

# DIRECTORY OF ORGANIC INPUTS

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*Prepared by:*



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## Disclaimer

ACORN created this directory to facilitate growth in the organic industry in Atlantic Canada. The information contained in this directory is for educational purposes only. Its content is based on best available knowledge at the time of compilation. Legal texts prevail at all times over the interpretations contained in this document.

Any reference to commercial products, trade or brand names is for information only; no endorsement or approval by ACORN is intended. Before using any product, read and follow all instructions and safety precautions on labels. The product label is a legal document. It is against the law to use the product in any other way. The user of this information assumes all risks for personal injury or property damage.

**It is the responsibility of producers to obtain approval from their respective organic certification body before using extraneous inputs in any aspect of production, processing, handling, packaging or sanitation.** Use of an input without review and approval by your own certification body may place your organic certification at risk.

## Using the directory

Welcome! ACORN's Directory of Organic Inputs was originally launched in October 2003 and was again revised in July 2012. This version was updated in February 2017. The version of the standard used during preparation of this document was the November 2015 revision of CAN/CGSB-32.311-2015 Permitted Substances List.

The Directory is laid out to match categories in the Permitted Substances List (PSL). In some cases, the PSL notes restrictions about the use of an input (for instance, the requirement to test soil or plant tissue to show deficiency before fertilizing with micronutrients). Please refer directly to the Canadian Organic Standards and PSL to inform yourself about the requirements for use of specific inputs and check with your certification body if you have questions.

After the description of the input, where applicable there is a table of brand name products that have been typically allowed for organic producers. Inputs are identified by their full **brand name**; which is important, as there are products that have similar names but different formulations. The **manufacturer** of the input is also listed; this is the company who makes the product (different than a local supplier, who brings in an input for sale).



There is a '**Reviewed**' column, which identifies if a product has undergone any type of external review to check organic status. Some certification bodies (ACO, Ecocert, Pro-Cert, Quebec Vrai) are offering an 'Input Approval' service, where they review a product (nutrient input or pest control) and determine if it would be acceptable under the Canadian Organic Standards (COS). The product supplier then uses the logo of the Certifier to indicate that the product has been reviewed and found to be acceptable. However, this is not a substitution for *each* Certifier reviewing *each* product. So if you are certified by ACO, you still need to confirm with them that a product reviewed by ECOCERT is okay for use on your farm.

The Organic Materials Review Institute (OMRI) is an American organization that reviews products to see if they meet the U.S. National Organic Program (NOP) standards. OMRI Canada also offers product review aligned with Canada Organic Regime (COR) standards, in addition to the existing review program under NOP standards. OMRI Canada approval for NOP standards does not guarantee approval under COR standards, so review by your organic certification body should be sought before use.

Also, inputs do not need to be reviewed by a certification body or by OMRI Canada to be acceptable for Canadian organic producers. Any product can be used as long as you can confirm it is acceptable under the Canadian Organic Standards.

If the input is registered as a pesticide, it will have a **Pest Control Product number (PCP#)** indicating approval by Health Canada's Pesticide Management Regulatory Authority, the federal agency that regulates pesticide use. Regardless of a pesticide's permissibility under the Canadian Organic Standards, it must be registered by the PMRA and it must be permitted under provincial legislation. It is the responsibility of producers and processors to know the laws governing the use of the pesticide they intend to use. Before using any product, read and follow all instructions and safety precautions on labels. The product label is a legal document. It is against the law to use the product in any other way. The user of this information assumes all risks for personal injury or property damage.

## Searching the directory

You can retrieve information by either **using the keyword search in your .pdf reader (by pressing Command + F keys)** or by **clicking on topics** from the Table of Contents. You can also help keep the directory current by providing feedback and let us know about any out-of-date information or new products. These can be sent by email to [transition@acornorganic.org](mailto:transition@acornorganic.org) and will be changed in the next revision.

## Section I: Soil Amendments and Crop Nutrition

### Agar

For use in initial mushroom spawn production.

### Alfalfa meal and pellets

Dried alfalfa can be used as a soil amendment, supplying nitrogen as well as other plant nutrients. Alfalfa is available as a meal or in a pelletized form. In both forms it is a slow release source of nitrogen. There is evidence that alfalfa acts as a growth stimulant, due to the presence of Triacantanol, a naturally occurring plant growth hormone. Alfalfa contains 3.5% nitrogen, 1–4% potassium, and minor amounts of phosphorus, calcium, boron, copper, and zinc. It is also high in vitamins and enzymes which are likely responsible for the stimulating effect on the soil microbial community. Alfalfa can also be made into a fermented tea and applied as a foliar spray in order to stimulate growth and promote disease resistance. Use organic alfalfa unless commercially unavailable. Ensure non-organic alfalfa is not a product of genetic engineering.



Brand Name	Reviewed	Manufacturer
Alfalfa Green	ECOCERT	WESTERN ALFALFA MILLING CO. LTD.
Organic Alfalfa Meal 3-0-3	OCQV	Gaia Green Products Ltd.

### Algae

See Section I *Aquatic plants and aquatic plant products*.

### Animal manure and processed animal manures

Manure is defined by the national standards as “livestock feces, urine and other excrement, and bedding used (or soiled) by livestock and that have not been composted”. As an input in organic systems, use of manure is restricted due to concerns about pathogens and environmental contamination. It is used primarily as a source of nitrogen, phosphorous and organic matter. Manure should be incorporated within 24 hours to minimize loss of volatile nitrogen and potassium.

The use of uncomposted manure is discouraged because it can contain high levels of plant and human pathogens, weed seeds, and volatile and soluble nitrogen. Composting is recommended to stabilize nutrients, to kill pathogens and weed seeds and to reduce levels of transgenic DNA, which may be a concern if non-organic sources of manure are in use. Organic sources of manure are preferred; non-organic manure may be used as long as the livestock is not raised in a fully caged system, the animals are able to turn 360 degrees, and are not kept permanently in the dark.

Uncomposted manures must be applied no fewer than 90 days prior to the harvest of an edible crop that does not come into contact with the soil (e.g. grains, staked tomatoes), or no fewer than 120 days prior to the harvest of an edible crop that does come into contact with the soil (e.g. potatoes, unstaked tomatoes), as per paragraph 5.5.2.5. For more information, please refer to paragraph 5.5 of the *Canadian Organic Standards: General Principles and Management Standards*.

**Processed animal manures** may be treated using mechanical or physical methods (such as heat or dehydration), which can make them lighter or easier to spread. They also may be treated with substances listed in the Permitted Substances List or blended with other allowed nutrients. Processed manures may contain human pathogens; if the supplier cannot confirm that pathogen levels are below the CCME limits for compost either through testing or by following agreed-upon best practices to eliminate pathogens, then processed manure use must follow the time limits before harvest as described in Animal Manures above.

Brand Name	Reviewed	Manufacturer
Organic Garden Manure	Pro-Cert	ASB Greenworld
Greenhouse Gold Organic Lawn Fertilizer 4-1-2	Pro-Cert	Envirem Organics Ltd.
Greenhouse Gold Nutri-Wave Spreadable Topdressing	Pro-Cert	Envirem Organics Ltd.
Greenhouse Gold Organic Nutri-Wave 4-1-2 Professional Blend	Pro-Cert	Envirem Organics Ltd.

### Aquatic plants and aquatic plant products

Non-synthetic extracts are permitted. Extraction with synthetic solvents is prohibited except with, in order of preference:

a) potassium hydroxide; b) sodium hydroxide; provided the amount of solvent used does not exceed the amount necessary for extraction. The manufacturer shall prove the need to use sodium hydroxide. Shall not contain synthetic preservatives, such as formaldehyde.

