphate, mined; Magnesium sulphate, synthetic.
Feather meal	If composed of feather meal only or if unadulterated with non-allowed substances.
Feldspar	<i>See</i> Mined minerals and unprocessed mined minerals.
Ferric and ferrous compounds	Includes ferric oxide, ferric sulphate and ferrous sulphate. <i>See</i> Iron products; Trace elements (micronutrients).
Fish emulsions or solubles	<i>See</i> Fish products.
Fish farm wastes	Shall be composted.
Fish hydrolysate	<i>See</i> Fish products.
Fish meal, powder	Natural substances or those derived from natural substances, without the addition of chemically synthesized substances or chemical treatment. <i>See also</i> Fish products.
Fish products	<p>Natural substances or those derived from natural substances without the addition of chemically synthesized substances or chemical treatment except that liquid fish products as soil and plant amendments may be pH adjusted with (in preferential order) organic vinegar, organic citric acid or phosphoric acid. The amount of acid used shall not exceed the minimum needed to reach pH 3.5.</p> <p>Fish products are prohibited if they contain other synthetic preservatives or are fortified with prohibited plant nutrients.</p>
Fulvic acid	Dilute neutral to acidic extracts of humates.
Granite dust	Sources that are mixed with petroleum products, such as from stone engraving, are prohibited. <i>See also</i> Mined minerals and unprocessed mined minerals.
Greensand (glaucanite)	<i>See</i> Mined minerals and unprocessed mined minerals.
Guano, bat or bird	Shall be decomposed, dried deposits from wild bats or birds. Domesticated fowl excrement is considered <i>manure</i> , not <i>guano</i> . <i>See</i> Compost for the definition of <i>compost</i> .

<sup>2</sup> PMRA refers to the Pest Management Regulatory Agency.

Common Name(s)	Origin and Usage
Gypsum (calcium sulphate)	Mined source; for correcting calcium and sulphur deficiencies and for amending soil salinity problems documented by soil and plant tissue testing. Sulphates produced using sulphuric acid are prohibited.
Humic acid	Dilute potassium hydroxide extracts of mined sources
Humus from worms and insects (vermi-compost)	Allowed if made with materials in accordance with this standard.
Hydrated magnesium sulphate	Epsom salts and kieserite. Sulphates produced using sulphuric acid are prohibited.
Inoculants	<i>See</i> Microbial products.
Iron products	Ferric oxide, ferric sulphate, ferrous sulphate, iron citrate, iron sulphate or iron tartrate may be used where a soil or plant nutrient-deficiency is documented by soil or tissue testing.
Iron sulphates	Sulphates produced using sulphuric acid are prohibited. <i>See also</i> Iron products.
Kelp and kelp products	<i>See</i> Aquatic plant products.
Kieserite	<i>See</i> Mined minerals and unprocessed mined minerals.
Leaf mould	
Limestone	Magnesium carbonate and calcium carbonate. May cause build-up of magnesium. Use with caution. Shall be from a natural source. Oyster shell flour, limestone, dolomite (not slaked), aragonite, eggshell meal, lime from sugar processing and mined calcium carbonate are acceptable. Calcium products that have been used in controlled atmosphere storage are prohibited.
Magnesium carbonate	Naturally occurring in dolomite and magnesite.
Magnesium chloride	Natural sources only.
Magnesium rock	Natural substances or those derived from natural substances, without the addition of chemically synthesized substances or chemical treatments. <i>See also</i> Mined minerals and unprocessed mined minerals.
Magnesium sulphate, mined	As kieserite or epsom salts. <i>See also</i> Mined minerals and unprocessed mined minerals. Allowed if mined. Sulphates produced using sulphuric acid are prohibited.  From natural sources as a soil or plant amendment included with micronutrients; for use as a soil amendment where there is evidence of documented magnesium deficiency.
Magnesium sulphate, synthetic	As synthetically produced epsom salts. Allowed for use with a documented magnesium deficiency. Sulphates produced using sulphuric acid are prohibited.
Manganese products	Manganous oxide and manganese sulphate may be used to correct documented manganese deficiencies. <i>See</i> Trace elements (micronutrients).
Manure, composted	<i>See</i> Compost.
Manure, non-organic manure source	<i>See</i> conditions in par. 5.5 of CAN/CGSB-32.310.
Mica	<i>See</i> Mined minerals and unprocessed mined minerals.
Microbial products	Allowable microbial products include rhizobium bacteria, mycorrhizal fungi, azolla, yeast and other micro-organisms on compost, plants, seeds, soils and other components of the organic operation. Ionizing radiation is allowed for use on peat moss carrier only, before the addition of microbial inoculants. Radiation is otherwise prohibited.
Micronutrients, synthetic	<i>See</i> Trace elements (micronutrients).
Milk	Shall not contain prohibited substances.

Common Name(s)	Origin and Usage
Mined minerals and unprocessed mined minerals	A mined mineral shall not have undergone any change in its molecular structure through heating or by combining with other substances. Acceptable if the substance is not processed or fortified with synthetic chemicals. Mined minerals are regarded as supplements to a balanced, organic soil-building program. Some of the minerals that are mined can also be made synthetically or are by-products of industry; investigate the source of any new substance. Sodium nitrate is prohibited.
Molasses	Shall be organic molasses unless not commercially available.
Molybdenum products	To correct documented molybdenum deficiencies. <i>See also</i> Trace elements (micronutrients).
Mulch	Non-organic forms of straw, leaves, grass clippings or hay shall be free of pesticides and other contaminants. Wood chips and sawdust shall be from untreated wood. Organic matter in the form of plant residues from organic sources is allowed for mulching.
Mushroom compost	<i>See</i> Compost.
Naturally occurring biological organisms (e.g. worms) and their products	Worm castings (vermi-compost) from organic or non-organic manure sources in accordance with this standard. <i>See also</i> Worm castings.
Oyster shell lime	Ground shells from oysters. <i>See also</i> Limestone.
Peat moss	Shall not contain synthetic wetting agents.
Perlite	
Phosphate rock	Shall not be fortified or processed with synthetic chemicals. Cadmium shall not exceed 90 mg/kg P <sub>2</sub> O <sub>5</sub> .
Plant (vegetative) by-products	Those derived from natural substances without the addition of chemically synthesized substances or chemical treatment. Organic sources shall be used unless commercially unavailable.
Plants	Includes plant preparations of aquatic or terrestrial plants or parts of plants, such as cover crops, green manures, crop wastes, hay, leaves and straw. Parts of plants used as soil amendments and foliar feeds are permitted. Crop wastes that potentially contain significant levels of pesticide contaminants are prohibited.
Pomaces	Feedstocks shall be from certified organically grown fruits or vegetables, or the material shall be aerobically composted before use.
Potassium chloride (muriate of potash and rock potash)	Mined potassium salts (e.g. sylvinite and kainite).
Potassium rock powders	Includes basalt, biotite, mica, feldspars, granite and greensand.
Potassium sulphate	Only if from langbeinite or other natural sources. <i>See also</i> Mined minerals and unprocessed mined minerals.
Potassium sulphate magnesia	Langbeinite.
Potting soil	Shall not contain synthetic wetting agents or synthetic fertilizers.
Pumice	
Rock dusts (stone meal), unprocessed	<i>See</i> Mined minerals and unprocessed mined minerals.
Sand	Shall not contain prohibited substances.
Sawdust and wood chips	Shall be from untreated and unpainted wood. Derived from natural substances, or those derived from natural substances shall be from wood that has not been treated with prohibited substances.

