



WITH THE ACTIVE INGREDIENT RYNAXYPYR®

CHLORANTRANILIPROLE	GROUP	28	INSECTICIDE
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VANTACOR™ insect control is a suspension concentrate. SHAKE WELL BEFORE USING

Contains 5.0 lb. active ingredient per gallon.

<i>Active Ingredient</i>	<i>By Weight</i>
Chlorantraniliprole 3-Bromo-N-[4-chloro-2-methyl-6-[(methylamino)carbonyl]phenyl]-1-(3-chloro-2-pyridinyl)-1H-pyrazole-5-carboxamide	47.85%
<i>Other Ingredients</i>	52.15%
TOTAL	100.0%

EPA Reg. No. 279-9656

EPA Est. No. 279-NY-001

**Nonrefillable Container**

Net: 1 quart

Not for sale, sale into, distribution and/or use in Nassau, Suffolk, Kings, and Queens counties of New York State.

### KEEP OUT OF REACH OF CHILDREN

Si usted no entiende la etiqueta, busque a alguien para que se la explique a usted en detalle. (If you do not understand the label, find someone to explain it to you in detail.)

### FIRST AID

For questions regarding emergency medical treatment, you may contact 1-800-331-3148 for information.

### PRECAUTIONARY STATEMENTS HAZARDS TO HUMANS AND DOMESTIC ANIMALS

When used as directed this product does not present a hazard to humans or domestic animals.

### PERSONAL PROTECTIVE EQUIPMENT (PPE)

Applicators and other handlers must wear:

Long-sleeved shirt and long pants.

Shoes plus socks.

After the product has been diluted in accordance with label directions for use, shirt, pants, socks, and shoes are sufficient Personal Protective Equipment. Follow manufacturer's instructions for cleaning/maintaining personal protective equipment (PPE). If no such instructions for washables exist, 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. Remove clothing immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing.

Sold By



FMC Corporation  
2929 Walnut Street  
Philadelphia, PA 19104

## ENVIRONMENTAL HAZARDS

This pesticide is toxic to aquatic invertebrates, oysters, and shrimp. Do not apply directly to water. Drift and runoff may be hazardous to aquatic organisms in water adjacent to use sites.

### Surface Water Advisory:

This product may impact surface water quality due to runoff of rain water. This is especially true for poorly draining soils and soils with shallow ground water. This product is classified as having high potential for reaching surface water via runoff for several months or more after application. A level, well-maintained vegetative buffer strip between areas to which this product is applied and surface water features such as ponds, streams, and springs will reduce the potential loading of chlorantraniliprole from runoff water and sediment. Runoff of this product will be reduced by avoiding applications when rainfall is forecasted to occur within 48 hours.

### Ground Water Advisory:

This chemical has properties and characteristics associated with chemicals detected in ground water. This chemical may leach into ground water if used in areas where soils are permeable, particularly where the water table is shallow.

## DIRECTIONS FOR USE

It is a violation of Federal law to use this product in a manner inconsistent with its labeling.

VANTACOR™ insect control must be used only in accordance with the directions on this label, or as otherwise permitted by FIFRA. Always read the entire label, including the Limitation of Warranty and Liability.

VANTACOR insect control may be used on crops on this label that are grown for seed production.

## RESTRICTIONS

- Do not treat plants grown for transplanting. Not for use in nurseries, plant propagation houses, or greenhouses by commercial grower or any other transplant producers on plants being grown for transplanting unless otherwise specified.
- This product is for commercial production only.
- Not for use on ornamental plants or plants being grown for ornamental purposes.
- Not for residential use.
- Do not use in greenhouses unless otherwise specified.
- Do not apply VANTACOR insect control through any irrigation system unless specified in this label or in EPA approved supplemental labeling.

### For New York State Only:

The following restrictions are required to permit use of VANTACOR insect control in the State of New York:

- This product may not be applied within 100 feet of a water body (lake, pond, river, stream, wetland, or drainage ditch).
- Aerial application of this product is prohibited.
- Not for sale, sale into, distribution and/or use in Nassau, Suffolk, Kings, and Queens counties of New York State.

## AGRICULTURAL USE REQUIREMENTS

VANTACOR insect control must be used 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 the label about personal protective equipment, restricted-entry interval, and notification to workers (as applicable).

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.

Do not enter or allow worker entry into treated areas during the restricted-entry interval (REI) of 4 hours.

