

# VECTORITE™

 with CR-7

Vectorite with CR-7 is a broad-spectrum preventative microbial biofungicide for the control or suppression of many important plant diseases (e.g., *Botrytis* or Gray Mold, *Sclerotinia*, and *Monilinia*) and is designed to be applied to crops by commercially reared bumble bees, exclusively using Bee Vectoring Technology Inc. (BVT)-approved hive dispensers.

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## Powder Biofungicide for Bumble Bee Vectoring

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Can Be Used in Organic Production

**ACTIVE INGREDIENT:** *Clonostachys rosea* strain CR-7\* .....5.00%  
**OTHER INGREDIENTS:** .....95.00%  
**TOTAL:** .....100.00%

\*Vectorite with CR-7 contains not less than 3 X 10<sup>8</sup> CFU/g.

**KEEP OUT OF REACH OF CHILDREN**

**CAUTION**

<b>FIRST AID</b>	
<b>If inhaled</b>	<ul style="list-style-type: none"> <li>• Move person to fresh air.</li> <li>• If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably by mouth-to-mouth, if possible.</li> <li>• Call a poison control center or doctor for treatment advice.</li> </ul>
<b>HOTLINE NUMBER</b>	
<p>Have the product container or label with you when calling a poison control center or doctor or going for treatment. For information on this pesticide product (including general health concerns or pesticide incidents), call the National Pesticide Information Center at 1-800-858-7378, Monday through Friday, 8:00 AM to 12:00 PM Pacific Time. In the event of a medical emergency, call your poison control center at 1-800-222-1222.</p>	

See insert label for Precautionary Statements, Directions for Use, and Storage and Disposal.

**EPA Reg. No.:** 90641-2

**EPA Est. No.:** 90641-CAN-1

**Net Weight: 22 oz (624 grams) of total Vectorite with CR-7**

48 VectorPak™ trays for bumble bee hives: each tray containing 0.46 oz (13 grams) of Vectorite with CR-7

**Lot No:**

**Manufactured by:**

Bee Vectoring Technology Inc. (BVT)  
4160 Sladeview Crescent #7  
Mississauga, ON L5L 0A1 Canada

**Vectorite™** is a trademark of Bee Vectoring Technology Inc.

**VectorPak™** is a trademark of Bee Vectoring Technology Inc.

US Patents: US 9,380,777 B2, US 9,968,099 B2, US 9,758,758 B2, US 10,273,445 B2

Read the **CONDITIONS FOR SALE AND LIMITATIONS OF WARRANTY AND LIABILITY** section before use.

Use of this product indicates acceptance of the terms presented in the **CONDITIONS FOR SALE AND LIMITATIONS OF WARRANTY AND LIABILITY** section.

## PRECAUTIONARY STATEMENTS

### HAZARDS TO HUMANS AND DOMESTIC ANIMALS

**CAUTION:** Harmful if inhaled. Avoid breathing dust. Remove and wash contaminated clothing before reuse.

Use of this product requires working in an environment with live bees and exercising caution when doing so is therefore required. Individuals can have allergic reactions to bee stings ranging from temporary pain and discomfort to a severe allergic reaction that may require emergency treatment. Refrain from working with or around bees, if you have confirmed severe allergic reactions to bee stings. **Call 911 or other emergency services**, if you're having a serious reaction to a bee sting that suggests anaphylaxis, even if it's just one or two signs or symptoms. If you were prescribed an emergency epinephrine autoinjector (EpiPen, Auvi-Q, and others), use it as your doctor directed.

When working with bee hives, follow local/industry guidelines to ensure safe working distance from dwellings, roads, and people.

### PERSONAL PROTECTIVE EQUIPMENT (PPE)

Applicators and other handlers must wear:

- Long-sleeved shirt and long pants
- Shoes plus socks

Mixers/loaders and applicators must wear a minimum of a NIOSH-approved particulate filtering facepiece respirator with any N, R, or P filter; OR a NIOSH-approved elastomeric particulate respirator with any N, R, or P filter; OR a NIOSH-approved powered air-purifying respirator with an HE filter. Repeated exposure to high concentrations of microbial proteins can cause allergic sensitization.

In conjunction with the PPE specified above, protective bee suits must be worn by individuals who will interact with the bee hives (e.g., individuals that place or refill the trays with fresh product).