Brand Name	Reviewed	Manufacturer
Kelp Extract Powder 1-3-18	OMRI Canada	Talun Eco-Products Inc



Brand Name	Reviewed	Manufacturer
Seasol Commercial Concentrate	OMRI Canada	Seasol International
Ocean Organics Seaweed Extract 0-0-1 Technical Grade	OMRI Canada	Ocean Organics
BIOCANNA Bio Rhizotonic	OMRI Canada	Canna Worldwide BV
Algas Pacific NPKelp 100% Extract of Seaweeds	OMRI Canada	Algas y Extracos del Pacifico Norte AEP S.A. de C.V.
Stella Maris Organic	OMRI Canada	Acadian Seaplants Limited
Algas Pacific Kelproot Enraizador Orgánico	OMRI Canada	Algas y Extracos del Pacifico Norte AEP S.A. de C.V.
Guarantee Organic Kelp Extract 0-0-1 For Agriculture	OMRI Canada	Ocean Organics
BioFish (3-1-2)	ECOCERT	BioFert Manufacturing Inc.
Cardwell Farm Atlantic Marine .3-.3-.3 Compost	ECOCERT	Cardwell Farms Compost Products Inc.
Certified Kelp Extract Powder: 0.5-3-18	ECOCERT	Talun Eco-Products Inc
Agri-Gro Ultra	Pro-Cert	Evergreen Liquid Plant Food
ASCO-SLE	ECOCERT	Organic Ocean
ASCO-SSP	ECOCERT	Organic Ocean
Fish / Seaweed Blend Fertilizer	ECOCERT	Organic Atlantic
Hydrolyzed Fish Fertilizer	ECOCERT	Organic Atlantic
RapidGro 0-0-5	ECOCERT	BioFert Manufacturing Inc.
Seaweed Plant Food	ECOCERT	Organic Atlantic
STIMULAGRO 0-0-6	ECOCERT	Organic Ocean
Kelp Meal 1-0-2	OCQV	Gaia Green Products Ltd.

### Ash

Ash shall be from plant and animal sources. Ash containing materials that cannot be verified and that may contain prohibited substances shall not exceed the limits (category C1) for acceptable levels (mg/kg) of arsenic, cadmium, chromium, copper, lead and mercury, as specified in *Guidelines for the Beneficial Use of Fertilising Residuals*.

Ash from burning minerals, manure, coloured paper, plastics or other synthetic substances is prohibited. Shall not cause heavy metal buildup in soil through repeated application.

### Biochar

Produced through pyrolysis of forestry by-products which have not been treated with or combined with prohibited substances. Recycled biochar from contaminated remediation sites is prohibited.

### Biological organisms, naturally-occurring

Includes worms and their products. See Section I *Worm castings*.

### Blood meal

Blood meal is a dried by-product of the slaughterhouse industry. Rich in readily available nitrogen and a source of iron, it is most commonly used in horticultural applications such as potting mixes, greenhouse production, and gardening use. In Canada, it is only allowed if sterilized.

Brand Name	Reviewed	Manufacturer
Blood Meal (12-0-0) granular	ECOCERT	BioFert Manufacturing Inc.



Brand Name	Reviewed	Manufacturer
Blood Meal (12-0-0) Water Soluble	ECOCERT	BioFert Manufacturing Inc.
Green Earth Blood Meal 12-0-0	ECOCERT	PREMIER TECH HOME AND GARDEN INC.
Blood Meal 12-0-0	OCQV	Gaia Green Products Ltd.

### Bone meal

Bone meal is the powdered processed waste of the slaughterhouse industry. High in phosphorus and calcium, (bone meal also has minor amounts of nitrogen. As a source of phosphorus, bone meal is slowly available to the plant and is most commonly used in potting mixes or during transplanting. Phosphorus is vital for crop growth, root development, early maturation and crop quality. It is "fixed" or strongly held by iron, aluminum hydroxides and clays. At low pH values (<5.5) phosphorus becomes fixed to aluminum and iron. The highest level of availability occurs in the pH range of 6 -7. Shall be guaranteed free of specified risk materials including: the skull, brain, trigeminal ganglia (nerves attached to the brain), eyes, tonsils, spinal cord and dorsal root ganglia (nerves attached to the spinal cord) of cattle aged 30 months or older; and the distal ileum (portion of the small intestine) of cattle of all ages.

Brand Name	Reviewed	Manufacturer
Natural Phos 1-29-0 Tri-Calcium Phosphate	OMRI Canada	RitePack Inc.
Green Earth Bone Meal 4-10-0	ECOCERT	PREMIER TECH HOME AND GARDEN INC.
Bone Meal 2-16-0	OCQV	Gaia Green Products Ltd.

### Boron

Boron is an essential plant micronutrient. It promotes seed development, flower and pollen production, sugar translocation and improved crop quality. Soil texture, pH, organic matter and the climate all influence the availability of boron. Coarse textured, well-drained soils will generally be low in boron. At pH levels above 6.5, availability is reduced. Although usually present in adequate amounts in most soils, specific crops, such as brassicas, beets, and legumes, have a high boron requirement and benefit from supplemental fertilization. Drought and cold (early spring) conditions decrease the availability of boron for uptake.

The following soluble boron products are permitted: a) borate; b) sodium tetraborate (borax and anhydrous); and c) sodium octaborate. Shall be used to correct a documented deficiency specific to the type of crop. See Section I *Micronutrients*.

Brand Name	Reviewed	Manufacturer
Etibor 48 (Disodium Tetraborate Pentahydrate)	OMRI Canada	Etimine USA, Inc.
Etidot 67 (Disodium Octaborate Tetrahydrate)	OMRI Canada	Etimine USA, Inc.
Etigran (Granular Disodium Tetraborate Pentahydrate)	OMRI Canada	Etimine USA, Inc.
Granular Ulexite (Sodium Calcium Pentaborate Octahydrate)	OMRI Canada	Etimine USA, Inc.
20 Mule Team Borax Granubor 2 Sodium Borate 14,3% B Granular borate for bulk blended fertilizers only	OMRI Canada	U.S. Borax, Inc.
20 Mule Team Borax Solubar Sodium Borate 20.5% B Soluble borate for fluid fertilizers and nutrient sprays	OMRI Canada	U.S. Borax, Inc.

### Calcium

The following calcium products are permitted:



mined calcium carbonate, limestone, dolomite (not slaked) and other non-synthetic sources, including shells from aquatic animals (such as oyster shell flour), aragonite, eggshell meal and lime from sugar processing. Non-synthetic calcium chloride may be used to address nutrient deficiencies and physiological disorders.

Calcium products used in controlled atmosphere storage are prohibited. Shall not cause salt buildup in soil through repeated application. See Section I *Calcium sulphate (gypsum)*.

Brand Name	Reviewed	Manufacturer
VANSIL W-10,20,30,40,50 Wollastonite	OMRI Canada	Vanderbilt Minerals, LLC
NYCO Brand of the S&B Group Wollastonite (20x40) HARRP NYCOR MLAR	OMRI Canada	Pilares Operations
NYCO Brand A Member of IMERYS Wollastonite NYAD MD200	OMRI Canada	Pilares Operations
NYCO Brand of the S&B Group Wollastonite Dry Process NYAD MD325	OMRI Canada	Pilares Operations
Canadian Wollastonite	OMRI Canada	Canadian Wollastonite
Physioflore 0-0-0	OMRI Canada	Timac Agro USA, Inc.
CalciMax Lite	ECOCERT	Nutriag Ltd.
Calcium Lime	ECOCERT	BioFert Manufacturing Inc.
CaO (0-0-0+4 Ca)	ECOCERT	BioFert Manufacturing Inc.

### Calcium sulphate (gypsum)

Mined sources; calcium sulphate produced using sulphuric acid is prohibited.

To correct calcium and sulphur deficiencies and soil salinity problems, as documented by visual symptoms or by testing of soil or plant tissue.

### Cannery wastes

Shall be from organic sources. Non-organic cannery wastes shall be composted. See Section I *Compost feedstocks*.

### Cardboard

Cardboard shall not be waxed or impregnated with fungicide or prohibited substances. May be used as mulch or as composting feedstock. See Section I *Compost feedstocks*.

### Chelates

Non-synthetic and listed synthetic chelates are permitted. See Section II *Lignin sulphonates*.

### Clay

Bentonite, perlite and zeolite; as soil amendments or seed pellet additives. See Section I *Mined minerals, unprocessed*.

### 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, industrial, or any organic or non-organic farm.

See Section I *Compost from off-farm sources; Compost produced on the farm; Compost tea; and Compost feedstocks*. For information on compost starters, see Section I *Microbial products*. For information on vermicompost, see Section I *Worm castings*.

Brand Name	Reviewed	Manufacturer
Atlantic Marine Compost	ACO	Cardwell Farms Compost
Cow Compost	ACO	Cardwell Farms Compost



Brand Name	Reviewed	Manufacturer
Sheep Compost	ACO	Cardwell Farms Compost
Tri-blend Compost	ACO	Cardwell Farms Compost
Biofor	OCQV	Fafard
Compost with Peat and Shrimp	OCQV	Fafard
Fertilo	OCQV	Fafard
Sea Compost	OCQV	Fafard
Greenhouse Gold Manure Compost	Pro-Cert	Envirem Organics Inc.
Greenhouse Gold Seafood Compost	Pro-Cert	Envirem Organics Inc.

