



Greenhouse Leafy Vegetable Production (Canada)

When planning your next crop of lettuce or leafy vegetables in the greenhouse, give them a healthy start and keep them clean throughout production with the BioWorks family of products. From start to finish, BioWorks has safer products to help you care for your plants, care for your workers, and care for the environment.

Root Disease Control

RootShield® PLUS⁺ WP

RootShield PLUS⁺ WP Biological Fungicide Wetttable Powder (a.i. *Trichoderma harzianum* Rifai strain KRL-AG2 and *Trichoderma virens* strain G-41) grows around roots “shielding” them against root damaging fungi. These beneficial microbes are used for the suppression of root rots caused by *Pythium* spp., *Rhizoctonia* spp., *Fusarium* spp. and *Phytophthora* spp. in commercial greenhouse crops.

- Use as a drench to the planting media
- 4-hour REI, 0-day PHI
- Shelf life: 10 months refrigerated (<4.5 °C); 12 months frozen (<0 °C)
- Hydroponic Systems:
 - RootShield PLUS⁺ WP will pass through watering system filters with screen openings 155 mesh or larger
 - If a sand filter is in use, the product must be injected downstream of the filter to prevent the sand filter from removing the spores of the active ingredients
- Do not remove filters from your system. If your system is designed for, or over-engineered with, 200 mesh filter screens, replace them with 120-155 mesh filter screens. Contact your drip irrigation supplier or the manufacturer for the proper filter size.

RootShield® Granules ([Organic Product Information](#))

RootShield Granules (a.i. *Trichoderma harzianum* Rifai strain KRL-AG2) is designed for media incorporation.

- For small volumes blend 3 Tbsp./ft³ of potting soil
- Shelf life: 12 months refrigerated (<10 °C); 6 months (25 °C)

Product and Application	Rates
<p>RootShield® PLUS⁺ WP</p> <p>Drench immediately after seeding/planting to soil mix or media. For hydroponics, drench cubes just prior to planting.</p>	<p>30-60 g/100 L solution /10m²</p>
<p>RootShield® Granules</p> <p>Incorporate into propagation mix prior to seeding.</p>	<p>600-750 g/m³</p>



Foliar Disease Control

RootShield® HC ([Organic Product Information](#))

RootShield HC (a.i. *Trichoderma harzianum* Rifai strain KRL-AG2) is a useful tool for the suppression of foliar disease caused by *Botrytis cinerea* in greenhouse commercial production of lettuce and other leafy vegetables.

- Apply as a foliar spray every 7-14 days depending upon disease pressure
- 4-hour REI, 0-day PHI
- Shelf Life: 12 months refrigerated (< 4.5 °C)

MilStop® (OMRI Canada)

MilStop (a.i. potassium bicarbonate) is a contact foliar fungicide for control/suppression of powdery mildew in both greenhouse and field production. It kills fungal spores on contact by pulling water from the spores and their growing strands. It also inhibits enzymes involved in fungal cell wall formation by altering the pH on the leaf surface.

- Use sufficient volume of spray solution to obtain complete coverage of foliage and stems. Uniform and complete coverage of the foliage is essential for the most effective results.
- Spray volume per unit of treated area can vary depending upon plant type and stage of development
- Number of applications will depend upon disease pressure. Maximum number of applications per crop is ten (10)
- 4-hour REI, 0-day PHI
- Shelf life: 2+ years. Store cool, (<29 °C) and do not expose to moisture

Product and Application	Rates
RootShield® HC Apply to foliage. Spray to wet but not to runoff.	10 g/L or 10 kg/ha
MilStop® Use enough volume of spray solution to obtain complete coverage of foliage and stems.	0.28-0.56 kg/1000m ²



Insect & Mite Control

BotaniGard® ES and BotaniGard® 22WP

BotaniGard (a.i. *Beauveria bassiana* strain GHA) can be used as a stand-alone or in rotations or tank mixes. This effective biological insecticide is used to control aphids, thrips, whiteflies and other pests. The applied spores infect directly through the insect. A spore adhering to the host will germinate and produce enzymes that attack and dissolve, penetrating the skin and into the body of an insect.