For early entry into treated areas that is permitted under the Worker Protection Standard and that involves contact with anything that has been treated, such as plants, soil, or water, wear:

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

VANTACOR insect control is a suspension concentrate that can be applied as: an in-furrow spray at planting or foliar spray (including overhead sprinkler chemigation on certain crops as specified on this label) to control listed insects. Not all application methods are allowed on all crops; see specific crop sections of this label for which application methods may be used. VANTACOR insect control is mixed with water for application. VANTACOR insect control may be used on crops on this label grown for seed production.

VANTACOR insect control is a member of the anthranilic diamide class of insecticides with a mode of action acting on insect ryanodine receptors. Although VANTACOR insect control has contact activity, it is most effective through ingestion of treated plant material. After exposure to VANTACOR insect control, affected insects will rapidly stop feeding, become paralyzed, and typically die within 1 - 3 days. Time applications to the most susceptible insect pest stage, typically at egg lay,

egg hatch and/or newly hatched larvae, before populations reach damaging levels. If possible, make applications at or before egg deposition to be most effective in minimizing damage levels caused by insect pests. When pest populations are high, use the highest listed application rate for that pest.

### **INTEGRATED PEST MANAGEMENT**

FMC supports the use of Integrated Pest Management (IPM) programs to control pests. This product may be used as part of an IPM program, which can include biological, cultural, and genetic practices, aimed at preventing economic pest damage. IPM principles and practices include field scouting or other detection methods, correct target pest identification, population monitoring, rotation of insecticides with different modes-of-action, and treating when target pest populations reach locally determined action thresholds. Consult your state cooperative extension service, professional consultants or other qualified authorities to determine appropriate action treatment threshold levels for treating specific pest/crop or site systems in your area.

### **SCOUTING**

Monitor insect populations to determine whether or not there is a need for application of VANTACOR insect control based on locally determined economic thresholds and pest management guidelines. More than one treatment of VANTACOR insect control may be required to control a population of pests.

### **INSECT RESISTANCE MANAGEMENT**

For resistance management, VANTACOR insect control is a Group 28 Insecticide. Repeated and exclusive use of VANTACOR insect control (active ingredient chlorantraniliprole, belonging to the anthranilic diamide class of chemistry), or other Group 28 Insecticide may lead to the buildup of resistant strains of insects in some crops.

Some insects are known to develop resistance to products used repeatedly for control. Because the development of resistance cannot be predicted, this product may be used as part of resistance management strategies established for the use area. These strategies may include incorporation of cultural and biological control practices, alternation of mode-of-action classes of insecticides on succeeding generations and targeting the most susceptible life stage. Consult your local or state agricultural authorities for details.

Unless directed otherwise in the specific crop/pest sections of this label, the best practices are to follow these instructions to delay the development of insecticide resistance:

- Avoid using the same mode of action (same IRAC group number) on consecutive generations of insect pests.
- Apply VANTACOR insect control or other Group 28 insecticides using a “treatment window” approach to avoid exposure of successive insect pest generations to the same mode of action.
- A “treatment window” is defined as the period of residual activity provided by single or sequential applications of products with the same mode of action. This “treatment window” should not exceed approximately the length of one generation of the target pest, or about 30 days.
- Within the “Group 28 treatment window”, make no more than 2 successive applications of VANTACOR insect control or other Group 28 insecticides, unless otherwise directed in the specific crop/pest sections of this label.
- Following a “Group 28 treatment window”, rotate to a treatment window of effective products with a different mode of action. This “Non-Group 28 Window” should approximate the duration of one generation of the target pest, or about 30 days.
- The total exposure of all Group 28 products applied throughout the crop cycle (from seedling to harvest) should not exceed approximately 50% of the crop cycle or 50% of the total number of insecticide applications targeted for the same pest species.
- For short cycle crops (< 50 days), the duration of the crop cycle may be considered as the Group 28 “treatment window” as long as no Group 28 insecticides are used during the next crop cycle at the same growing location.
- Avoid using less than the labeled rates of VANTACOR insect control when applied alone or in tank mixtures.
- Target the most susceptible insect life stages, whenever possible.
- Monitor insect populations for product effectiveness.

If resistance to VANTACOR insect control develops in your area, VANTACOR insect control or other products with a similar mode of action, may not provide adequate control. If poor performance cannot be attributed to improper application or extreme weather conditions, a resistant strain of insect may be present. If you experience difficulty with control and resistance is a reasonable cause, immediately consult your local company representative or agricultural advisor for the best alternate method of control for your area. For additional information on insect resistance monitoring, visit the Insecticide Resistance Action Committee (IRAC) on the web at <http://www.irc-online.org>.

## APPLICATION

Apply at the specified rates when insect populations reach locally determined economic action thresholds. Consult the cooperative extension service, professional consultants or other qualified authorities to determine appropriate threshold levels for treatment in your area.