Common Name(s)	Origin and Usage
Seaweed and seaweed products	Aquatic plant products are prohibited if they contain other synthetic preservatives, such as formaldehyde, or are fortified with other prohibited plant nutrients. <i>See also</i> Aquatic plant products.
Shells from aquatic animals	
Soil	From organic sources in accordance with this standard for 36 months.
Soybean meal	Use organic soybean sources unless not commercially available. Shall not be from genetically engineered soybeans.
Sphagnum moss	Shall not contain synthetic wetting agents.
Stillage and stillage extract	Ammonium stillage is prohibited.
Sulphate of potash magnesia	From langbeinite. <i>See also</i> Mined minerals and unprocessed mined minerals. Natural substances or those derived from natural substances, without the addition of chemically synthesized substances or chemical treatment.
Sulphates of zinc or iron	May be used only to correct for deficiencies determined by soil or plant tissue testing. Sulphates produced using sulphuric acid are prohibited. <i>See also</i> Iron products.
Sulphur, elemental	Sulphur may be used as a soil amendment where more buffered sources of sulphur are not appropriate, and as a foliar application. Natural substances or those derived from natural substances without the addition of chemically synthesized substances or chemical treatment.
Trace elements (micronutrients)	Includes micronutrients from natural sources that are unchelated or chelated by substances listed as allowed. To be used when soil and plant deficiencies are documented by soil and plant testing.
Vermicasts	<i>See</i> Worm castings.
Vermiculite	
Vitamins	Non-synthetic sources of all vitamins and synthetic sources of vitamins B <sub>1</sub> , C and E may be used in organic crop production.
Wood ash	Wood ash shall be produced exclusively from untreated and unpainted wood. Wood-stove ash shall be free of contaminants, such as coloured paper plastic and other synthetic substances. Excessive applications of ash can cause pH and nutrient imbalances. <i>See also</i> Ash.  Natural substances from plant and animals sources only, and those derived from natural substances, without the addition of chemically synthesized substances or chemical treatment. Ash from burning minerals, manure or prohibited substances is prohibited.
Wood chips and shavings	From untreated and unpainted wood only. Shall be free of prohibited substances.
Worm castings	Allowed if made from organic manure. Compost made from non-organic manure by worms shall be demonstrated to be free of antibiotics.
Yeast	<i>See</i> Microbial products.
Zeolite	<i>See</i> Mined minerals and unprocessed mined minerals.
Zinc products	Zinc oxide and zinc sulphate may be used to correct a documented zinc deficiency.

## Crop Production Aids and Materials

Common Name(s)	Origin and Usage
Acetic acid, non-synthetic	Used as a drip irrigation cleaner, an equipment cleaner and an adjuvant to adjust the pH of sprays.
Adhesives for sticky traps and barriers	Shall not contain prohibited pesticides or other prohibited substances.
Alcohol	Non-synthetic ethyl alcohols are allowed. Synthetic sources of ethyl and isopropyl alcohols may be used only as disinfectants or formulant ingredients. Alcohol, ethyl (ethanol) used as a cleaning agent for equipment used in maple syrup production shall be unadulterated food-grade quality.
Alcohol, ethyl (ethanol)	Permitted for use as a disinfectant. <i>See also</i> Alcohol.
Alcohol, isopropyl	Permitted for use as a disinfectant. <i>See also</i> Alcohol.
Alkali carbonates and bicarbonates	For disinfecting greenhouse facilities.
Amino acids, non-synthetic	Amino acids produced by plants, animals and micro-organisms that are not from genetic engineering and that are extracted or isolated by hydrolysis or by physical or other non-chemical means are considered non-synthetic. Non-synthetic amino acids may be used as plant growth regulators or chelating agents once it is registered for this use in Canada.
Ammonium carbonate	For use as bait in insect traps and for monitoring purposes only. Shall not be in contact with crop or soil.
Arthropod pathogens	<i>See</i> Biological organisms.
Arthropod predators and parasitoids	<i>See</i> Biological organisms.
Arthropods	<i>See</i> Biological organisms.
Ascorbic acid, non-synthetic	Used for cleaning irrigation lines, adjusting the pH of sprays, and promoting natural growth. The synthetic form of this substance has not been reviewed.
Baits for rodent traps	Baits shall not contain synthetic substances.
Baking soda (potassium or sodium bicarbonate)	Allowed for pest and disease control in greenhouses. Allowed for other crops once it is approved for use by the PMRA <sup>2</sup> . Permitted for use as a cleaning agent for equipment used in the production and processing of food.
Bentonite	<i>See</i> Mined minerals and unprocessed mined minerals.
Biodynamic preparations for compost	Chamomile (Prep 503), dandelion (Prep 506), oak bark (Prep 505), stinging nettle (Prep 504), valerian (Prep 507) and yarrow flowers (Prep 502).
Biological organisms	Living organisms that benefit plant production by reducing pest populations, such as <i>Bacillus thuringiensis</i> , spinosad, granulosis (e.g. viruses, bacteria, protozoa, fungi, insects and nematodes). No organisms from genetic engineering.