- BotaniGard ES: 4-hour REI, 0-day PHI; Shelf life: 12 months at room temp. (25 °C)
- BotaniGard 22WP: 4-hour REI, 0-day PHI; Shelf life: 9 months at room temp. (25 °C)

SuffOil-X® ([Organic Product Information](#))

SuffOil-X (a.i. mineral oil) suffocates eggs, larvae, nymphs and adult soft bodied insects and mites suppressing their populations. SuffOil-X is a pre-emulsified light spray oil which stays in suspension and provides uniform coverage with less chance of phytotoxicity.

- 12-hour REI, 12-hour PHI

Product and Application	Rates
BotaniGard® ES Spray to wet but not to runoff. Aphids and Whiteflies Thrips	0.5-1 L/400 L water 2 L/400 L water
BotaniGard® 22WP Spray to wet but not to runoff: Aphids and Whiteflies Thrips	250-500 g/400 L water 0.5-1 kg/400 L water
SuffOil-X® Apply as a foliar spray. Begin applications when pests appear and repeat as needed at 7-14 day intervals.	12.9 L/1000 L



Nutrition Management

ON-Gard® 5-0-0 (OMRI Canada)

ON-Gard is an innovative fertilizer based on 100% enzymatically extracted plant-derived amino acids and peptides. It is 100% water soluble and is rapidly absorbed by leaves and roots and translocated throughout the plant. ON-Gard enhances and augments uptake of other nutrients. Use as a foliar spray or drench.

- Shelf life 2 years when stored cool (<24 °C)

ON-Gard® 1-0-0 + 5%Ca ([Organic Product Information](#))

ON-Gard CALCIUM is a unique organic liquid calcium formulated with plant derived soy protein hydrolysate and calcium chloride for the treatment and prevention of calcium deficiency in lettuce and associated tip burn. Use as a foliar spray.

- Shelf life 2 years when stored at room temperature or refrigerated (stable between 4° and 35° C)

Verdanta® K-Vita® 2-0-20 (OMRI Canada)

K-Vita offers a slow, continuous release of extra potassium to assist in producing stockier, more robust plants with shorter internodes. Homogeneous MINIGRAN® granules provide better nutrient distribution and sustainability. Apply to your starting media or top dressing to carry through potassium.

Verdanta® PL2 2-0-6 (OMRI Canada)

PL-2 is designed to provide supplemental potassium in a liquid feed program. The exact rate of PL-2 depends on the needs of the crop.

**Note: PL-2 is not for use in hydroponic or other recirculation systems.*

Verdanta® OFE 3-0-0 + 3% Iron

Correct iron chlorosis with OFE. An excellent foliar feed that supplies chelated iron from both DTPA and Iron Citrate without leaving a residue. Contains 3% seaweed extract. Excellent foliar feed for better greening and growth.

Product and Application	Rates
ON-Gard® 5-0-0 Apply as a foliar spray to glisten during production. Apply every 15 days and up to 6 times per growing season, OR Drench using sufficient water to penetrate the root zone.	Spray: 250 ml - 2.0 L/100 L (2.5-20 ml/L) Drench: 250 ml - 2.5 L/100 L water (2.5-25 ml/L)
ON-Gard® Calcium 1-0-0 + 5% Ca Apply as a foliar spray using any type of sprayer	250-500 ml/400 L
Verdanta® K-Vita® 2-0-20	3-8 kg/100 m ²
Verdanta® PL-2 2-0-6 Constant liquid feed Periodic liquid feed (2 times weekly)	1-1.5 grams/L 3-4 grams/L
Verdanta® OFE 3-0-0 + 3% Iron	2-2.4 L/ha

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