Follow the manufacturer's instructions for cleaning/maintaining PPE. If no such instructions for washables are available, use detergent and hot water. Keep and wash PPE separately from other laundry.

### USER SAFETY RECOMMENDATIONS

- Users should wash hands before eating, drinking, chewing gum, using tobacco, or using the toilet.
- Users should remove clothing/PPE immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing.
- Users should remove PPE immediately after handling this product. If worn, wash the outside of gloves before removing. As soon as possible, wash thoroughly and change into clean clothing.

### ENVIRONMENTAL HAZARDS

For terrestrial uses - Do not apply directly to water, or to areas where surface water is present or to intertidal areas below the mean high-water mark. Do not contaminate water when disposing of equipment washwater or rinsate.

## DIRECTIONS FOR USE

It is a violation of Federal law to use this product in a manner inconsistent with its labeling. Do not apply this product in a way that will contact workers or other persons, either directly or through drift. Only protected handlers may be in the area during application. For any requirements specific to your State or Tribe, consult the State or Tribal agency responsible for pesticide regulation.

Read entire label before using this product.

### AGRICULTURAL USE REQUIREMENTS

Use this product only in accordance with its labeling and with the Worker Protection Standard, 40 CFR Part 170. This Standard contains requirements for the protection of agricultural workers on farms, forests, nurseries, and greenhouses, and handlers of agricultural pesticides. It contains requirements for training, decontamination, notification, and emergency assistance. It also contains specific instructions and exceptions pertaining to the statements on this label about restricted-entry interval. The requirements in this box apply to uses of this product that are covered by the Worker Protection Standard.

There is no restricted-entry interval (REI) for this product.

### PRODUCT INFORMATION

Vectorite with CR-7 is a broad-spectrum preventative product for the control or suppression of many important plant diseases (e.g., *Botrytis* or Gray Mold, *Sclerotinia*, and *Monilinia*) and for improvement of plant health, growth, and vigor. The carrier, **Vectorite** powder, is offered in single-use **VectorPak** trays that are designed for optimum acquisition of the microbial active ingredient by bumble bees and its subsequent delivery to plants during the bloom period. Vectorite with CR-7 must only be used with BVT-approved hive dispensers.

### BIOLOGICAL PROPERTIES AND MODE OF ACTION

The active ingredient in Vectorite with CR-7, *Clonostachys rosea* strain CR-7, is a biological control agent that acts to outcompete plant pathogens on target crops, enhances plant resistance to pathogens (through induced systemic resistance or ISR), and improves plant health, growth, and vigor.

*Clonostachys rosea* strain CR-7 was isolated from the root of a wheat plant in Canada.

*Clonostachys* is ecologically a pioneer colonizer of senescing or stressed plant tissues. *Clonostachys rosea* strain CR-7 is applied preventatively, so it has enough time to block *Botrytis* and other pathogens by spatial occupation of flower and leaf tissues. Tissue stress or senescence (such as by pathogens) triggers rapid growth of *Clonostachys rosea* strain CR-7, such that it densely occupies the tissues before pathogens such as *Botrytis*. Pathogens do not displace *Clonostachys* species under normal conditions.

After application to the plant, *Clonostachys rosea* strain CR-7 establishes within the tissues and remains alive but localized where it was applied. Retreatment is necessary to cover new foliage and flowers. Retreatment may also be necessary following a fungicide application, such as in an integrated pest management (IPM) program. Plant health benefits often result in greater yields or quality of produce at harvest, especially when crops are stressed by pathogens or environmental conditions.

## **INTEGRATED PEST MANAGEMENT (IPM)**

Vectorite with CR-7 can be integrated into an overall disease and pest management strategy. Some fungicides could temporarily inhibit the colonization of the active ingredient on the plant; however, the use of Vectorite with CR-7 in the BVT system continuously replenishes the microorganism. Follow disease management practices that are known to reduce disease development. Consult local agricultural authorities for specific IPM strategies developed for your crop(s) and location. If certain conditions persist where the bees cannot fly, and pest or disease pressure becomes excessive, close hives before spraying chemical or biological pesticides to protect the bees. Reopen the hives after the proper interval indicated on the label of the product sprayed. For any chemical or biological pesticide sprayed, consult the label for any potential effect on bees.

## **COMPATIBILITY**

Vectorite with CR-7 must be used as is and is not to be altered or mixed with other components.

## **CROP TOLERANCE**

Vectorite with CR-7 applied by bumble bees has been shown to provide good crop safety under normal growing conditions.