Common Name(s)	Origin and Usage
Bleach	<p>Calcium hypochlorite, chlorine dioxide or sodium hypochlorite used for disinfecting and sanitizing facilities and equipment. Flush water from cleaning irrigation equipment shall not exceed the maximum limits set by the federal and provincial governments.</p> <p>Allowed for disinfecting and sanitizing food contact surfaces, including equipment used in the production and processing of maple syrup as set out in clause 7.2.13.1 b. of CAN/CGSB-32.310. Residual chloride levels for wash water in direct contact with crops or food, and in flush water from cleaning irrigation systems that is applied to crops or fields shall not exceed the maximum limits under federal and provincial regulations.</p>
Borate	Sodium tetraborate and octaborate may be used as wood preservatives. Only mined sources acceptable.
Boric acid	May be used for structural pest control (i.e. ants). No direct contact with food or crops that will be organic is allowed.
Botanical pesticides	<p>Botanical pesticides shall be used in conjunction with a biorational pest management program but shall not be the primary method of pest control in the farm plan. 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.</p> <p>The only botanical pesticides registered for use in Canada and in a form that could be used by organic growers are some rotenone and pyrethrum products registered for domestic use.</p>
Calcium chloride	Natural sources and food-grade quality only. Can be used to adjust nutrient deficiencies and physiological disorders
Calcium lignin sulphonate	<i>See</i> Lignin sulphonates.
Calcium polysulphide	<i>See</i> Lime sulphur.
Carbon dioxide	For soil and greenhouse use and for controlled atmosphere storage.
Caustic potash (potassium hydroxide)	For disinfecting greenhouse facilities only.
Chelates	Natural chelates (e.g. amino acids, citric acid, tartaric acid and other di- and triacid chelates) and lignin sulphonate are allowed ( <i>see</i> Lignin sulphonates). Synthetic chelating agents are not allowed with micronutrients unless they are specifically listed for such use. Some synthetic chelates are allowed on a case-by-case basis for use only with micronutrients sprays, for a documented deficiency. Prohibited chelating agents include DTPA, EDTA, HEDTA, NTA, glucoheptonic acid and its salts, and synthetic amino acids.
Chloride of lime	<i>See</i> Calcium chloride.
Chlorine	<i>See</i> Bleach.
Citric acid	Used as a drip irrigation cleaner, an equipment cleaner, a chelating agent and a pH adjuster.
Citric acid, synthetic	May be used to remove mineral residues on osmosis membranes used in maple syrup production.

Common Name(s)	Origin and Usage
Copper products	<p>These include</p> <p>copper hydroxide for use as a wood preservative (copper hydroxide is an active ingredient in products currently registered for use as wood preservatives) or for disease control;</p> <p>copper sulphates for use as a fungicide;</p> <p>Bordeaux mix, and copper oxychloride, fungicides or wood treatments, where there are PMRA<sup>2</sup> registrations, for fruits and vegetables.</p> <p>These products shall be used in a manner that prevents excessive copper accumulation in the soil. Buildup of copper in soil may prohibit future use. Use with caution. No visible residue shall be allowed on harvested crops. Basic copper sulphate, copper oxide, copper sulphate and copper oxysulphate may be used to correct documented copper deficiencies. Copper ammonia base, copper ammonium carbonate, copper nitrate and cuprous chloride are prohibited as sources of copper for plant nutrients.</p>
Cytokinins	<i>See</i> Growth regulators for plants.
Detergents	Includes soaps — biodegradable only (whose biodegraded components are not more harmful than the original components). Allowed for use as equipment cleaners, including equipment used in the production and processing of food. Includes natural wetting agents; <i>see also</i> Wetting agents. Evaluated on a case-by-case basis.
Diatomaceous earth	Only non-heated forms may be used. Make sure no synthetic pesticides or synergists are added.
Dormant oils	Allowed for use as a dormant spray on woody plants only. Shall not contain any prohibited insecticides or other prohibited ingredients.
Drip irrigation cleaners	<p>Preferred drip irrigation cleaners include vinegar, citric acid and other naturally occurring acids.</p> <p><i>See also</i> Bleach; Detergents.</p>
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.
Gibberellic acid	Acceptable if made from a fermentation process and not fortified with prohibited synthetic substances. Fermentation process shall not use organisms from genetic engineering. <i>See also</i> Growth regulators for plants.
Growth regulators for plants	Natural plant hormones, such as gibberellic acid, indoleacetic acid and cytokinins, are allowed. Shall not contain prohibited synthetic substances. <i>See also</i> Gibberellic acid.
Hormones	<i>See</i> Growth regulators for plants.
Hydrogen peroxide	Hydrogen peroxide as a cleaning agent for equipment used in maple syrup production shall be food-grade quality only. Allowed for use as a fungicide once approved by the PMRA <sup>2</sup> .
Indoleacetic acid	<i>See</i> Growth regulators for plants.
Iodine	Non-elemental and not to exceed 5% solution by volume.
Kaolin clay	
Latex paint	Latex paint is allowed as a tree seal and on tree trunks to protect against southwest disease.
Lignin sulphonates	Lignosulphonic acid, calcium lignosulphate and sodium lignosulphate. Allowed as a chelating agent, as a formulant ingredient and as a dust suppressant. Ammonium lignosulphate is prohibited.