### Compost feedstocks

Acceptable feedstocks include:

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

- i) the non-organic source is not a fully caged system in which livestock cannot turn 360°; and
- ii) livestock is not permanently kept in the dark; and
- iii) the source and quantity of manure, type of livestock, and evaluation of the criteria in i) and ii) shall be recorded.

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; and

e) paper yard waste bags which contain coloured ink.

When evidence indicates that composting feedstocks may contain a substance prohibited by 1.4 of CAN/CGSB-32.310 known to be persistent in compost, documentation or testing of the final product may be required.

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 the risk materials specified in Section I *Bone meal*.

### Compost from off-farm sources

Compost obtained from off-farm sources shall conform to the criteria specified in Section I *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 *Guidelines for Compost Quality*;

b) shall meet criteria for acceptable levels (MPN/g total solids) of human pathogens as specified in *Guidelines for Compost Quality*; and

c) shall not cause heavy metal buildup in soil through repeated application.

Brand Name	Reviewed	Manufacturer
Harvest Soil Amender	OMRI Canada	Harvest Power Richmond, BC, Canada Division
Organic Soil Amender	OMRI Canada	Terra Performance Inc.
Groovy Poo	OMRI Canada	WKP Composting



### Compost produced on the farm

Compost produced on the farm shall conform to the criteria specified in Section I *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 to the required temperature for the minimum time; or
- b) meet limits for acceptable levels (MPN/g total solids) of human pathogens specified in Guidelines for Compost Quality; or
- c) be considered as aged or raw manure rather than compost, provided the non-composted solid or liquid manure shall be:
  - i) incorporated into the soil at least 90 days before the harvest of crops that do not come into contact with soil and are intended for human consumption; or
  - ii) incorporated into the soil at least 120 days before the harvest of crops that have edible parts that come into direct contact with the surface of the soil or with soil particles.

### Compost tea

Compost tea is a soil amendment or foliar feed used to promote beneficial bacterial growth that is created by steeping mature compost. Liquid extracts from composted material may be used to suppress plant disease and/or stimulate plant growth. Compost teas applied as a foliar spray exert an influence on the plant leaf surface by coating the leaves with beneficial microbes. Compost teas used as a pre-plant drench (applied to the soil) can be viewed as inoculating the soil with plant available nutrients and beneficial organisms. Compost teas must be made from material that meets compost standards. The compost material is “brewed” in an aerated (active) or a non-aerated (passive) manner depending on the desired microbial populations.

Compost tea shall be made from composts that conform to criteria specified in Section I *Compost produced on the farm; Compost from off-farm sources; or Worm castings*. Other substances listed in Section I may be added to compost tea.

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 5.5.2.5 of CAN/CGSB-32.310, have been met.

### Copper

Copper is an essential plant micronutrient with a wide range of other agricultural applications. Like many plant nutrients, however, an excess of copper can be toxic to plants and other organisms. Because copper is a mineral element, it can accumulate in soils. Low levels do not pose a risk to soil life and may even enhance plant growth if soil copper levels are deficient. Higher levels, however, can be detrimental to soil life, particularly earthworms and can also be toxic to fish. Copper can only be used to meet a documented deficiency (shown by soil or tissue tests). Soil testing will be necessary if copper is used repeatedly to ensure that levels in soil do not become unacceptably high.

The following copper products may be used to correct documented copper deficiencies: copper sulphate, basic copper sulphate, copper oxide and copper oxysulphate.

Copper ammonia base, copper ammonium carbonate, copper nitrate and cuprous chloride are prohibited. Shall be used with caution to prevent excessive copper accumulation in the soil. Copper build up in soil may prohibit future use. Visible residue of copper products on harvested crops is prohibited.

See Section I Micronutrients.

Brand Name	Reviewed	Manufacturer
White Label 5% Copper with 3% Sulfur	OMRI Canada	Stoller Enterprises, Inc.
Copper Sulfate	OMRI Canada	Old Bridge Chemicals, Inc.
CuMax Lite	ECOCERT	NutriAg



### Digestate, anaerobic

Products of anaerobic digestion may be used for soil amendment, provided that the following conditions are met:

- a) the materials added to the digester shall be listed in Section I. If feedstocks are obtained from off-farm sources, the digestate shall comply with the heavy metal restrictions in Section I *Compost from off-farm sources*;
- b) the criteria for raw manure land application specified in 5.5.2.3 of CAN/CGSB-32.310 shall be met;
- c) anaerobic digestate may be used as a compost feedstock if it is added to other substances which are then composted. See Section I *Composting feedstocks*.

### Dust suppressants

Non-synthetic substances, or substances listed in Sections I and II (for example: Lignin sulphonate, Molasses, Vegetable oils) are permitted.

Petroleum products are prohibited.

### Enzymes

Shall be derived from non-synthetic substances by the action of micro-organisms. Shall not be fortified with prohibited substances.

### Extractants

Permitted extractants include non-synthetic substances, such as cocoa butter, lanolin, animal fats, alcohols and water. Extraction with synthetic solvents is prohibited, except as specified in the annotations of substances listed in Section I.

### Fish meal, fish powder, fish wastes, hydrolysate, emulsions and solubles

The following fish products are permitted: fish meal; fish powder; and hydrolysate, emulsions and solubles. Fish farm wastes shall be composted.

Ethoxyquin or other synthetic preservatives, fertilizers and other chemically synthesized substances not listed in this standard shall not be added to fish products.

Chemical treatment is prohibited, except that liquid fish products may be pH adjusted with the following, in preferential order:

- a) vinegar;
- b) non-synthetic citric acid;
- c) synthetic citric acid;
- d) phosphoric acid; or
- e) sulphuric acid.

The amount of acid used for pH adjustment shall not exceed the minimum needed to stabilize the product.

Brand Name	Reviewed	Manufacturer
Drammatic "E" 2-5-0	OMRI Canada	Dramm Corp.
Drammatic "K" Liquid Fish with Kelp Plant Food 2-5-0	OMRI Canada	Dramm Corp.
Drammatic "O" Liquid Fish Plant Food 2-5-0	OMRI Canada	Dramm Corp.
Grassoline All Purpose Fish Fertilizer 2-0-0	OMRI Canada	Vancouver Island Renuable Resources LTD
Grassoline All Purpose Fish Fertilizer 2-3-0 Stabilized	OMRI Canada	Vancouver Island Renuable Resources LTD
Purely Fish 8-5-1	OMRI Canada	Purely Organic Products, LLC
BioFish 3-1-2	ECOCERT	BioFert Manufacturing
Organic Gem Liquid Fish Fertilizer 3-3-0.3	ECOCERT	Evergreen Liquid Plant Food



## Formulants

Non-synthetic substances shall be used, unless a substance annotation specifies that a synthetic formulant may be used. For example, see Section I *Aquatic plants and plant products; Fish meal, fish powder, fish wastes, hydrolysate, emulsions and solubles; Humates, humic acid and fulvic acid.*

## Guano

Shall be decomposed, dried deposits from wild bats or birds. Domesticated fowl excrement is considered to be manure, not guano.

Brand Name	Reviewed	Manufacturer
Algas Pacific LARUSOIL Organic Fertilizer Liquid	OMRI Canada	Algas y Extractos de l Pacifico Norte AEP S.A. de C.V.
Archipelago Bat Guano Natural Organic Phosphate Fertilizer	OMRI Canada	Archipelago Bat Guano, LLC
Bat Guano (High “N”) 10-3-1	OCQV	Gaia Green Products Ltd.
Bat Guano (High “P”) 0-13-1	OCQV	Gaia Green Products Ltd.

## Humates, humic acid and fulvic acid

Humic and fulvic acids are extracted from a form of lignite coal and clay known as leonardite. Humic and fulvic acids are general terms describing a large family of organic compounds similar to those extracted from naturally occurring soil organic matter. Humic acids are organic acids that occur in humus and other organically derived materials such as peat and certain soft coal. They have been shown to increase fertilizer efficiency in phosphate and micronutrient uptake by plants as well as aiding in the development of plant root systems. Compost is another good way to add humic acid.

Permitted if extracted by:

- non-synthetic substances;
- microbial fermentation; or
- potassium hydroxide—potassium hydroxide levels used in the extraction process shall not exceed the amount required for extraction.