## **USE INSTRUCTIONS**

### **Commercial Bumble Bees – Hive Placement and Replacement:**

Bumble bees deliver product up to 400 yards, so place hives accordingly. Follow your bumble bee supplier's instructions for hive replacement. Depending on the type of hive, replace hives every 4-10 weeks, or if hives suffer a large population loss and/or are no longer active.

The BVT system comprises a bumble bee domicile (hive) with its in-lid dispenser that accepts the Vectorite with CR-7 **VectorPak** trays.

Manage bumble bees according to standard practices for the cropping system (indoor or outdoor) used in the region. Inspect the bee colonies (within the domicile or hive) for strength and incidence of disease before use. Reject or remove weak or dead colonies from the site. Place the hives level in suitable places for deployment on the target crop (in a greenhouse or hoop house, or in or at the edge of the field) at the density as directed in the **PLANT DISEASES AND APPLICATION RATES** table. Do not place hives in low areas subject to water pooling or flooding. If in the field, place the hives on stands and provide waterproof covers for shade and protection from rain, with all of this being held in place with weight to prevent wind damage to the hives. Keep the area around the entrances of the hives free of weeds and grass that would impede bee activity.

When interacting with the hives, work smoothly and avoid jarring them and agitating the bees within. Use protective clothing that is standard for working with bees. Follow the stepwise instructions (including in the hive packaging) for proper set-up of bee hives.

The health of the hives is the responsibility of the grower. If a hive arrives dead, it must be replaced. Adding new trays and ensuring the hives are open are also the responsibility of the grower.

### If Applying Pesticides Other Than Vectorite with CR-7:

Close the gates of the hives to prevent any bees from flying during the spray. Reopen the gates after the proper interval per the label of the applied pesticide. There is a potential hazard for bumble bees, if a hive is closed greater than 24 hours in hot weather (temperatures exceeding 80°F) and/or there is low food supply within the hive.

### Placing or Replacing VectorPak Trays:

Vectorite with CR-7 **VectorPak** trays for bumble bees are preloaded with product. Place one tray per each hive. To place or replace the trays:

1. Close both the in and out gates to the hive.
2. Open the box lid to reveal the plastic inner bee liner and the flip lid.
3. Open the flip lid, take out any used or empty tray from the dispenser, and dispose of according to label instructions.
4. Take the new, unopened tray and lightly shake to make the powder level.
5. Remove the foil by pulling the corner and peeling back. Properly dispose of the foil.
6. Place the new tray in the dispenser and close the flip lid.
7. Close the box lid.
8. Open both gates fully.
9. Check the **PLANT DISEASES AND APPLICATION RATES** table (below) to see frequency of tray changes. The best time to change trays is in the early morning hours before the bees are active.

### PREHARVEST INTERVAL (PHI)

There is no PHI for this product. Vectorite with CR-7 can be applied up to the day of harvest.

### PLANT DISEASES AND APPLICATION RATES

CROP OR CROP GROUPING	DISEASE	APPLICATION INSTRUCTIONS
<b>Bulb Vegetables:</b> Garlic, Leek, Onion, Shallot, and Other Bulb Vegetables	<i>Botrytis</i> , <i>Colletotrichum</i> (Anthracnose)†, <i>Fusarium</i> †, <i>Sclerotinia</i>	2 hives/acre. Place bee hives 4 days prior to first bloom, place product at first bloom, and replace product, as indicated immediately below, throughout bloom.  Replace <b>VectorPak</b> trays every 3-7 days during bloom.
<b>Brassica (Cole) Leafy Vegetables:</b> Broccoli, Cauliflower, Cabbage, Brussels Sprouts, Collards, Kale, Mustard Greens, Kohlrabi, and Other <i>Brassica</i> (Cole) Leafy Vegetables	<i>Alternaria</i> †, <i>Botrytis</i> , <i>Fusarium</i> †, <i>Sclerotinia</i>	1 hive/acre. Place bee hives 4 days prior to first bloom, place product at first bloom, and replace product, as indicated immediately below, throughout bloom.  Replace <b>VectorPak</b> trays every 3-7 days during bloom.