Common Name(s)	Origin and Usage
Lime sulphur	Foliar application as a fungicide is allowed on a restricted basis. May be used as an insecticide only if there are no feasible alternatives. Includes calcium polysulphide.
Lye, sodium hydroxide	For disinfecting greenhouses only. Prohibited for use in crop production, such as for adjusting the pH. Allowed as a cleaner, including the maintenance of reverse osmosis membranes used in maple syrup production. Prohibited for use in lye peeling of fruits and vegetables.
Magnesium chloride	Natural sources only.
Nitrogen	For controlled atmosphere storage.
Oxygen	For controlled atmosphere storage.
Peracetic acid	For use in controlling fire blight bacteria, once it is registered for that use in Canada.
pH buffers	Shall be from a natural source, such as citric acid or vinegar. Lye and sulphuric acid are prohibited.
Pheromones	Allowed for use in pheromone traps or dispensers. Pheromones shall be non-synthetic and shall not be combined with prohibited materials.
Plant extracts, oils and preparations	Allowed for use a production aids unless otherwise specifically restricted or prohibited. Allowed extractants include cocoa butter, lanolin, animal fats, alcohols and water. Allowed for disease and pest control once approved by PMRA <sup>2</sup> . Extraction with synthetic solvents is prohibited except for potassium hydroxide or sodium hydroxide, provided the amount of solvent used does not exceed the amount necessary for extraction. Of the two products, potassium hydroxide is the preferred choice; the manufacturer shall prove the need to use sodium hydroxide.
Plant protectants, natural	Substances that protect plants from harsh environmental conditions such as frost and sunburn, infection, the buildup of dirt on leaf surfaces, or injury by a pest. Natural substances are allowed, including diatomaceous earth, kaolin clay, pine oil, pine resin and yucca. Interior latex paint and white wash are allowed for use on trees to protect against sunburn and southwest disease.
Plastic for row covers and solarization	Shall not be incorporated into the soil or left in the field to decompose; shall be removed at the end of the growing season. Use of polyvinyl chloride plastic is prohibited.
Pyrethrum	There are currently no pyrethrum products registered in Canada that do not contain synthetic contaminants. Pyrethrin is the active ingredient in products licensed for use as insecticides. Currently the only pyrethrin product (without the prohibited adjuvant piperonyl butoxide) is allowed for use in mushroom production only.
Quick lime	Also known as calcium oxide. Prohibited as a fertilizer.
Repellents	Acceptable if derived from a natural source, such as sterilized blood meal, rotten eggs, hair or predator scents, provided synthetic additives are not used.
Rotenone	Shall not be combined with unacceptable formulants. There are only a few domestic products registered for use in Canada. <i>See also</i> Botanical pesticides for restrictions.
Seaweed and seaweed products	Aquatic plant products are prohibited if they contain other synthetic preservatives such as formaldehyde or are fortified with prohibited plant nutrients. <i>See also</i> Aquatic plant products in par. 4.2.
Seed treatments	Non-synthetic and allowed synthetic substances, such as microbial products, kelp, yucca, gypsum and various clays, are allowed.

Common Name(s)	Origin and Usage
Semiochemicals	Semiochemicals shall be non-synthetic and shall not be combined with prohibited materials.
Soap-based algaecide/demisters	Algaecide, disinfectants and sanitizers including irrigation cleaning systems that do not contain prohibited or restricted substances.
Soaps	Insecticidal soaps consisting of fatty acids derived from animal or vegetable oils are allowed.
Soaps, ammonium	For use as a large animal repellent only; no contact with soil or edible portion of crop allowed.
Sodium bicarbonate (baking soda)	<i>See</i> Baking soda (potassium or sodium bicarbonate).
Sodium metabisulphite	May be added to the filtrate to prevent mould growth during storage of osmosis membranes used in maple syrup production. <i>See also</i> par. 7.2 of CAN/CGSB-32.310.
Sodium silicate	For tree fruit and fibre processing.
Sterile insects	<i>See</i> Biological organisms.
Straw	If organic, allowed for use as mulch or in compost. If from a non-organic source, ensure any straw used is uncontaminated.
Sugar	Organic sugar may be used as an ingredient in a crop production aid.
Sulphur (smoke bombs)	Sulphur smoke bombs used for rodent control shall be used in conjunction with other methods and only when a full pest control program is maintained but temporarily overwhelmed.
Sulphur, elemental	Allowed for foliar use only.
Summer oils	Allowed for use in organic production as suffocating or stilet oils on foliage once they are registered for that use in Canada.
Surfactants	<i>See</i> Detergents; Soaps.
Transplant and potting media	Shall be composed entirely of allowed substances.
Treated seed, non-synthetic agents	Seed treated with naturally occurring biological management agents are allowed. Organisms from genetic engineering are prohibited. Seed pelletized with clay, gypsum or other non-synthetic coating is allowed. For rhizobial bacteria coatings, pelletized seeds are allowed unless pelletizing substance contains prohibited substances. Plastic polymer pelletization of seed is prohibited. <i>See also</i> Seed treatments.
Tree seals	Plant or milk-based paints are recommended but interior latex paints may be used. Other petroleum substances may be used if there is no alternative. Shall not be combined with fungicides or other synthetic chemicals.
Vegetable oils	Spreader-stickers, surfactants and carriers. Plant oils shall not contain synthetic pesticides.
Vinegar	Allowed as a cleaning agent for equipment used in production and processing.
Virus sprays	Shall be evaluated on a product specific basis. Codling moth granulosis virus is acceptable. No viruses from genetic engineering are allowed.
Water	
Water, reclaimed	Reclaimed water shall comply with federal, provincial and local standards and shall be used only on non-edible parts of food crops and on crops not for human consumption. Use on edible plant parts and root crops is prohibited.
Wetting agents	Natural wetting agents, including soaps, saponins and microbial wetting agents, are allowed. <i>See also</i> Detergents; Soaps.

**Weed Management**

<b>Common Name(s)</b>	<b>Origin and Usage</b>
Biological organisms	Living organisms that benefit plant production by reducing pest populations (e.g. viruses, bacteria, protozoa, fungi, insects, nematodes, nematode-repelling cover crops and animals). No organisms from genetic engineering.
Mulches	Organic matter in the form of plant residues from organic sources is allowed for mulching.  Non-organic forms of straw, leaves, grass clippings, wood chips, sawdust or hay shall be free of pesticides and other contaminants.  Newspaper mulch: Glossy paper and coloured ink are prohibited.  Paper: Glossy paper and coloured ink are prohibited.  Plastic mulches: Shall not be incorporated into the soil or left in field to decompose; shall be removed at the end of the growing season. Plastic mulches in perennial crops may be left for more than one season but shall be removed before the plastic decomposes. Use of polyvinyl chloride as plastic mulch or row cover is prohibited.
Plant extracts	Allowed once they are registered for that use in Canada.
Plant oils	Allowed once they are registered for that use in Canada.
Sawdust and wood chips	Shall be from untreated and unpainted wood. Derived from natural substances, or those derived from natural substances shall be from wood that has not been treated with prohibited substances.
Straw	If organic, allowed for use as mulch or in compost. Restricted if from a non-organic source to ensure any straw used is uncontaminated.
Vinegar (acetic acid)	Non-synthetic sources unless commercially unavailable.
Wood chips and shavings	From untreated and unpainted wood only. Shall be free from prohibited substances.