Shall not exceed the limits (category C1) for acceptable levels (mg/kg) of arsenic, cadmium, chromium, copper, lead and mercury specified in *Guidelines for the Beneficial Use of Fertilising Residuals*.

Brand Name	Reviewed	Manufacturer
Humates/Black Mineral Powder	OMRI Canada	Morningstar Minerals
SoilBiotics Organic 1r Seed Treatment	OMRI Canada	SoilBiotics
Activ80 GG Soil Amendment and Fertilizer Enhancer	OMRI Canada	Black Earth Humic, LP
Activ80 MP Soil Amendment and Fertilizer Enhancer	OMRI Canada	Black Earth Humic, LP
Black Earth Liquid Fulvic	ECOCERT	Evergreen Liquid Plant Food
Black Earth Organo Liquid Hume	ECOCERT	Evergreen Liquid Plant Food
Earth Boost	ECOCERT	BioFert Manufacturing
Root Conditioner 0-0-1	ECOCERT	BioFert Manufacturing

## Humus from worms and insects (vermicompost)

See Section I *Worm castings*.

## Inoculants

See Section I *Microbial products*.



Brand Name	Reviewed	Manufacturer
Nitrogen Gold Pre-Inoculant for Alfalfa	OMRI Canada	Novozymes BioAg

## Iron

The following sources of iron are permitted, to correct documented iron deficiencies: ferric oxide, ferric sulphate, ferrous sulphate, iron citrate, iron sulphate or iron tartrate.

See Section I *Micronutrients*.

## Kelp and kelp products

See Section I *Aquatic plants and aquatic plant products*.

## Limestone

Magnesium carbonate and calcium carbonate. Shall be from a non-synthetic source. Oyster shell flour, limestone, dolomite (not slaked), aragonite, eggshell meal, lime from sugar processing and mined calcium carbonate are acceptable sources.

Calcium products that have been used in controlled atmosphere storage are prohibited.

Magnesium carbonate shall be used with caution to prevent magnesium buildup in soil.

Calcium carbonate is often referred to as limestone, although this annotation also applies to magnesium carbonate. There are two types of limestone commonly available: calcitic and dolomitic. Both contain calcium carbonate ( $\text{CaCO}_3$ ) and both will raise soil pH and increase the amount of available calcium; however, dolomitic lime is also used to increase magnesium levels. Soil tests are necessary to determine which is more appropriate for any given soil. Liming materials must be incorporated thoroughly into the plow layer to effect rapid neutralization of soil acidity.

Brand Name	Reviewed	Manufacturer
Calcitic Lime	ECOCERT	Brookville Lime
Dolomitic Lime	ECOCERT	Brookville Lime

## Magnesium

Magnesium is necessary for photosynthesis and sugar production in forages and cereals. It also has enzyme functions and controls respiration and starch translocation. Low magnesium levels in plants can lead to animal health problems.

From non-synthetic substances, without the addition of chemically synthesized substances or chemical treatment. The following sources of magnesium are permitted:

- a) magnesium rock—magnesium carbonate, magnesium chloride; b) dolomitic limestone (not slaked); c) magnesium sulphate ( $\text{MgSO}_4$ ): Epsom salts (may be synthetic), kieserite.  $\text{MgSO}_4$  shall be used to correct a documented magnesium deficiency.

Brand Name	Reviewed	Manufacturer
NutriMag	OMRI Canada	Innovative Municipal Products US, Inc
Innovative AgMag	OMRI Canada	Innovative Municipal Products US, Inc
MagMax Lite	ECOCERT	Nutriag Ltd.

## Manganese

Manganese has an integral role in the synthesis of chlorophyll and vitamins in plants. Manganese also plays a key role in carbohydrate and nitrogen metabolism, which may explain higher requirements by pulse legumes such as field peas and soybean. Kelp extracts are a source of manganese.

Manganous oxide and manganese sulphate are permitted, to correct a documented manganese deficiency. See Section I *Micronutrients*.



Brand Name	Reviewed	Manufacturer
MangaMax Lite	ECOCERT	Nutriag Ltd.

### Meat meal

Shall be processed by drying, heat sterilization and/or composting.

Brand Name	Reviewed	Manufacturer
Promaharin Crab Meal	OMRI Canada	Proteínas Marinas y Harinas de Sinaloa, S.A. de C.V.
Promaharin Shrimp Meal	OMRI Canada	Proteínas Marinas y Harinas de Sinaloa, S.A. de C.V.

### Microbial Products

Microbial products are living or dormant micro-organisms that are intentionally introduced to a compost, plant, seed or soil in order to gain the beneficial effects of that organism. While most of these organisms are naturally occurring, they may not always be present in sufficient quantity to have any beneficial effect. Many of these organisms can also be genetically modified, so producers must be certain that the form they are using is not prohibited under organic standards. Some inoculums may contain synthetic preservatives such as sodium sulphite, may be grown on genetically modified growth medium (e.g. fungal mycelium on GMO corn) or may be fortified with synthetic fertilizer, so it is very important to document the source of the inoculant. For compost inoculants, the powdered forms are recommended.

The following microbial products are permitted:

- rhizobium bacteria;
- mycorrhizal fungi;
- azolla; and
- yeast and other micro-organisms.

Ionizing radiation is permitted for use on peat moss carrier, before the addition of microbial inoculants. Radiation is otherwise prohibited.

Brand Name	Reviewed	Manufacturer
Aktiv Pulses Granular Mycorrhizal Inoculant with Rhizobium	OMRI Canada	Premier Tech Agriculture
Aktiv Pulses Powder Mycorrhizal Inoculant with Rhizobium	OMRI Canada	Premier Tech Agriculture
Risehop Mycorrhiza	OMRI Canada	Risehop Inc.
Mammoth P Active Microbials Nutrient Liberator	OMRI Canada	Growcentia Inc.
Nitragin Gold Pre-Inoculant Nitrogen-Fixing Bacteria Alfalfa & Sweet Clover	OMRI Canada	Monsanto Company
Micro-TES, Inc. SOS	OMRI Canada	Micro-TES, Inc
Micro-TES, Inc. SSB	OMRI Canada	Micro-TES, Inc
TwinN	OMRI Canada	Mapleton Agri Biotec Pty Ltd
Aktiv Field Crops Powder Mycorrhizal Inoculant	OMRI Canada	Premier Tech Agriculture
Aktiv Field Crops Granular Mycorrhizal Inoculant	OMRI Canada	Premier Tech Agriculture
Nitragin Gold Pre-Inoculant Nitrogen-Fixing Bacteria Alfalfa & Sweet Clover Seed	OMRI Canada	Novozymes BioAg
SOILPRO	OMRI Canada	Micro-TES, Inc

### Micronutrients

Includes micronutrients (trace elements) from non-synthetic or synthetic sources. May be chelated. See Section I *Chelates*.



To be used when soil and plant deficiencies are documented by visual symptoms or by testing of soil and/or plant tissue, or when the need for a preventative application can be documented. Nitrate and ammonium forms of micronutrients are prohibited. See Section I *Boron; Copper; Iron; Manganese; Molybdenum; and Zinc.*

Brand Name	Reviewed	Manufacturer
Boron 15 Maxi Granular	OMRI Canada	Cameron Chemicals, Inc.
Cameron Micronutrients Boron 10% Granular	OMRI Canada	Cameron Chemicals, Inc.

### Mined minerals, unprocessed

Mined minerals include basalt, pumice, sand, feldspar, mica, granite dust and unprocessed rock dust. Minerals extracted from seawater are permitted. A mined mineral shall not have undergone any change in its molecular structure through heating or combining with other substances and shall not be processed or fortified with synthetic chemicals unless listed in Section I.

Sodium nitrate and rock dust that have been mixed with petroleum products, such as those from stone engraving, are prohibited.