Apply follow-up treatments of VANTACOR insect control, as specified, to keep pest populations within threshold limits. Refer to the Resistance Management section of this label for further guidance on follow-up treatments. See individual crop sections of this label for specific minimum spray intervals.

Use sufficient water to obtain thorough, uniform coverage. Because VANTACOR insect control is most effective through ingestion of treated plant material, thorough spray coverage is essential for optimum control of targeted pest insects. Using increased water volumes will typically result in better spray coverage, especially under adverse conditions such as dry, hot weather or dense plant foliage.

VANTACOR insect control can be applied by: ground (including an in-furrow spray at planting or foliar), or aerial application equipment. Not all application methods are allowed on all crops; see specific crop sections of this label for which application methods may be used. VANTACOR insect control can be applied via overhead sprinkler chemigation systems on some crops; see specific crop sections of this label for crops where overhead sprinkler chemigation can be used. For aerial application use the following directions unless otherwise specified in specific crop/pest sections of this label or EPA-approved supplemental labeling.

Crop/Crop Group	AERIAL APPLICATION: Minimum Gallons per Acre (GPA) of Water
Cereals, Corn, Cotton, Grasses, Mint, Non-Grass Animal Feeds, Peanuts, Oilseeds, Soybeans, Sugarcane, Teff, Quinoa	2 GPA
Onions, Legume Vegetables, Root and Tuber Vegetables, Potatoes	5 GPA
Pecans	30 GPA

The highest labeled rate for a specified pest may be necessary when aerial applications are made.

For all other application methods use the following directions, unless otherwise specified in specific crop/pest sections of this label or EPA-approved supplemental labeling - use a minimum of 10 gal per acre (GPA) of water for all crops.

**Use of Adjuvants** - In some situations where coverage is difficult to achieve such as closed canopy, dense foliage, plants with waxy leaf surfaces, or less than optimum application equipment, an adjuvant may improve performance. Use only adjuvant products that are labeled for agricultural use and follow the directions on the manufacturer's label. Always conduct a premix test for compatibility. Use an adjuvant that does not affect foliage and/or fruit finish. Refer to specific crop sections of this label for additional adjuvant guidance.

## SPRAY PREPARATION

Spray equipment must be clean and free of previous pesticide deposits before applying VANTACOR insect control. Fill spray tank 1/4 to 1/2 full of water. Make sure to use a well calibrated measuring device that is appropriate for the low doses that may be required with this high concentration product to avoid under or overdosing. Add VANTACOR insect control directly to spray tank. Mix thoroughly to fully disperse the insecticide, once dispersed continued agitation is required. Use mechanical or hydraulic means; do not use air agitation. Do not store spray mix solutions overnight in spray tank. Observe the most restrictive of the labeling limitations and precautions of all products used in mixtures.

## TANK MIXTURES

This product can be mixed with pesticide products that are labeled for use on the same crops as VANTACOR insect control. Do not exceed labeled dosage rates. This product cannot be mixed with any product containing a label prohibition against such mixing.

VANTACOR insect control may be mixed with certain liquid fertilizers for at-plant soil applications. Do not mix VANTACOR insect control directly with pure liquid fertilizers.

It is the pesticide user's responsibility to ensure that all products are registered for the intended use. Read and follow the applicable restrictions and limitations and directions for use on all product labels involved in tank mixing. Users must follow the most restrictive directions for use and precautionary statements of each product in the tank mixture.

Before using a tank mix for the first time, always determine the compatibility of VANTACOR insect control with the tank mixtures by using a jar test.

**Compatibility** -Since formulations may be changed and new ones introduced, premix a small quantity of a desired tank mix and observe for possible adverse changes (settling out, flocculation, etc.). Low spray volumes (i.e., 2-5 gallons of water), and tank mixtures of more than two products, can increase the chances of incompatible spray mixtures

Steps to conduct a jar test to determine physical tank mix compatibility of VANTACOR insect control with other products:

- Add clean water to jar proportional to the planned water volume that will be used in the spray tank (a jar size of 16 oz is acceptable).

- Using the most restrictive PPE of the products to be tested, mix proper proportions of VANTACOR insect control and desired tank mix partner(s) as will be present in the spray tank, add one product at a time following the sequence of addition according to formulation type provided in this label.
- Seal and shake mixture after each product is added.
- Allow to stand for 1 hour.
- View jar to determine if settling, flocculation, crystallization or any other undesirable changes have happened.
- If none of the above is observed or the solution can be easily remixed after shaking, the mixture is compatible with VANTACOR insect control.
- If the tank mix is not compatible, a higher water volume, reduced rate of the tank mix partner(s), reduced number of tank mix partners or a compatibility agent may be needed.