**5. PERMITTED SUBSTANCES LISTS FOR LIVESTOCK PRODUCTION**

5.1 **Classification** — Livestock production substances are classified according to the following uses and applications:

- a. **Feed, Feed Additives and Feed Supplements**
- b. **Health Care Products** include medications, remedies, parasiticides and other substances used to maintain or restore the well-being of an animal. Many of these substances are considered farm animal drugs under the *Food and Drugs Act*. As such, they shall be used with the degree of care that animal drugs require. All substances to be used for livestock shall be approved by the Veterinary Drugs Directorate at Health Canada or by the Veterinary Biologics Section or the Feed Section at the Canadian Food Inspection Agency (CFIA).
- c. **Production Aids** include all other substances used on animals and their living areas, such as bedding, cleaners, disinfectants and dips.

**Feed, Feed Additives and Feed Supplements<sup>3</sup>**

<b>Common Name(s)</b>	<b>Origin and Usage</b>
Diatomaceous earth	Approved as an anti-caking agent in feed to a maximum of 2% of the total diet.
Forage concentrates (grains) and roughages (hay, silage, fodder, straw) and energy feeds	Shall be obtained from enterprises certified organic in accordance with this standard and may include silage preservation products (e.g. bacterial or enzymatic additives derived from bacteria, fungi and plants and food by-products [e.g. molasses and whey]). Note that if weather conditions are unfavourable to fermentation, lactic, propionic and formic acid may be used with approval of the certification body.
Milk replacer	Only without antibiotics and animal fats, and for emergency use only.
Molasses	May be used as a flavouring agent; shall be organic unless commercially unavailable.
Pre-mixes	Concentrated mixture of minerals and vitamins; all ingredients shall be organically sourced, where applicable, and shall be essential for animal nutrition.
Protein feeds	Shall be from organic sources.
Seaweed meal	
Trace minerals, elements (mineral products)	Non-synthetic chelated or sulphated minerals that are registered for use in livestock feed. Synthetic nutrient minerals may be used when non-synthetic sources are unavailable. Minerals may not be used to stimulate growth or production. Minerals from any source are allowed for medical use.
Vitamins, natural	Used for enrichment or fortification of livestock feed. Synthetic vitamins may be used if non-synthetic sources are unavailable. Vitamins from any source are allowed for medical use.

**Health Care Products**

<b>Common Name(s)</b>	<b>Origin and Usage</b>
Acetylsalicylic acid	Aspirin.
Alcohol, ethyl (ethanol)	Allowed as a disinfectant and sanitizer only.
Alcohol, isopropyl	Allowed as a disinfectant only.
Antibiotics	Refer to par. 6.7 of CAN/CGSB-32.310 for conditions on antibiotic use in livestock. <i>See also</i> Antibiotics, oxytetracycline.
Antibiotics, oxytetracycline	For emergency use for bees. The equipment shall be destroyed, in accordance with par. 7.1.14.7 of CAN/CGSB-32.310, but the bees need not be destroyed if they are taken out of organic production and treated with oxytetracycline.
Anti-inflammatories	For health care use, to reduce inflammation. Preference shall be given to natural alternatives. Anti-inflammatories shall be approved by the Veterinary Drugs Directorate at Health Canada.
Biologics, including vaccines	Organisms from genetic engineering or their products (e.g. recombinant gene technology) are not allowed. All biologics shall be approved by the Veterinary Biologics Section at the CFIA.
Botanical compounds	Botanical preparations registered for use and according to label specifications. Botanical compounds shall be approved by the Feed Section at the CFIA or by the Veterinary Drugs Directorate at Health Canada.

<sup>3</sup> Feed must meet minimum nutritional standards described in table 4 of the Feeds Regulations. Ingredients used in feed must be approved in Schedule IV or V of the Feeds Regulations. Some ingredients and products require registration (e.g. enzymes and milk replacers).

Common Name(s)	Origin and Usage
Chlorohexidine	For surgical procedures conducted by a veterinarian. Allowed for use as a teat dip when alternative germicidal agents and physical barriers have lost their effectiveness.
Colostrum whey	Probiotic.
Colostrum	Shall be organic unless commercially unavailable.
Copper sulphate	For use as an essential nutrient (source of copper and sulphur) and for topical use (foot baths). Sulphates produced using sulphuric acid are prohibited.
Diatomaceous earth	For use in control of external parasites once it is registered for that use in Canada.
Electrolyte solutions	With no added active ingredients.
Electrolytes	Without antibiotics.
Formic acid	For apicultural use to control parasitic mites. This substance may be used after the last honey harvest of the season and shall be discontinued 30 days before the addition of honey supers.
Glucose	
Glycerin	For use as a livestock teat dip; shall be produced through the hydrolysis of fats or oils.
Homeopathic and biotherapies	Shall be registered with the Veterinary Drugs Directorate at Health Canada.
Honey	Organic honey is allowed.
Hydrogen peroxide	Food-grade quality only; for external use as a disinfectant. May be added to livestock's drinking water as a disinfectant.
Iodine	For use as a topical disinfectant. Sources include potassium iodide and elemental iodine. As a cleaning agent, shall be followed by a hot-water rinse. Non-elemental only; not to exceed 5% solution by volume (e.g. iodophors).
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.
Lime, hydrated	Not permitted to cauterize physical alterations or deodorize animal wastes.
Local anesthetics	Use requires a withdrawal period of 90 days after administering to livestock intended for slaughter, and 7 days after administering to dairy animals. Preference shall be given to natural alternatives.
Magnesium sulphate	Mined sources only. A source of magnesium and sulphur. Sulphates produced using sulphuric acid are prohibited.
Mineral oil	For topical use and as a lubricant.
Oxalic acid	For the control of mites in honeybee colonies.
Oxytocin	For postparturition therapeutic applications.
Parasiticides and anti-microbials	<i>See</i> par. 6.7 of CAN/CGSB-32.310 for conditions regarding the use of internal parasiticides.
Plant oils	To control external parasites.
Rotenone	For external parasites, rotenone shall not be combined with unacceptable formulants. There are only a few domestic products registered for use in Canada. <i>See also</i> Botanical pesticides in par. 4.3 for restrictions.
Selenium products	May be derived from sodium selenate or sodium selenite. <i>See</i> Trace minerals, elements (mineral products). May be used where documented deficiencies in the stock, soils or feed supplies exist.