Brand Name	Reviewed	Manufacturer
Cascade Minerals Remineralizing Soil Booster	OMRI Canada	Central Oregon Basalt Products, LLC
Penergetic-k ULTRA Soil Additive	OMRI Canada	Penergetic Canada
Sea Minerals FA	OMRI Canada	Sea Minerals FA
CanAmaze VRP	OMRI Canada	Wescan Marketing
Azomite Micronized	OMRI Canada	AZOMITE Mineral Products, Inc.
Montana Grow Natural Fertilizer Beneficial Plant Nutrient Si	OMRI Canada	Ignimbrite, Inc.
SEA-90 Minerals and Trace Elements	OMRI Canada	SeaAgri, Inc.
Polysulphate Standard 0-0-13.5 with 11.8Ca, 3.3Mg, 18.8S / Poly SKMgCa sulphate	OMRI Canada	Everris NA Inc.
Schwarz's Original Andean Mineral Powder	OMRI Canada	Organic Ag Amends LLC
Agrolift 100% Natural Organic Glauconite Green Sand	OMRI Canada	IE MIKHAIL VALERIEVICH BELOV
Spanish River Carbonatite Volcanic Minerals Plus	OMRI Canada	Boreal Agrominerals Inc
OceanSolution Pure 0-0-0.1	OMRI Canada	Ocean Grown, Inc.
Polysulphate Standard Grade	OMRI Canada	ICL Fertilizers
Azomite Field Grade	OMRI Canada	AZOMITE Mineral Products, Inc.

### Molasses

Molasses contains sugars and trace elements, and may be used in compost or compost tea to stimulate soil microorganisms. Molasses shall be organic.

### Molybdenum

Molybdenum is an essential plant micronutrient, required in extremely small quantities (0.0001% of plant mass). It is needed to make amino acids and to help form proteins. It is also essential for nitrogen fixation by nitrogen-fixing bacteria in legumes. Molybdenum tends to be deficient in acid, sandy soils, poorly aerated soils, and soils with low phosphorus. One must be very cautious with molybdenum supplementation, since only minute quantities are required. Excess molybdenum usually does not affect the plant; however, the consumption of high levels by grazing animals can pose problems. The use of molybdenum as a soil amendment is restricted to cases where soil/plant nutrient deficiency is documented by soil or tissue testing. Common forms of molybdenum are ammonium molybdate, sodium



molybdate, molybdenum frit, molybdenum trioxide, and molybdenum sulphide. To be used only to correct documented molybdenum deficiencies. See Section I *Micronutrients*.

### Mulches

See Section II *Mulches*.

### Oilseed meals

Oilseed meal is the product remaining after extracting most of the oil from whole oilseeds. Although usually used as a protein supplement in livestock feed, it can be used as a soil amendment as a slow release source of nitrogen. Soybean meal, for example, contains 7% nitrogen and small amounts of phosphorus. Shall be organic if commercially available. The meal must not be a product of genetically engineered oilseeds.

Brand Name	Reviewed	Manufacturer
Verdanta K-Vita 2-0-20 Homogenous Granular Organic Fertilizer	OMRI Canada	BioWorks, Inc.
EX AgrOrganix Neem Cake 4-1-2	OMRI Canada	Eco Emissions Xchange Pvt. Ltd

### Peat moss / sphagnum moss

Peat moss or sphagnum moss is a very stable organic material that has high moisture retention abilities and can maintain good air pores while not decomposing quickly. Peat moss is quite acidic (pH 3.5-4.0) and limestone is often used to raise the pH.

Brand Name	Reviewed	Manufacturer
Premier Sphagnum Peat Moss	OMRI Canada	Premier Horticulture, Ltd.
PRO-MOSS "FINE"	OMRI Canada	Premier Horticulture, Ltd.
PRO-MOSS "HORT"	OMRI Canada	Premier Horticulture, Ltd.
PRO-MOSS "TBK"	OMRI Canada	Premier Horticulture, Ltd.
Pro-Moss Emerald Professional Fibrous Blond Sphagnum Peat Moss	OMRI Canada	Premier Horticulture, Ltd.

### pH buffers

Shall be non-synthetic, such as citric acid or vinegar. Lye and sulphuric acid are prohibited.

### Phosphate rock

Mineral phosphates come in several forms. Phosphorus frequently occurs as a component of sedimentary clays. When mined, dried and powdered, the particles are small and readily available for plant use. This material is known as colloidal phosphate, soft rock phosphate or calphos. Total phosphate is around 20%, of which 3% is available. The high calcium content of the clay also provides 23% calcium.

Hard rock phosphate refers to phosphorus sources derived from igneous volcanic deposits consisting of the mineral apatite. Hard rock phosphate is mined from natural deposits and ground into powder. After grinding, it may be granulated with binders such as lignosulfonate or molasses. Although apatite contains about 40% total phosphate, very little of this is immediately available. Due to their slow availability, results from applying mineral phosphates may not be apparent in the first cropping year. Rock phosphate may not be effective at supplying phosphorus in high pH soils.

Shall not be fortified or processed with synthetic chemicals. Cadmium shall not exceed 90 mg/kg P<sub>2</sub>O<sub>5</sub>.

Brand Name	Reviewed	Manufacturer
Roca Fosfórica 26 Natural Extra Fina	OMRI Canada	Fosforita de Mexico S.A. de C.V.
Rock Phosphate (Granulated) 0-3-0	OCQV	Gaia Green Products Ltd.



### Plants and plant by-products

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. Wastes from crops that have been treated or produced with prohibited substances may be used as composting feedstocks.

For processing of plant by-products, see Section I *Extractants*.

Sawdust, wood chips and shavings may be used for mulching if they are obtained or derived from wood that has not been treated with paint or prohibited substances.

Brand Name	Reviewed	Manufacturer
Ex AgrOrganix Neem Oil	OMRI Canada	Eco Emissions Xchange Pvt. Ltd.
CoirPlus Premium Coco Peat	OMRI Canada	CoirPlus Inc.
Premium Coir FiberCoir Products Coconut Coir	OMRI Canada	CoirPlus Inc.
Ugro Coco XL Organic	OMRI Canada	Simply Organic

### Pomaces

Feedstocks shall be from organically grown fruits or vegetables. Non-organic pomaces shall be composted. See Section I *Compost feedstocks*.

### Potassium

Potassium is needed by plants for various metabolic activities, including water use and energy release. Crops with adequate potassium will have stronger stocks and stems, produce lots of sugar and protein and be more disease resistant.

The following potassium sources are permitted:

- langbeinite, mined sulphate of potash magnesia and mined potassium salts (sylvinite and kainite);
- potassium rock powder—includes basalt, biotite, mica, feldspar, granite and greensand;
- potassium chloride (KCl)—muriate of potash and rock potash. KCl shall not cause salt buildup in soil through repeated application;
- potassium sulphate—shall be produced by combining brines from seabed deposits and mined minerals. Potassium sulphate made using reactants (such as sulphuric acid or ammonia) is prohibited. Fortification with synthetic chemicals is prohibited.

Brand Name	Reviewed	Manufacturer
Allganic Potassium Sulfate of Potash Granular 0-0-51	OMRI Canada	SQM North America Corp.
Allganic Potassium Sulfate of Potash Water Soluble 0-0-52	OMRI Canada	SQM North America Corp.
Mined Potassium Sulphate 0-0-50	OCQV	Gaia Green Products Ltd.

### Potting soil

In the production of field transplants or in greenhouse crop production, various forms of potting media are available for the organic producer. Transplanting media may be composed of a wide array of natural and some artificial materials but must be composed entirely of allowed substances. These include soil, sand, compost, bark, peat moss, paper (glossy paper and paper with coloured inks are not permitted), alfalfa meal, sawdust (from unpainted and untreated wood), clay, perlite, vermiculite, and limestone. Any amendment that is allowable under the Canadian standards can be added to meet a producer's specific needs. Shall not contain synthetic wetting agents or synthetic fertilizers.

Brand Name	Reviewed	Manufacturer
CIL Plus Potting Soil	ECOCERT	PREMIER TECH HOME AND GARDEN INC.



Brand Name	Reviewed	Manufacturer
Potting Soil	ACO	Cardwell Farms Compost
OM1	OCQV	Berger
OM2	OCQV	Berger
OM4	OCQV	Berger
OM6	OCQV	Berger
Organic Seed & Herb Soil	Pro-Cert	ASB Greenworld

### Seaweed and seaweed products

See Section I *Aquatic plants and aquatic plant products*.

### Shells from aquatic animals

The shells of lobster, crab, oyster, mussel and shrimp are rich in nitrogen, calcium, and other minerals. A by-product of seafood processing, shell waste is finding its way into farm fields. Although fresh waste can be incorporated directly into the soil, it is usually composted or processed to reduce the attractiveness to flies. Analysis will vary depending on the composition and handling of the shell waste. Includes chitin.