***Tank Mixtures and Crop Safety*** - Crop varieties can differ in their responsiveness to tank mixtures, and environmental conditions can have an influence on product performance and crop response. It is not possible to test VANTACOR insect control alone or with all possible tank mix combinations on all varieties under all environmental conditions. When considering the use of a tank mixture on a labeled crop without prior experience, or which is not specifically described on VANTACOR insect control product labeling or in other FMC product use instruction, it is important to check crop safety first. To test for crop safety prepare a small volume of the intended tank mixture, apply it to an area of the target crop as directed by both this and the tank mix partner product labels, and observe the treated crop to ensure that a phytotoxic response does not occur.

Use of VANTACOR insect control in any tank mixture applications that is not specifically described on VANTACOR insect control product labeling or in other FMC product use instructions, could potentially result in crop injury. Follow the precautions on this label and on the label for any other product to be used in tank mixtures before making such applications to your crops. FMC will not be responsible for any crop injury arising from the use of a tank mixture that is not specifically described on VANTACOR insect control product labeling or in other FMC product use instruction.

***Tank Mixing Sequence*** -Fill spray tank 1/4 to 1/2 full of water. While agitating, add the different formulation types in the sequence indicated below\*. Allow time for complete mixing and dispersion after addition of each product before adding the next product.

1. Water soluble bag (WSB)
2. Water soluble granules (SG)
3. Water dispersible granules (WG, XP, DF)
4. Wettable powders (WP)
5. VANTACOR insect control and other water based suspension concentrates (SC)
6. Water soluble concentrates (SL)
7. Suspoemulsions (SE)
8. Oil based suspension concentrates (OD)
9. Emulsifiable concentrates (EC)
10. Surfactants, oils adjuvants
11. Soluble fertilizers
12. Drift retardants

\* Unless otherwise specified by manufacturer directions for use or by local experience.

## **SPRAY TANK CLEANOUT**

Prior to application, start with clean, well maintained application equipment. Immediately following application, thoroughly clean all spray equipment to reduce the risk of forming hardened deposits which might become difficult to remove.

Drain spray equipment. Thoroughly rinse sprayer and flush hoses, boom and nozzles with clean water. Clean all other associated application equipment. Take all necessary safety precautions when cleaning equipment. Do not clean near wells, water sources or desirable vegetation. Wastes resulting from the use of this product must be disposed of on site or at an approved waste disposal facility.

## **SPRAY DRIFT MANAGEMENT**

The interaction of many equipment and weather-related factors determines the potential for spray drift. The applicator is responsible for considering all these factors when making application decisions.

AVOIDING SPRAY DRIFT IS THE RESPONSIBILITY OF THE APPLICATOR.

## **IMPORTANCE OF DROPLET SIZE**

The most effective drift management strategy is to apply the largest droplets which are consistent with pest control objectives. The presence of sensitive species nearby, the environmental conditions, and pest pressure may affect how an applicator balances drift control and coverage. Applying larger droplets reduces drift potential, but will not prevent drift if applications are made improperly or under unfavorable environmental conditions. A droplet size classification system describes the range of droplet sizes produced by spray nozzles. The American Society of Agricultural and Biological Engineers (ASABE) provide a Standard that describes droplet size spectrum categories defined by a number of reference nozzles (fine, coarse, etc.). Droplet spectra resulting from the use of a specific nozzle may also be described in terms of volume mean diameter (VMD). Coarser droplet size spectra have larger VMD's and lower drift potential.

## **CONTROLLING DROPLET SIZE - GROUND APPLICATION**

**Nozzle Type** - Select a nozzle type that is designed for the intended application. With most nozzle types, narrower spray angles produce larger droplets. The use of low-drift nozzles will reduce drift potential.

**Pressure** - The lowest spray pressures recommended for the nozzle produce the largest droplets. Higher pressure reduces droplet size and does not improve canopy penetration. When higher flow rates are needed, using a higher-capacity nozzle instead of increasing pressure results in the coarsest droplet spectrum.

**Flow Rate/Orifice Size** - Using the highest flow rate nozzles (largest orifice) that are consistent with pest control objectives reduces the potential for spray drift. Nozzles with higher rated flows produce coarser droplet spectra.

## **CONTROLLING DROPLET SIZE - AIRCRAFT**

**Number of Nozzles** -Using the minimum number of nozzles with the highest flow rate that provide uniform coverage will produce a coarser droplet spectrum.