Common Name(s)	Origin and Usage
Trace minerals, elements (mineral products)	Non-synthetic chelated or sulphated minerals that are registered for use in livestock feed. Synthetic nutrient minerals may be used when non-synthetic sources are unavailable. Minerals may not be used to stimulate growth or production. Minerals from any source are allowed for medical use.
Vaccines	See Biologics, including vaccines.
Vitamins, natural	Used for enrichment or fortification. If allowed by federal regulation, synthetic vitamins may be used if non-synthetic sources are unavailable. Vitamins from any source are allowed for medical use.

5.4

#### Production Aids

Common Name(s)	Origin and Usage
Chlorine	Calcium hypochlorite, chlorine dioxide or sodium hypochlorite used for disinfecting and sanitizing facilities and equipment. Residual chlorine levels in water shall not exceed the maximum residual disinfectant limit under federal and provincial regulations. See also Bleach in par. 4.3.
Hydrogen peroxide	Food-grade quality only; for external use as a disinfectant.
Iodine	As a cleaning agent, shall be allowed by a hot water rinse. Non-elemental only, not to exceed 5% solution by volume (e.g. iodophors).
Phosphoric acid	As an equipment cleaner for the dairy industry only, provided no direct contact with organically managed livestock or land occurs.

## 6. PERMITTED SUBSTANCES LISTS FOR PROCESSING AND SANITATION

6.1 **Classification** — Processing and sanitation substances are classified according to the following uses and applications:

- a. **Organic Ingredients** are agricultural commodities that shall be organically produced to be included in a product labelled organic, to be identified as organic in the ingredient panel, or both. The vast majority of agricultural commodities used in organic products fall into this category.
- b. **Non-organic Ingredients (NOI)** are in most cases considered non-agricultural, although some of the fundamental ingredients may have originated from agricultural-based commodities. Non-organic ingredients may be used only when an acceptable alternative, non-synthetic ingredient is commercially unavailable.
  - i. **Food Additives** — See the definition of *food additive* in section 3 of CAN/CGSB-32.310.
  - ii. **Other Non-organic Ingredients** — These non-organic ingredients are not considered food additives.
- c. **“With Organic Ingredients”** — Substances prohibited in products labelled “organic” but allowed in food products labelled “contains X% organic ingredients.”

6.2 **Other Categories of Substances** — Other categories of substances are classified according to the following uses and applications:

- a. **Processing Aids** are substances or ingredients that are added to a product for a technological effect during processing. They are not present in the finished product or are present at insignificant or non-functional levels.
- b. **Cleaners, Disinfectants and Sanitizers** are used to remove dirt, filth and foreign matter from products and product-handling operations. These substances are also used to control micro-organisms that may contaminate products.
- c. **Pest Control Substances** are used to disinfect or prevent infestation of stored commodities, prevent postharvest decay, and control losses from insects, diseases, rodents and other organisms.

## 6.3

**Organic Ingredients**

Common Name(s)	Origin and Usage
Alcohol, ethyl (ethanol)	Alcohol used as an ingredient shall be from an organic source.
Vegetable extracts	Shall be obtained from organic sources without the use of synthetic solvents.

## 6.4

**Non-organic Ingredients**

## 6.4.1

***Food Additives***

Common Name(s)	Origin and Usage
Acids	Including a) alginic, b) citric — produced by microbial fermentation of carbohydrate substances, and c) lactic.
Agar	Water extracts only, for livestock and bee products.
Alginates (alginic acid, sodium alginate, potassium alginate)	
Ammonium bicarbonate	For use as a leavening agent only.
Ammonium carbonate	For use as a leavening agent only.
Ascorbic acid, non-synthetic	
Ascorbic acid, synthetic	Synthetic form is allowed in fruits and vegetables only if the natural form is not available.
Calcium carbonate	For milk products. Prohibited as a colouring or anti-caking agent.
Calcium chloride	Not allowed as a food additive in any (standardized) milk products.
Calcium citrate	
Calcium phosphates (monobasic, dibasic, and tribasic forms)	
Carageenan	
Carbon dioxide	For controlled atmosphere storage.
Citric acid	From fruit and vegetable products.
Ferrous sulphate	For iron enrichment or fortification of products when recommended or required by regulation. Sulphates produced using sulphuric acid are prohibited.
Glycerides (mono and diglycerides)	For use only in drum drying of products. Organisms from genetic engineering are excluded. Documentation is required. Shall be produced from organic sources unless not commercially available.
Glycerine	Shall be produced by hydrolysis of natural (vegetable or animal) fats and oils.
Gums	Water-extracted only (includes arabic, guar, karaya, tragacanth, locust bean and carob bean). For milk products: fat, confectionery, canned meat and egg products. For canned meat: gelatine, agar and carrageen.
Kelp and kelp products	For use only as a thickener and dietary supplement.
Lactic acid	For fermented vegetable products or in sausage casings.
Lecithin	Bleached form is allowed when unbleached form is not suitable. From organic sources only.
Magnesium chloride (nigari)	Derived from seawater, for soybean products.

<b>Common Name(s)</b>	<b>Origin and Usage</b>
Magnesium sulphate	From non-synthetic sources only. Sulphates produced using sulphuric acid are prohibited.
Malic acid	
Ozone	
Pectin (low-methoxy)	
Pectin (high-methoxy)	
Potassium acid tartrate (potassium hydrogen tartrate)	
Potassium carbonate	Allowed in cereal products, baked goods, confectionary, dairy products, fruit and vegetable products, and wine production.
Potassium chloride	For canned fruits and vegetables, frozen fruit and vegetables, vegetable sauces, ketchup and mustard.
Potassium citrate	
Potassium tartrate made from tartaric acid	For cereals, cakes and confectionery. Allowed as a food additive in cider and several dairy products.
Silicon dioxide	
Sodium bicarbonate (baking soda)	As a NOI, allowed in baked goods and confectionery.
Sodium carbonate	For cakes and biscuits or for confectionery.
Sodium chloride	With or without calcium carbonate as an anti-caking agent.
Sodium citrate	For sausages and milk products.
Sodium hydroxide	Allowed as a cleaner, including the maintenance of reverse osmosis membranes used in maple syrup production. Prohibited for use in lye peeling of fruits and vegetables.
Sodium phosphates	For use in dairy products only.
Tocopherols and mixed natural concentrates	Derived from vegetable oil when rosemary extracts are not a suitable alternative.
Xanthan gum	Water extracts, for fat products, fruit and vegetables, cakes and biscuits, and salads.