### Soil

From organic sources. When new production units are added to an existing organic operation, the operator shall provide records to show that prohibited substances have not been used for at least 36 months (This standard shall be fully applied on a production unit for at least 12 months before the first harvest of organic products. Prohibited substances shall not have been used for at least 36 months before the harvest of an organic crop.) and verification shall be conducted before the first harvest of product from this new production unit.

The Canadian Organic Products Regulations require operators to document that they have not used prohibited substances. The Organic Products Regulations also require that, in the case of an initial application for an organic certification of field crops, the application shall be filed 15 months before the day on which the product is expected to be marketed. During that period of time, compliance with this standard will be assessed by the certification body and this assessment must include at least one inspection of the production unit, during production, in the year before field crops may be eligible for certification and one inspection, during production, in the year field crops are eligible for certification.

### Sphagnum moss

Shall not contain synthetic wetting agents.

### Stillage and stillage extract

Ammonium stillage is prohibited.

Brand Name	Reviewed	Manufacturer
Verdanta PL-2 2-0-6 Liquid Suspension Organic Fertilizer	OMRI Canada	BioWorks, Inc.

### Sulphur, elemental

Sulphur is an essential component in proteins and fats, and is particularly important in nitrogen-fixing microorganisms. While sulphur deficiency was rarely a problem in the past, improvements in air quality standards across Canada and the US have resulted in a reduction in atmospheric deposition of sulphur. On sandy soils where soil organic matter is low, sulphur levels may require supplementation. Many natural compounds used for other purposes contribute trace amounts of sulphur as well. Due to its reaction with the soil environment, elemental sulphur lowers the pH and for this reason is commonly used as a soil acidifier. Non-synthetic elemental sulphur may be used as a soil amendment where more buffered sources of sulphur are not appropriate, and as a foliar application. Chemically synthesized



substances shall not be added. Chemical treatment is prohibited.

### Surfactants

Non-synthetic substances.

See Section I *Formulants*, *Wetting agents*, and Section II *Soaps; Vegetable oils*.

### Vermicasts

See Section I *Worm castings*.

### Vitamins

Non-synthetic sources of all vitamins and synthetic sources of vitamins B1, C (ascorbic acid) and E are permitted for use in organic crop production.

### Wetting agents

Non-synthetic wetting agents, including saponins and microbial wetting agents.

### Wood ash

See Section I *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 Section I *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 *Guidelines for Compost Quality*; or

b) that best practices known to eliminate human pathogens during vermicomposting have been used.

See Section I *Microbial products* for information on compost starters.

Brand Name	Reviewed	Manufacturer
Earth Alive Earthworm Castings - Fine Grain	OMRI Canada	Earth Alive Clean Technologies
Earthworm Castings	Pro-Cert	Gro4 Organics Inc.
Worm Castings 100%	OCQV	Gaia Green Products Ltd.

### Yeast

See Section I *Microbial products*.

### Zinc

Zinc is an essential plant micronutrient necessary for the transformation of carbohydrates and is essential for plant hormone balance, especially auxin activity. Zinc tends to be deficient in high phosphorus soil, high pH soil, cool and/or wet soil and areas where the subsoil has been exposed (low organic matter).

Zinc oxide and zinc sulphate may be used to correct a documented zinc deficiency. See Section I *Micronutrients*.

Brand Name	Reviewed	Manufacturer
ZincMax Lite	ECOCERT	Nutriag Ltd.



## Section II: Crop Production Aids and Materials

### Acetic acid

Non-synthetic sources.

As an adjuvant, a pH regulator and for weed control.

### Amino acids

Shall be from non-synthetic sources. Amino acids are considered non-synthetic if they are:

- a) produced by plants, animals and micro-organisms; and
- b) extracted or isolated either by hydrolysis or by other non-chemical means (example: physical extraction).

May be used as plant growth regulators or as chelating agents.

Brand Name	Reviewed	Manufacturer
BioLife S80 Organic Nitrogen Fertilizer Based on Hydrolyzed Proteins, Amino Acids	OMRI Canada	Suboneyo Chemicals & Pharmaceuticals P. Limited
AgriLife 72 - Organic Fertilizer Input Based on Hydrolyzed Proteins, Arginine Glutamine Peptides	OMRI Canada	Suboneyo Chemicals & Pharmaceuticals P. Limited
ON-Gard 5-0-0	OMRI Canada	BioWorks, Inc.
NITROKICK SN16: Dry Soluble Organic Nitrogen Fertiizer Input based on Hydrolyzed Proteins, Amino acids	OMRI Canada	Suboneyo Chemicals & Pharmaceuticals P. Limited

### Ammonium carbonate

As an attractant in insect traps.

### Aquatic plants and aquatic plant products

Non-synthetic extracts are permitted. Extraction with synthetic solvents is prohibited except with, in order of preference:

- a) potassium hydroxide; b) sodium hydroxide;
- provided the amount of solvent used does not exceed the amount necessary for extraction. The manufacturer shall prove the need to use sodium hydroxide.

Shall not contain synthetic preservatives, such as formaldehyde.

### Anthropod pathogens

See Section II *Biological organisms*.

### Anthropod predators and parasitoids

See Section II *Biological organisms*.

### Anthropods

See Section II *Biological organisms*.

### Ascorbic acid (vitamin C)

Non-synthetic sources may be used to promote growth.

Synthetic and non-synthetic sources may be used as a pH regulator.

### Baits for rodent traps

Baits shall not contain synthetic substances. Rodent traps should be used sparingly if needed.

### Bentonite

See Section I *Mined minerals*, unprocessed.



Brand Name	Reviewed	Manufacturer
Penergetic-p ULTRA for Plants	OMRI Canada	Penergetic Canada
Penergetic-k	OMRI Canada	Penergetic Canada

### Biodegradable plant containers

Biodegradable planting containers (for example pots or cell packs) may be left to decompose in the field if all ingredients are listed in Section I.

### Biodynamic preparations for compost

All biodynamic preparations are allowed for use.

### Biological organisms

Biological organisms (living, dead or as extracts), such as viruses, bacteria, protozoa, fungi, insects and nematodes. Some examples are *Bacillus thuringiensis*, spinosad and granulosis.

Used to benefit plant production by reducing pest populations.

Brand Name	Reviewed	Manufacturer
Taegro 2 BioFungicide Wettable Powder	OMRI Canada	Novozymes Biologicals, Inc.
Cease Biological Fungicide Aqueous Suspension Biofungicide	OMRI Canada	BioWorks, Inc.
Bayer Serenade CPB An Aqueous Suspension Biofungicide	OMRI Canada	Bayer CropScience Inc.
nemycel	OMRI Canada	e-nema GmbH
Pulitore Bactericida Microbial Liquido Soluble	OMRI Canada	Azul Natural S.A. de C.V.
Bayer Rhapsody ASO Fungicide	OMRI Canada	Bayer CropScience Inc.
Bayer Serenade OPTI A Wettable Powder Biofungicide	OMRI Canada	Bayer CropScience Inc.
Bayer Serenade Max A Wettable Powder Biofungicide	OMRI Canada	Bayer CropScience Inc.
Bayer Serenade SOIL An Aqueous Suspension Biofungicide	OMRI Canada	Bayer CropScience Inc.
Venerate Bioinsecticide	OMRI Canada	Marrone Bio Innovations
Opportune Pre and Post-Emergent Herbicide	OMRI Canada	Marrone Bio Innovations
Grandevo	OMRI Canada	Marrone Bio Innovations
DiPel 2X DF Biological Insecticide Dry Flowable (Wettable Granules) Commercial	OMRI Canada	Valent BioSciences Corp.

### Borate

Mined sources of sodium tetraborate and octaborate may be used as wood preservatives.

### Boric acid

May be used for structural pest control (example: for ants). Direct contact with organic food or crops is prohibited.

### Botanical pesticides

Botanical pesticides shall be used in conjunction with a biorational pest management program. They shall not be a farm plan's 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.



Brand Name	Reviewed	Manufacturer
Regalia 12 Biofungicide	OMRI Canada	Marrone Bio Innovations
HUMA GRO PROMAX	OMRI Canada	Bio Huma Netics, Inc
HUMA GRO PROUD 3	OMRI Canada	Bio Huma Netics, Inc
HUMA GRO TURF PROMAX	OMRI Canada	Bio Huma Netics, Inc
HUMA GRO TURF PROUD 3	OMRI Canada	Bio Huma Netics, Inc
Timorex Gold A Broad Spectrum Biofungicide Organic Fungicide	OMRI Canada	Stockton Israel Ltd.