†Not for this use in California

CROP OR CROP GROUPING	DISEASE	APPLICATION INSTRUCTIONS
<b>Legumes Vegetables (Succulent or Dried):</b> Beans, Broad Bean, Chickpea (Garbanzo Bean), Lentil, Peas, Pigeon Pea, Soybean, and Other Legumes Vegetables (Succulent or Dried)	<i>Colletotrichum</i> (Anthracnose)†, <i>Botrytis</i>	2 hives/acre. Place bee hives 4 days prior to first bloom, place product at first bloom, and replace product, as indicated immediately below, throughout bloom.  Replace <b>VectorPak</b> trays every 3-7 days during bloom.
<b>Fruiting Vegetables:</b> Eggplant, Sweet and Hot Peppers, Tomatillo, Tomato, Okra, and Other Fruiting Vegetables	<i>Alternaria</i> †, <i>Botrytis</i> , <i>Colletotrichum</i> (Anthracnose)†, <i>Fusarium</i> †	2-7 hives/acre. Place bee hives 4 days prior to first bloom, place product at first bloom, and replace product, as indicated immediately below, throughout bloom.  Replace <b>VectorPak</b> trays every 3-7 days during bloom.
<b>Cucurbit Vegetables:</b> Cucumber, Melons, Gourd, Pumpkin, Squash, Watermelon, and Other Cucurbit Vegetables	<i>Alternaria</i> †, <i>Botrytis</i> , <i>Didymella</i> †	2 hives/acre. Place bee hives 4 days prior to first bloom, place product at first bloom, and replace product, as indicated immediately below, throughout bloom.  Replace <b>VectorPak</b> trays every 3-7 days during bloom.
<b>Pome Fruit:</b> Apple, Mayhaw, Pears, Quince, and Other Pome Fruit	<i>Alternaria</i> †, <i>Monilinia</i> †	4-6 hives/acre. Place bee hives 4 days prior to first bloom, place product at first bloom, and replace product, as indicated immediately below, throughout bloom.  Replace <b>VectorPak</b> trays every 3-7 days during bloom.
<b>Stone Fruit:</b> Apricot, Cherries, Nectarine, Peach, Plums, Prune (Fresh), and Other Stone Fruit	<i>Monilinia</i> †	4-6 hives/acre. Place bee hives 4 days prior to first bloom, place product at first bloom, and replace product, as indicated immediately below, throughout bloom.  Replace <b>VectorPak</b> trays every 3-7 days during bloom.
<b>Berries:</b> Blackberry, Blueberry, Currant, Elderberry, Gooseberry, Huckleberry, Loganberry, Raspberry, and Other Berries  (see separate grouping for strawberry)	<i>Alternaria</i> †, <i>Botrytis</i> (Gray Mold), <i>Colletotrichum</i> (Anthracnose)†, <i>Monilinia</i> (Mummy Berry)†, <i>Sclerotinia</i>	1-4 hives/acre. Place bee hives 4 days prior to first bloom, place product at first bloom, and replace product, as indicated immediately below, throughout bloom.  Replace <b>VectorPak</b> trays every 3-7 days during bloom.