#### 6.4.2

#### ***Other Non-organic Ingredients***

(Those not classified as food additives)

<b>Common Name(s)</b>	<b>Origin and Usage</b>
Colouring, natural	From non-synthetic sources only and shall not be produced using synthetic solvents and carrier systems or any artificial preservative.
Cornstarch	Not from sources from genetic engineering or products derived from genetic engineering, with no added chemosynthetic substance.
Dairy cultures	May not be products of recombinant DNA technology.

<b>Common Name(s)</b>	<b>Origin and Usage</b>
Enzymes	Any preparations of enzymes normally used in food processing derived from edible, non-toxic plants, non-pathogenic fungi, or non-pathogenic bacteria, excepting micro-organisms from genetic engineering or enzymes derived from genetic engineering.
Flavours	From non-synthetic sources only; shall not be produced using synthetic solvents and carrier systems or any artificial preservative. No propylene glycol carrier or any artificial preservatives, and shall not be hexane extracted.
Micro-organisms, (processing derivatives)	Including any preparations of micro-organisms normally used in product processing, excepting micro-organisms from genetic engineering or enzymes derived from genetic engineering, with no added chemosynthetic substance.
Oxygen	For controlled atmosphere storage.
Potassium iodide, natural	
Smoke flavour.	<i>See Yeast.</i>
Vitamins and minerals	Minerals (including trace elements), vitamins and similar isolated ingredients shall not be used except where legally required or a dietary or nutritional deficiency can be demonstrated and shall be documented. Vitamins shall not be derived from organisms from genetic engineering.
Waxes	Non-synthetic only: a) carnauba wax and b) wood resin (processing product of resin component).
Yeast	Non-synthetic only: a) autolysate, b) bakers' (may contain lecithin, obtained without the use of bleaches and organic solvents), c) brewers', d) nutritional, and e) smoked. Non-synthetic smoke flavouring process shall be documented.  Growth on petrochemical substrate and sulphite waste liquor are prohibited.

## 6.5

### With Organic Ingredients

(Substances only permitted when the product contains less than 95% organic ingredients)

<b>Common Name(s)</b>	<b>Origin and Usage</b>
Magnesium carbonate	For use only in agricultural products labelled "Contains X% organic ingredients"; prohibited in agricultural products labelled "organic" and as an anti-caking agent in non-standardized dry mixes (e.g. seasonings) used in meat products.
Magnesium stearate	For use only in agricultural products labelled "Contains X% organic ingredients"; prohibited in agricultural products labelled "organic."
Potassium iodide, synthetic	For use in agricultural products labelled "Contains X% organic ingredients" only; prohibited in agricultural products labelled "organic."
Potassium metabisulphite	For use for alcoholic beverages as a preservative only, and labelled "Contains X% organic ingredients."
Potassium phosphate	For use in agricultural products labelled "Contains X% organic ingredients" only; prohibited in agricultural products labelled "organic."

Common Name(s)	Origin and Usage
Sulphurous acid	<p>For use only in wine products labelled “Contains X% organic ingredients,” provided that total sulphite concentration does not exceed 100 ppm.</p> <p>For use in winemaking as a preservative only; minimum use of sulphur dioxide (SO<sub>2</sub>) is recommended. The maximum allowable level of SO<sub>2</sub> is 100 parts per million and 30 parts per million for total sulphites and free sulphites, respectively. The use of sulphites from SO<sub>2</sub> bottled gas or liberated from the ignition of asbestos-free sulphur wicks is acceptable.</p> <p>Once it is registered for that use in Canada.</p>

## 6.6

### Processing Aids

Common Name(s)	Origin and Usage
Activated charcoal	Shall be of plant origin.
Alcohol, ethyl (ethanol)	Alcohol used as an ingredient shall be from an organic source.
Calcium sulphate, (gypsum)	As a carrier for cakes and biscuits, soybean products and bakers’ yeast. Sulphates produced using sulphuric acid are prohibited.
Carbon dioxide	For controlled atmosphere storage.
Casein	
Caustic potash (potassium hydroxide)	For pH adjustment only. Prohibited for use in lye peeling of fruits and vegetables.
Diatomaceous earth	As a food filtering aid or as a clarifying agent only.
Egg white	Albumen and albumin, as a clarifying agent; a non-organic source may be used if an organic source is not available.
Ethylene	For postharvest ripening of tropical fruit and degreening of citrus only.
Isinglass	As a fining agent (fish-based).
Kaolin	As a clarifying agent.
Nitrogen gas	Only oil-free grades.
Oxygen	For controlled atmosphere storage.
Ozone	
Perlite	For use as a filter aid in food processing only.
Powdered milk	As a desiccant.
Rice hulls	As a filtering agent.
Talc	As a filtering agent.
Vegetable fat and oil	Obtained without the use of synthetic solvents.
Waxes	Non-synthetic only: a) carnauba wax and b) wood resin (processing product of resin component).

## 6.7

## Cleaners, Disinfectants and Sanitizers

Common Name(s)	Origin and Usage
Acetic acid, synthetic	May be used postproduction as a cleaning agent to remove mineral residues in evaporators used in maple syrup production.
Alkali carbonates and bicarbonates	For disinfecting greenhouse facilities.
Bleach	Residual chlorine levels in the water of the following substances shall not exceed the maximum residual disinfectant limit under federal and provincial regulations: a) calcium hypochlorite, b) chlorine dioxide, c) sodium hypochlorite, d) ozone, and e) hydrogen peroxide. Not to exceed 10% solution by volume.
Caustic potash (potassium hydroxide)	For disinfecting growing facilities and structures.
Chlorine	<i>See</i> Bleach.
Detergents	Includes soaps — biodegradable only (whose biodegraded components are not more harmful than the original components). Allowed for use as equipment cleaners, including equipment used in the production and processing of food.
Hydrogen peroxide	Shall be a hydrogen-peroxide-based solution for food use (hydrogen water).
Lime	
Lye	For disinfecting greenhouses only. Prohibited for use in crop production, such as for adjusting the pH.
Peracetic acid	For use in disinfecting equipment, seed and asexually propagated planting material. Once it is registered for that use in Canada.
Phosphoric acid	As a dairy equipment cleaner, only in accordance with the manufacturer's written instructions, provided no direct contact with organically managed livestock or land occurs.
Potassium permanganate	Not to exceed 1% solution by volume.
Soaps	<i>See</i> Detergents.
Sodium bicarbonate (baking soda)	Permitted for use as a cleaning agent for equipment used in the production and processing of food.
Sodium borate	
Vinegar	Cider and maple vinegars are permitted as a cleaning agent for equipment used in production and processing. Vinegar used as an ingredient shall be from an organic source. Acetic acid used for sanitations can be from a non-organic source but shall be food-grade quality.