### Calcium chloride

Non-synthetic, food-grade sources.

To address plant nutrient deficiencies and physiological disorders.

### Calcium lignin sulphonate

See Section II *Lignin sulphonates*.

### Calcium polysulphide

See Section II *Lime sulphur*.

### Calcium silicate

Non-synthetic sources.

To address plant nutrient deficiencies and physiological disorders.

Brand Name	Reviewed	Manufacturer
VANSIL W-10 Wollastonite	OMRI Canada	Vanderbilt Minerals, LLC
VANSIL W-30 Wollastonite	OMRI Canada	Vanderbilt Minerals, LLC
VANSIL W-20 Wollastonite	OMRI Canada	Vanderbilt Minerals, LLC
VANSIL W-50 Wollastonite	OMRI Canada	Vanderbilt Minerals, LLC
VANSIL W-40 Wollastonite	OMRI Canada	Vanderbilt Minerals, LLC

### Carbon dioxide

For soil and greenhouse use and for controlled atmosphere storage.

### Chelates

Non-synthetic and listed synthetic chelates are permitted. See Section II *Lignin sulphonates*.

### Cholecalciferol (vitamin D<sub>3</sub>)

Cholecalciferol is an allowable input for the control of mice and rats in greenhouses and outdoors, after other methods of pest control have proven ineffective. This is not an allowed pest control option inside storage or food processing buildings.

### Citric acid

Non-synthetic and synthetic sources may be used as a chelating agent and to adjust pH.

### Copper

The following copper products are permitted:

- a) for use as a wood preservative or for disease control—copper hydroxide;
- b) for use as a fungicide on fruits and vegetables—copper sulphates, Bordeaux mix, copper oxychloride and copper oxide.



Shall be used with caution to prevent excessive copper accumulation in the soil. Copper buildup in soil may prohibit future use.

Visible residue of copper products on harvested crops is prohibited.

### **Diatomaceous earth**

Diatomaceous earth (DE) is a pure form of silica formed from the fossil remains of algae. It has a wide range of applications, from insect control in the garden, control of insects in stored grain, to its use as a filtration agent in food processing. Diatomaceous earth particles resemble bits of broken glass and are drawn to a pest by static electricity. The sharp edges of the silica puncture the pest and kill by dehydration. If ingested by an insect, the silica disrupts the insect's breathing, digestion and reproduction. Because the effects of DE are indiscriminate, it will kill beneficial insects as well as targeted pests. In addition, DE dust is harmful if inhaled. It must therefore be used with caution. Non-heated forms are permitted. Synthetic pesticides and synergists shall not be added.

<b>Brand Name</b>	<b>Reviewed</b>	<b>Manufacturer</b>
DE-cide Nature's Cutting Edge Insecticide	OMRI Canada	Absorbent Products Ltd.
Last Crawl DEstroyer Insecticide Powder	OMRI Canada	Absorbent Products Ltd.

### **Dormant oils**

For use as a dormant spray on woody plants. Shall not be used as a dust suppressant.

### **Dust suppressants**

Non-synthetic substances, or substances listed in Sections I and II, such as Lignin sulphonate, Molasses and Vegetable oils are permitted. Petroleum products are prohibited.

### **Extractants**

Permitted extractants include non-synthetic substances such as cocoa butter, lanolin, animal fats, alcohols and water. Extraction with synthetic solvents is prohibited, except as specified in the annotations of substances listed in Section II.

### **Ferric phosphate (iron ortho-phosphate, iron phosphate)**

Permitted as a molluscicide. Shall be used in such a manner that runoff into water bodies is prevented. Contact with crops is prohibited.

<b>Brand Name</b>	<b>Reviewed</b>	<b>Manufacturer</b>
Ferramol Slug and Snail Bait	OMRI Canada	W Neudorff GmbH KG
Sluggo Professional Slug and Snail Bait	OMRI Canada	Engage Agro Corporation

### **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.

### **Formulants**

Formulants may be used in conjunction with substances listed in Section II as follows:

- Formulants classified in PMRA List 4A or 4B or non-synthetic may be used with the following substances: adhesives for sticky traps and barriers, ammonium carbonate, baits, borate, boric acid, pesticides, dormant oils, hydrogen peroxide and soaps.
- Formulants classified in PMRA List 3 may be used with passive pheromone dispensers.
- Formulants used with all other substances listed in Section II shall be non-synthetic unless specified in the annotation as being permitted.



Brand Name	Reviewed	Manufacturer
Momentive Silwet 408 Surfactant	OMRI Canada	Momentive Performance Materials
Momentive Silwet 719 Spreader	OMRI Canada	Momentive Performance Materials

### Growth regulators for plants

Non-synthetic plant hormones, such as gibberellic acid, indoleacetic acid and cytokinins, are permitted.

### Homeopathic preparations

All homeopathic preparations are allowed.

### Hormones

See Section II *Growth regulators for plants*

### Hydrated lime

For plant disease control.

### Hydrogen peroxide

Permitted for use as a fungicide.

### Kaolin clay

Kaolin clay and calcined kaolin clay. Addition of synthetic chemicals to kaolin clay during calcination is prohibited. Kaolin clay is a mineral that creates a non-toxic particle film that places a barrier between a pest and its host plant. This barrier acts as an irritant to attacking insects and its reflective properties help to disguise the plant from attack. It is important to note that only carefully processed kaolin clay combined with an adjuvant (improves adhesion to plants) can be used as a foliar spray. Non-processed kaolin clay can be phytotoxic when applied to leaves. Kaolin clay is not toxic to mammals or the environment.

In Canada, a kaolin clay product is registered for use on various pome fruits to reduce damage from a variety of pests including pear psylla, tarnished plant bug, leafrollers, leafhoppers, apple maggot, plum curculio and first generation codling moth. This product is also registered on cucurbit crops to suppress cucumber beetles. The product has received good reviews from commercial apple growers for its ability to reduce sunscald on “fair skinned” cultivars. In dry climatic conditions, Surround WP may be quite persistent on the crop. In wet growing conditions, however, growers will need to reapply the product every 7-14 days, or sooner if a heavy rainfall occurs. Subsequent applications are also required to add coverage for new growth and compensate for wind erosion.

Brand Name	Reviewed	Manufacturer
Surround WP Crop Protectant	OMRI Canada	Tessenderlo Kerley Inc.

### Lignin sulphonates

Lignosulphonic acid, calcium lignosulphate and sodium lignosulphate. Permitted as a chelating agent, as a formulant ingredient and as a dust suppressant. Ammonium lignosulphate is prohibited.

### Lime sulphur (calcium polysulphide)

Permitted on plants as:

- a) a fungicide;
- b) an insecticide; and
- c) an acaricide (mite control).

### Magnesium chloride

Non-synthetic sources.



## Mulches

Organic plant residues may be used for mulching. If organic plant materials are not readily available, non-organic, non-genetically engineered sources of straw, leaves, grass clippings or hay may be used. Prohibited substances shall not have been used on these materials for at least 60 days before harvest.

Sawdust, wood chips and shavings may be used for mulching if they are obtained or derived from wood that has not been treated with paint or prohibited substances.

Newspaper and paper mulch: 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 Sections I or II. Biodegradable polymers and Carbon Black from GE or petroleum sources are not permitted.

Brand Name	Reviewed	Manufacturer
Grassoline Brand Aqua Mulch	OMRI Canada	Vancouver Island Renewable Resources LTD
CAO DÉCOR Cocoa Shell Mulch	OCQV	Fafard
Greenhouse Gold Dark Bark Mulch	Pro-Cert	Envirem Organics Inc.

## Nitrogen

For controlled atmosphere storage.

## Oxygen

For controlled atmosphere storage.

## Peracetic (peroxyacetic) acid

Permitted for:

- a) controlling fire blight bacteria; and
- b) disinfecting seed and asexually propagated planting material. See Section II *Seed treatments; Treated seeds*.

## pH buffers

Shall be non-synthetic, such as citric acid or vinegar. Lye and sulphuric acid are prohibited.

## Pheromones and other semiochemicals

Pheromones are chemicals released by an insect (or other animal) that enable it to communicate with members of its own species. There are many different types of insect pheromones. Some are used to signal danger to other insects. Many others are sex attractants, spread by one sex (usually the female) to lure potential mates. The use of insect pheromones (or their chemical relatives) has had a major impact on pest control strategies.