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CROP OR CROP GROUPING	DISEASE	APPLICATION INSTRUCTIONS
<b>Kiwifruit</b>	<i>Botrytis</i>	4-6 hives/acre. Place bee hives 4 days prior to first bloom, place product at first bloom, and replace product, as indicated immediately below, throughout bloom.  Replace <b>VectorPak</b> trays every 3-7 days during bloom.
<b>Strawberry</b>	<i>Alternaria</i> †, <i>Botrytis</i> (Gray Mold), <i>Colletotrichum</i> (Anthracnose)†, <i>Sclerotinia</i>	1-3 hives/acre. Place bee hives 4 days prior to first bloom, place product at first bloom, and replace product, as indicated immediately below, throughout bloom.  [Bumble bee label] Replace <b>VectorPak</b> trays every 3-7 days during bloom.
<b>Tree Nuts:</b> Almond, Beechnut, Brazil Nut, Butternut, Cashew, Chestnut, Filbert, Hickory Nut, Macadamia Nut, Pecan, Pistachio, Walnut, and Other Tree Nuts	<i>Colletotrichum</i> (Anthracnose)†, <i>Monilinia</i> †, <i>Sclerotinia</i>	4-6 hives/acre. Place bee hives 4 days prior to first bloom, place product at first bloom, and replace product, as indicated immediately below, throughout bloom.  Replace <b>VectorPak</b> trays every 3-7 days during bloom.
<b>Herbs and Spices:</b> Basil, Coriander, Dill, Sage, and Other Herbs and Spices	<i>Alternaria</i> †, <i>Botrytis</i> , <i>Colletotrichum</i> (Anthracnose)†, <i>Fusarium</i> †, <i>Sclerotinia</i>	1 hive/acre. Place bee hives 4 days prior to first bloom, place product at first bloom, and replace product, as indicated immediately below, throughout bloom.  Replace <b>VectorPak</b> trays every 3-7 days during bloom.
<b>Mint</b>	<i>Alternaria</i> †, <i>Botrytis</i> , <i>Colletotrichum</i> (Anthracnose)†, <i>Fusarium</i> †, <i>Sclerotinia</i>	1 hive/acre. Place bee hives 4 days prior to first bloom, place product at first bloom, and replace product, as indicated immediately below, throughout bloom.  Replace <b>VectorPak</b> trays every 3-7 days during bloom.
<b>Oilseeds:</b> Rapeseed, Canola, Mustard Seed, Sunflower, and Other Oilseeds	<i>Sclerotinia</i>	1-6 hives/acre for rapeseed, canola, and mustard seed. 0.3-1 hive/acre for sunflower. Place bee hives 4 days prior to first bloom, place product at first bloom, and replace product, as indicated immediately below, throughout bloom.  Replace <b>VectorPak</b> trays every 3-7 days during bloom.
<b>Flowers:</b> Cut Flowers including but not limited to Roses & Carnations; Bedding Plants	<i>Botrytis</i>	1 hive/1000 square foot of greenhouse space. Place bee hives 4 days prior to first bloom, place product at first bloom, and replace product, as indicated immediately below, throughout bloom.  Replace <b>VectorPak</b> trays every 3-7 days during bloom.

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## STORAGE AND DISPOSAL

Do not contaminate water, food, or feed by storage or disposal.

**Pesticide Storage:** Store in a dry, refrigerated place (~39°F (~4°C)) in original container. Keep from overheating.

**Pesticide Disposal:** To avoid wastes, use all material in this container by application according to label directions. If wastes cannot be avoided, offer remaining product to a waste disposal facility or pesticide disposal program (often such programs are run by state or local governments or by industry). Do not hold product for use in the subsequent season.

**Container Handling:** **VectorPak** trays are nonrefillable. Do not reuse or refill these containers. After use, offer for recycling if available or dispose of in a sanitary landfill or by other procedures approved by state and local authorities. If the outer box is contaminated, dispose of it in the same manner as required for **VectorPak** trays.

## CONDITIONS FOR SALE AND LIMITATIONS OF WARRANTY AND LIABILITY

### IMPORTANT: READ BEFORE USE

Read the entire Directions for Use, Conditions, Disclaimer of Warranties, and Limitations of Liability before using this product. If terms are not acceptable, return the unopened product at once for a refund of the purchase price. By using this product, user or buyer accepts the following Conditions, Disclaimer of Warranties, and Limitations of Liability. These terms may only be modified by a written document signed by a duly authorized representative of Bee Vectoring Technology Inc.

**CONDITIONS:** The directions for use of this product must be followed carefully. However, it is impossible to eliminate all risks associated with the use of this product. Crop injury, ineffectiveness, or other unintended consequences may result because of such factors as weather conditions, the quality of the bees used, presence of other materials, or the manner of use or application, all of which are beyond the control of Bee Vectoring Technology Inc. TO THE EXTENT CONSISTENT WITH APPLICABLE LAW, all such risks shall be assumed by the user or buyer.

**DISCLAIMER OF WARRANTIES:** TO THE EXTENT CONSISTENT WITH APPLICABLE LAW, Bee Vectoring Technology Inc. MAKES NO OTHER WARRANTIES, EXPRESS OR IMPLIED, OF MERCHANTABILITY OR OF FITNESS FOR A PARTICULAR PURPOSE OR OTHERWISE, THAT EXTEND BEYOND THE STATEMENTS MADE ON THIS LABEL. No distributor of Bee Vectoring Technology Inc.'s products is authorized to make any warranties beyond those contained herein or to modify the warranties contained herein. TO THE EXTENT CONSISTENT WITH APPLICABLE LAW, Bee Vectoring Technology Inc. DISCLAIMS ANY LIABILITY WHATSOEVER FOR SPECIAL, INCIDENTAL, OR CONSEQUENTIAL DAMAGES RESULTING FROM THE USE OR HANDLING OF THIS PRODUCT.

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