## 6.8

## Pest Control Substances

Common Name(s)	Origin and Usage
Carbon dioxide	For controlled atmosphere storage.
Cholecalciferol (vitamin D3)	
Diatomaceous earth	
Pyrethrins	Without piperonyl butoxide as a carrier.

**7. NOTES**

**7.1 Sources of Referenced Publications**

7.1.1 The publication referred to in par. 2.1.1 may be obtained from the Canadian General Standards Board, Sales Centre, Gatineau, Canada K1A 1G6. Telephone 819-956-0425 or 1-800-665-2472. Fax 819-956-5644. E-mail [ncr.cgsb-ongc@pwgsc.gc.ca](mailto:ncr.cgsb-ongc@pwgsc.gc.ca). Web site [www.ongc-cgsb.gc.ca](http://www.ongc-cgsb.gc.ca).

7.1.2 The publications referred to in par. 2.1.2 and 2.1.3 may be viewed at the Department of Justice Canada's Web site [canada.justice.gc.ca](http://canada.justice.gc.ca).

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

**ORGANIC PRODUCTION SYSTEMS  
REVIEW RECORD FOR GENERIC SUBSTANCES ADDED OR AMENDED**

**Organic Production Systems  
Review Record For Generic Substances Added or Amended**

**Section 11 of CAN/CGSB-32.310, *Organic Production Systems — General Principles and Management Standards***

Date Reviewed:
Reviewer:

**Substance:** \_\_\_\_\_  
(Common Name)
(Chemical Formula)

**Proposed Appendix:** \_\_\_\_\_

**Status:** \_\_\_\_\_

**Proposed Organic Usage:**

**Substance Description:**

**Known Alternatives & Relative Merits:**

**Canadian Regulatory Status:**    Regulated     Unregulated

**Other Regulatory Considerations:** \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

**Compliance Review:**

Par. 11.1 c. of CAN/CGSB-32.310

“Consistent with General Principles of Organic Production”  Yes  No

**Comment:** \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

Par. 11.1.2 of CAN/CGSB-32.310

**“Environmental/Ecological Impact”**

	Ecology	Surface Water	Ground Water	Soil Quality	Soil Micro-flora & fauna
On-farm Impacts:	_____	_____	_____	_____	_____
Off-farm Impacts:	_____	_____	_____	_____	_____
Misuse Potential:	_____	_____	_____	_____	_____

**Substances for Soil Amendment**

Par. 11.2.1 of CAN/CGSB-32.310

***Necessity, Origin & Manufacture***

a. necessary for obtaining or maintaining soil fertility to fulfil specific nutritional requirements of crops, or specific soil conditioning and rotation practices that cannot be satisfied by the requirements and practices of this standard

Yes  No

**Comment:** \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

b. of plant, animal, microbial or mineral origin, in accordance with the Permitted Substances Lists, and may undergo the following processes: i. physical (e.g. mechanical or thermal), ii. enzymatic, iii. microbial (e.g. composting or digestion)

Yes  No

**Comment:** \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

c. manufactured and used in a manner that shall not result in, or contribute to, the damage or the contamination of the soil’s microflora and microfauna, or the related agroecosystem, in accordance with the relevant regulatory authority

Yes  No

**Comment:** \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**Substances for Plant Disease, Insect and Weed Control**

Par. 11.2.2 of CAN/CGSB-32.310

***Necessity, Origin, Residues, Manufacture and Availability***

a. necessary for the control of a detrimental organism or disease for which no other adequate biological, physical or plant breeding alternatives or management practices are available.

Yes  No

**Comment:** \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

b. of plant, animal, microbial or mineral origin, in accordance with the Permitted Substances Lists, and may undergo the following processes: i. physical (e.g. mechanical or thermal), ii. enzymatic, iii. microbial (e.g. composting or digestion).

Yes  No

**Comment:** \_\_\_\_\_

c. used under conditions that shall not directly or indirectly result in the presence of unacceptable product residues in soils, plants or animal tissue, or products.

Yes  No

**Comment:** \_\_\_\_\_

d. manufactured and used in a manner that shall not result in, or contribute to, the damage or to the contamination of the soil's microflora and microfauna or the related agroecosystem, in accordance with the relevant regulatory authority.

Yes  No

**Comment:** \_\_\_\_\_

#### **Substances for Livestock Health and Rations**

Par. 11.2.3 of CAN/CGSB-32.310

#### ***Necessity, Origin, Residues, Manufacture and Availability***

a. necessary for livestock health, with provisions that other organic treatments are not available.

Yes  No

**Comment:** \_\_\_\_\_

b. necessary to correct documented essential nutrient deficiencies in the forage or feed ration.

Yes  No

**Comment:** \_\_\_\_\_

c. exclusive of prohibited substances in accordance with par 1.8 of CAN/CGSB-32.310.

Yes  No

**Comment:** \_\_\_\_\_

d. necessary for ensuring product quality allows for preservatives given that other biological, cultural or physical treatments are not available.

Yes  No

**Comment:** \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

e. are substances approved/registered for use in livestock production (for feeds, drugs, biologics) and by which regulatory body? What is the registration number or DIN?

Yes  No

**Comment:** \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**Compliance Summary:**

Recommendations Regarding Generic Lists:

Acceptance  Rejection

Class Designation: \_\_\_\_\_

Annotation Including Restrictions (if applicable): \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**REVIEWER ATTESTATION:**

**Primary Reviewers:**

1. \_\_\_\_\_

2. \_\_\_\_\_  
(Name) (Credentials) (Signature) (Date)

**Secondary Reviewers:**

3. \_\_\_\_\_

4. \_\_\_\_\_

5. \_\_\_\_\_  
(Name) (Credentials) (Signature) (Date)