**Nozzle Orientation** -Orienting nozzles in a manner that minimizes the effects of air shear will produce the coarsest droplet spectra. For some nozzles such as solid stream, pointing the nozzles straight back parallel to the airstream will produce a coarser droplet spectrum than other orientations.

**Nozzle Type** -Solid stream, or other low drift nozzles produce the coarsest droplet spectra.

Do not apply as a ULV application.

## **BOOM LENGTH AND HEIGHT**

**Boom Length (aircraft)** -The boom length must not exceed 3/4 of the wing length; using shorter booms decreases drift potential. For helicopters use a boom length and position that prevents droplets from entering the rotor vortices.

**Boom Height (aircraft)** -Application more than 10 ft above the canopy increases the potential for spray drift. Applications made at the lowest height consistent with pest control objectives, and the safe operation of the aircraft will reduce the potential for spray drift.

**Boom Height (ground)** -Applications made at the lowest height consistent with pest control objectives, and that allow the applicator to keep the boom level with the application site and minimize bounce, will reduce the exposure of spray droplets to evaporation and wind and reduce spray drift potential.

## **WIND**

Drift potential increases at wind speeds of less than 3 mph (due to variable direction and inversion potential) or more than 10 mph. However, many factors, including droplet size and equipment type determine drift potential at any given wind speed. AVOID APPLICATIONS DURING GUSTY OR WINDLESS CONDITIONS. Do not make applications when wind speeds are greater than 15 mph.

Note: Local terrain can influence wind patterns. Every applicator must be familiar with local wind patterns and how they affect spray drift.

## **TEMPERATURE AND HUMIDITY**

When making applications in hot and dry conditions, set up equipment to produce larger droplets to reduce effects of evaporation.

## **SURFACE TEMPERATURE INVERSIONS**

Do not make applications into temperature inversions. Drift potential is high during a surface temperature inversion. Surface inversions restrict vertical air mixing, which causes small-suspended droplets to remain close to the ground and move laterally in a concentrated cloud. Surface inversions are characterized by increasing temperature with altitude and are common on nights with limited cloud cover and light to no wind. They begin to form as the sun sets and often continue into the morning. Their presence can be indicated by ground fog; however, if fog is not present, inversions can also be identified by the movement of smoke from a ground source or an aircraft smoke generator. Smoke that layers and moves laterally in a concentrated cloud (under low wind conditions) indicates a surface inversion, while smoke that moves upward and rapidly dissipates indicates good vertical air mixing.

## **SHIELDED SPRAYERS**

Shielding the boom or individual nozzles can reduce the effects of wind. However, it is the responsibility of the applicator to verify that the shields are preventing drift and not interfering with uniform deposition of the product.

## **TREE AND VINE SPRAYERS**

Air assisted tree and vine sprayers carry droplets into the canopy of trees and vines via a radially or laterally directed air stream.

In addition to the general drift management principles already described, the following specific practices will further reduce the potential for drift:

- Adjust deflectors and aiming devices so that spray is only directed into the canopy.
- Block off upward pointed nozzles when there is no overhanging canopy.
- Use only enough air volume to penetrate the canopy and provide good coverage.
- Movement of spray that goes beyond the edge of the cultivated area may be minimized by practices such as spraying the outside row only from outside the planting.

Drain spray equipment. Thoroughly rinse sprayer and flush hoses, boom and nozzles with clean water.

Clean all other associated application equipment. Take all necessary safety precautions when cleaning equipment. Do not clean near wells, water sources or desirable vegetation. Dispose of waste rinse water in accordance with local regulations.

## **AIR ASSISTED (AIRBLAST) FIELD CROP SPRAYERS**

Air assisted field crop sprayers carry droplets to the target via a downward directed air stream. Some may reduce the potential for drift, but if a sprayer is unsuitable for the application and/or set up improperly, high drift potential can result. It is the responsibility of the applicator to determine that a sprayer is suitable for the intended application, is configured properly, and that drift is not occurring.

Note: Air assisted field sprayers can affect product performance by affecting spray coverage and canopy penetration. Consult the application equipment section of this label to determine if use of an air assisted sprayer is recommended.

## **CHEMIGATION**

VANTACOR insect control can also be applied through overhead sprinkler irrigation systems, including the following; center pivot, end tow, hand move, lateral move, side roll, solid set and wheel line overhead sprinkler irrigation systems (see CHEMIGATION USING OVERHEAD SPRINKLER SYSTEMS - CEREAL GRAINS, CORN (FIELD, POP, SWEET, GROWN FOR SEED), COTTON, GRASS (FORAGE, FODDER, and HAY), LEGUMES, MINT (PEPPERMINT AND SPEARMINT), NON-GRASS ANIMAL FEEDS, OILSEED GROUP, PEANUT, POTATO, SOYBEAN AND SUGARCANE section of this label).