There are two major approaches to the use of pheromones as insect control. Pheromones can be spread over a large area to effectively confuse the males, thus reducing the occurrence of successful matings. Pheromones can also be used as a sex attractant for either trapping or monitoring purposes. They are species-specific and non-toxic, with no impact on non-target species. Synthetic and non-synthetic pheromones and semiochemicals are permitted for pest control. Use in pheromone traps or passive dispensers.

## Plant extracts, oils and preparations

Permitted extractants include: cocoa butter, lanolin, animal fats, alcohols and water. Extraction with synthetic solvents is prohibited except with, in order of preference:



a) potassium hydroxide; b) or sodium hydroxide; provided the amount of solvent used does not exceed the amount necessary for extraction. The manufacturer shall prove the need to use sodium hydroxide. For pest control (disease, weed and insect). Clove oil is permitted for sprout inhibition in potatoes.

Brand Name	Reviewed	Manufacturer
Penetrate w.n.g. Penetrate 50	OMRI Canada	Distributors Processing, Inc.
Regalia Maxx Biofungicide Liquid Concentrate Commercial	OMRI Canada	Marrone Bio Innovations
Regalia Biofungicide Concentrate	OMRI Canada	Marrone Bio Innovations
EX AgrOrganix Neem Oil	OMRI Canada	Eco Emissions Xchange Pvt. Ltd

### Plant protectants

Non-synthetic substances including, but not limited to: calcium carbonate, diatomaceous earth, kaolin clay, pine oil, pine resin and yucca. White wash is permitted for use on trees to protect against sunburn and southwest disease.

Shall be used to protect plants from harsh environmental conditions, such as frost and sunburn, infection, the buildup of dirt on leaf surfaces, or injury by a pest.

### 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.

### Potassium bicarbonate

Permitted for pest and disease control in greenhouses and other crops. It is a fungicide for use against powdery mildew and early blight. Potassium bicarbonate acts by inhibiting the growth of the fungus' cell wall. It is a contact fungicide that must be applied with sufficient water to ensure complete plant coverage. Potassium bicarbonate is best applied at the first onset of disease.

Brand Name	Reviewed	Manufacturer
PB133	OMRI Canada	Kidamaoda, LLC

### Pyrethrum

Shall be combined with acceptable formulants listed in Section II. See Section II *Botanical pesticides* for restrictions.

### Quick lime (calcium oxide)

Shall not be used as a fertilizer or as a soil amendment.

### Repellents

Shall be derived from a non-synthetic source, such as sterilized blood meal, rotten eggs, hair or predator scents. Shall not contain synthetic additives.

### Salt

Non-synthetic sources of sodium chloride and calcium chloride. For disease control and prevention in mushroom production.

### Seaweed and seaweed products

See Section II *Aquatic plants and aquatic plant products*.



### Seed treatments

Microbial products, kelp, yucca, gypsum, clays and botanicals. See Section II *Peracetic acid; Treated seeds*.

Brand Name	Reviewed	Manufacturer
Aktiv Speciality Crops Encrusting	OMRI Canada	Premier Tech Agriculture

### Shell from aquatic animals

Includes chitin.

### Soaps

Soaps (including insecticidal soaps) shall consist of fatty acids derived from animal or vegetable. Insecticidal soaps dissolve the waxy cuticle layer of the insect, thus effectively dehydrating them. They are most commonly used against aphids and whiteflies, but will also kill earwigs, fleas, mites, thrips and ticks. Due to their ability to dissolve waxy surfaces, they can also damage the leaves of plants if the solution is allowed to remain in contact with the plant.

Insecticidal soaps are most effective when applied directly to the target insect while avoiding open blooms. They can injure beneficial insects; however, once dry, they do not have any residual effect on non-target insects. In controlled environments, such as greenhouses, insecticidal soaps are used against pests. Afterwards beneficial insects can be introduced without the risk of residual effects.

Brand Name	Reviewed	Manufacturer
Moss-Aide Moss Killer Commercial Concentrate Herbicide Solution	OMRI Canada	W Neudorff GmbH KG
KOPA Insecticidal Soap	OMRI Canada	W Neudorff GmbH KG
Neudosan Commercial	OMRI Canada	W Neudorff GmbH KG

### Soaps, ammonium

Use as a large animal repellent.  
Direct contact with soil or edible portion of crop is prohibited.

### Sodium bicarbonate

For pest and disease control. In greenhouses and for other crops.

### Sodium silicate

For tree fruit and fibre processing.

### Sterile insects

See Section II *Biological organisms*.

### Sugar

Organic sugar may be used as an ingredient in a crop production aid.

### 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

For foliar use. Sulphur is an effective organic fungicide in controlling diseases such as apple and pear scab, powdery mildew, brown rot, leaf spot, cane spot, cane blight and rust blight. It also has efficacy against some species of mites. Fungi absorb the sulphur, which then disrupts electron transfer. This



results in the sulphur being converted to hydrogen sulphide, which is toxic. Sulphur also forms a protective layer that inhibits spore germination. The use of sulphur as a fungicide is restricted to foliar applications. Sulphur applications delayed significantly after the onset of disease symptoms are less effective. Sulphur can cause severe damage to plants, especially in hot weather. Tomatoes, grape, cranberry and melon producers should be particularly cautious.

### Summer oils

On foliage, as suffocating or stylet oils.

Brand Name	Reviewed	Manufacturer
PureSpray GREEN Spray Oil 13E	OMRI Canada	Intelligro
CIVITAS TURF DEFENCE Ready-2-Mix Fungicide for Golf Course Turf	OMRI Canada	Intelligro
CIVITAS Fungicide for Golf Course Turf	OMRI Canada	Petro Canada Lubricants Inc., A Suncor Energy Business
PureSpray GREEN Concentrate Insecticide	OMRI Canada	Petro Canada Lubricants Inc., A Suncor Energy Business

### Surfactants

Non-synthetic substances.

See Section II *Soaps; Vegetable oils; Wetting agents*.

### Transplant and potting media

Shall be composed entirely of permitted substances.

Brand Name	Reviewed	Manufacturer
Shrara Premium Coco Peat	OMRI Canada	Shrara Agro Products
PRO-MIX MP Mycorrhizae Organik	OMRI Canada	Premier Horticulture, Ltd.
AGRO MIX 02	ECOCERT	Scotts Canada Ltée fas Fafard et Frères
AGRO MIX 06	ECOCERT	Scotts Canada Ltée fas Fafard et Frères
AGRO MIX OS	ECOCERT	Scotts Canada Ltée fas Fafard et Frères
AGRO MIX N7 Bio	ECOCERT	Scotts Canada Ltée fas Fafard et Frères

### Treated seed

Seed treated with biological management agents is permitted.

Seed pelletized with clay, gypsum, biological organisms (such as Rhizobium) or other non-synthetic coatings is permitted. Plastic polymer pelletization of seed is prohibited.

See Section II *Peracetic acid; Seed treatments*.

### Tree seals

Plant-based paints are permitted. Shall not be combined with fungicides or other synthetic chemicals.

See Section II *Plant Protectants*. For planting stock: synthetic 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.

### Vegetable oils

Plant oils shall not contain synthetic pesticides.

For use as spreader-stickers, surfactants and carriers.



### Vinegar (acetic acid)

Non-synthetic sources. See Section II *Acetic acid*.

### Water, recycled

Recycled water shall only contain substances listed in Sections I and II.

Recycled wash water from all organic operations, including dairy operations, may be spread on crop lands. Requirements for land application, as specified in 5.5.2.5 of CAN/CGSB-32.310, shall be met which states:

*The non-composted solid or liquid manure shall be*

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

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

In all other uses, recycled water shall meet applicable irrigation water regulatory requirements.

### Wetting agents

Non-synthetic wetting agents, including saponins and microbial wetting agents, are permitted. See Section II *Soaps*.

Brand Name	Reviewed	Manufacturer
ThermX 15M	OMRI Canada	American Extracts
ThermX 70	OMRI Canada	American Extracts
Yucca Ag-Aide	OMRI Canada	Desert King International, LLC
Yucca Ag-Aide Powder	OMRI Canada	Desert King International, LLC

## Supporting documents

*CAN/CGSB-32.310, Organic Production Systems – General Principles and Management Standards.* (2015). Retrieved from <https://www.tpsgc-pwgsc.gc.ca/ongc-cgsb/programme-program/normes-standards/internet/bio-org/pgng-gpms-eng.html>

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