Apply VANTACOR insect control in sufficient water and of sufficient duration to ensure the recommended rate is applied evenly to the entire treated area. Do not allow irrigation water to collect or runoff during chemigation; do not allow pooling of irrigation water. Inject VANTACOR insect control downstream from any water filtration system.

VANTACOR insect control must not be applied at the same time that a drip/irrigation line clean out product is being used as performance may be reduced. Crop injury, lack of effectiveness, or illegal pesticide residues in the crop can result from non-uniform distribution of treated water.

If you have questions about calibration, you should contact state extension service specialists, equipment manufacturers, or other experts. A person knowledgeable of the chemigation system and responsible for its operation, or under the supervision of the responsible person, shall shut the system down and make necessary adjustments should the need arise.

Wear personal protective equipment as defined in the PPE section of the label for applicators and other handlers when making adjustments or repairs on the chemigation system when VANTACOR insect control is in the irrigation water. When the application is finished, allow the entire irrigation and injector system to be thoroughly flushed clean before stopping the system. A pesticide supply tank is recommended for the application of VANTACOR insect control in chemigation systems.

Do not connect any irrigation system used for pesticide applications to a public water system unless the pesticide label-prescribed safety devices are in place. See **“Required System Safety Devices for All Chemigation Systems” at the end of the Chemigation section.** Public water system means a system for the provision to the public of piped water for human consumption, if such system has at least 15 service connections or regularly serves an average of at least 25 individuals at least 60 days out of the year.

<b>Rate Conversion Chart for VANTACOR insect control for At-Plant Soil Application</b>																
Rate in Fluid Ounces Product / 1000 Row-Foot Based on Planted Row Spacing (in inches) of:																
Target Rate in Fl oz/acre	15 in.	20 in.	25 in.	30 in.	34 in.	36 in.	38 in.	40 in.	44 in.	48 in.	60 in.	66 in.	72 in.	78 in.	80 in.	84 in.
0.7											0.080	0.088	0.096	0.104	0.107	0.112
1.2				0.069	0.078	0.083	0.087	0.092	0.101	0.110	0.138	0.152	0.165	0.179	0.184	0.193
1.7		0.065	0.081	0.098	0.111	0.117	0.124	0.130	0.143	0.156	0.195	0.215	0.234	0.254	0.260	0.273
2.0		0.077	0.096	0.115	0.130	0.138	0.145	0.153	0.168	0.184	0.230	0.253	0.275	0.298	0.306	0.321
2.25	0.065	0.086	0.108	0.129	0.146	0.155	0.164	0.172	0.189	0.207	0.258	0.284	0.310	0.336	0.344	0.362
2.5	0.072	0.096	0.120	0.143	0.163	0.172	0.182	0.191	0.210	0.230	0.287	0.316	0.344	0.373	0.383	0.402

Level and length of control is affected by rate applied

Higher labeled rates may be required in heavy texture and/or high organic soils if application is made later in the crop development, or when pest pressure is high.

***CHEMIGATION USING OVERHEAD SPRINKLER SYSTEMS - CEREAL GRAINS, CORN (FIELD, POP, SWEET, GROWN FOR SEED), COTTON, GRASS (FORAGE, FODDER, AND HAY), LEGUMES, MINT (PEPPERMINT AND SPEARMINT), NON- GRASS ANIMAL FEEDS, OILSEED GROUP, PEANUT, POTATO, SOYBEAN, AND SUGARCANE***

Types of Chemigation Systems: VANTACOR insect control can be applied to CEREAL GRAINS, CORN (FIELD, POP, SWEET, GROWN FOR SEED), COTTON, GRASS (FORAGE, FODDER, and HAY), LEGUMES, MINT (PEPPERMINT AND SPEARMINT), NON- GRASS ANIMAL FEEDS, OILSEED GROUP, PEANUT, POTATO, SOYBEAN, AND SUGARCANE through overhead sprinkler irrigation systems, including the following; center pivot, end tow, hand move, lateral move, side roll, solid set and wheel line. The irrigation system used must provide uniform water distribution.

**Directions for Chemigation:**

**Preparation**

A pesticide tank is recommended for the application of VANTACOR insect control in chemigation systems.

Thoroughly clean the injection system and tank of any fertilizer or chemical residues using a standard clean-out procedure. Dispose of any residues in accordance with State and Federal laws. With the mix tank 1/4 to 1/2 full with water and the agitator running, measure the required amount of VANTACOR insect control and add it to the tank. Then add additional water to bring your total pesticide mixture up to the desired volume for your application. Note: Always add the VANTACOR insect control to water, never put VANTACOR insect control into a dry tank or other mixing equipment without first adding water. See “Tank Mixing Sequence” section of the container label for tank mixing sequence. Continue to agitate the mixture throughout the application process. Use mechanical or hydraulic agitation, do not use air agitation.

**Injection Into Chemigation Systems**

Inject the proper amount of VANTACOR insect control into the irrigation water flow using a positive displacement injection pump or a Venturi injector. Injection should occur at a point in the main irrigation water flow to ensure thorough mixing with the irrigation water. For continuously moving systems, inject the solution containing VANTACOR insect control into the irrigation water line continually and uniformly throughout the irrigation cycle.

Apply in no more than 0.2 inches of water per acre. For overhead sprinkler systems that are stationary, add the solution containing VANTACOR insect control to the irrigation water line and apply no more than 0.2 inches of water per acre.

**Uniform Water Distribution**

The irrigation system used for application of VANTACOR insect control must provide for uniform distribution of VANTACOR insect control treated water. Non-uniform distribution can result in crop injury, lack of effectiveness or illegal pesticide residues in or on the crop being treated. Ensure the irrigation system is calibrated to uniformly distribute the chemigation application to the crop.

Contact the equipment manufacturer, the local University Extension agent or other experts if you have questions about achieving uniform distribution of the application.

**Equipment Calibration**

Calibrate the irrigation system and injector before applying VANTACOR insect control. Calibrate the injection pump while the system is running using the expected irrigation rate. If you have questions about calibration, you should contact your state extension service specialists, equipment manufacturer or other experts.

**Monitoring of Chemigation Applications**

A person knowledgeable of the chemigation system and responsible for its operation, or under the supervision of a responsible person, shall shut the system down and make necessary adjustments should the need arise. Wear the personal protective equipment as defined in the PPE section of the label for applicators and other handlers when making adjustments or repairs on the chemigation system when VANTACOR insect control is in the irrigation water.

## Operation

Start the water pump and sprinkler, and let the system achieve the desired pressure and speed before starting the injector. Start the injector and calibrate the injection system according to the directions above. This procedure is necessary to deliver the desired rate per acre in a uniform manner. When the application is finished, allow the entire irrigation and injector system to be thoroughly flushed clean before stopping the system.

- End guns must be turned off during the application, if they irrigate nontarget areas or if they do not provide uniform application and coverage.
- It is recommended that nozzles in the immediate area of wells, control panels, chemical supply tanks and system safety devices be plugged to prevent contamination of these areas.
- Do not apply when wind speed favors drift beyond the area intended for treatment.
- Do not apply when system connections or fittings leak or when nozzles do not provide uniform distribution.
- Do not allow irrigation water to collect or run-off during chemigation.

## Cleaning the System

Thoroughly clean the injection system and tank of any fertilizer or chemical residues using a standard clean-out procedure. Dispose of any residues in accordance with State and Federal laws. Consult your owner's manual or your local equipment dealer for cleanout procedures for your injection system.

## REQUIRED SYSTEM SAFETY DEVICES FOR ALL CHEMIGATION SYSTEMS

1. The system must contain a functional check valve, vacuum relief valve and low-pressure drain appropriately located on the irrigation pipeline to prevent water source contamination from backflow.
2. The pesticide injection pipeline must contain a functional, automatic, quick-closing check valve to prevent the flow of fluid back toward the injection pump.
3. The pesticide injection pipeline must also contain a functional, normally closed, solenoid-operated valve located on the intake side of the injection pump and connected to the system interlock to prevent fluid from being withdrawn from the supply tank when the irrigation system is either automatically or manually shut down.
4. The system must contain functional interlocking controls to automatically shut off the pesticide injection pump when the water pump motor stops.
5. The irrigation line or water pump must include a functional pressure switch which will stop the water pump motor when the water pressure decreases to the point where pesticide distribution is adversely affected.
6. Systems must use a metering device, such as a positive displacement pump or a Venturi injector, that provides uniform injection of the product, is effectively designed and constructed of materials compatible with the product, and is capable of being fitted with a system interlock.
7. Chemigation systems connected to public water systems must contain a functional, reduced- pressure zone, backflow preventer (RPZ) or the functional equivalent in the water supply line upstream from the point of pesticide introduction. As an option to the RPZ, the water from the public water system should be discharged into a reservoir tank prior to pesticide introduction. There shall be a complete physical break (air gap) between the outlet end of the fill pipe and the top or overflow rim of the reservoir tank of at least twice the inside diameter of the fill pipe.

## SOIL APPLICATIONS

VANTACOR insect control must be applied in a manner that ensures the product is in the root zone. VANTACOR insect control must be in the root zone to provide effective control of target pests. VANTACOR insect control is most effective when it is applied so that the roots are at or near the site of application; manage irrigation so that significant quantities of VANTACOR insect control remain in the root zone where it is most effective. Maintaining soil moisture to field capacity or to meet crop needs and environmental conditions aids in product availability to the roots and can improve efficacy. Applications of VANTACOR insect control to the root zone allow the active ingredient to be transported from the roots through the xylem providing upward systemicity. VANTACOR insect control is translocated to the canopy beginning immediately after the application, reaching an effective concentration in 1 to 3 days for seedlings and up to 7 days for larger plants. As the plant grows, the roots continue to absorb the available VANTACOR insect control from the reservoir in the soil providing extended protection of the plant canopy including new growth.

The length of control provided following soil applications will depend on the rate used, the pest being controlled and the environmental conditions; such as soil type, soil moisture, soil pH, etc. Use the higher specified rate within the rate range when pests are expected to occur later in the crop growth cycle or when pests are expected to be present continuously.

VANTACOR insect control will primarily have activity in the foliage of treated plants and will not provide protection within the blooms and fruit. Foliar applications of other products may be needed to protect these parts of the plant. Unless directed otherwise in the specific crop sections of this label, only one soil application of VANTACOR insect control can be made per crop season.

## **In-Furrow Spray at Planting**

Apply as a narrow band spray into the furrow at the seeding depth.

For insecticide resistance management, it is important to avoid consecutive applications of insecticides with the same mode of action on successive generations of the same pest. See crops on label for recommended treatment rates and additional use information.

## **CROP ROTATION**

Crops on this label and the following crops or crop groups may be planted immediately following harvest: Artichoke, globe; Asparagus; Banana/Plantain; Brassica (Cole) Leafy Vegetables (Crop Group 5); Bulb Vegetables (Crop Group 3-07); Bushberry subgroup (Crop subgroup 13-07B); Cacao; Caneberry subgroup (Berry and Small Fruit Crop Group subgroup 13-07A); Cereal Grains (Crop Group 15); Forage, Fodder, and Straw of Cereal Grains (Crop Group 16); Citrus (Crop Group 10-10); Coffee; Corn (field, pop, seed, and sweet); Cotton; Cucurbit Vegetables (Crop Group 9); Figs; Fruiting Vegetables (Crop Group 8-10); Grass Forage, Fodder, and Hay Group (Crop Group 17); Herbs subgroup (Crop Group subgroup 19A); Grape; Hops; Large Shrub/Tree Berry subgroup (Crop subgroup 13-07C); Leafy Vegetables (nonbrassica, Crop Group 4); Legume Vegetables (Crop Group 6); Foliage of Legume Vegetables (Crop Group 7); Low Growing Berry subgroup (Crop subgroup 13-07G); Nongrass Animal Feeds (Forage, Fodder, Straw, and Hay Crop Group 18); Okra; Oilseed Group (Crop Group 20); Olives; Peanut; Persimmons; Pome Fruits (Crop Group 11-10); Pineapple; Pomegranates; Prickly Pear Cactus; Rice; Root and Tuber Vegetables (Crop Group 1); Leaves of Root and Tuber Vegetables (Crop Group 2); Small Fruit Vine Climbing subgroup, except fuzzy kiwifruit (Berry and Small Fruit Crop Group subgroup 13-07F); Soybean; Spice subgroup (Crop Group subgroup 19B); Spearmint and Peppermint; Stone Fruits (Crop Group 12-12); Sugarcane; Tea; Tree Nuts and Pistachio (Crop Group 14); Tobacco; and Tropical Fruits (acerola, atemoya, avocado, biriba, black sapote, canistel, cherimoya, custard apple, ilama, feijoa, guava, jaboticaba, longan, lychee, mamey sapote, mango, papaya, passionfruit, pulasan, rambutan, sapodilla, soursop, Spanish lime, star apple, starfruit, sugar apple, wax jambu, and White sapote (Casimiroa), and/or hybrids of these).

All other crops cannot be planted until 12 months after the last application of VANTACOR insect control.

**VANTACOR insect control RATE**

<b>Crop</b>	<b>Application Method</b>	<b>Target Pest</b>	<b>Lb ai per acre</b>	<b>fluid ounces product per acre</b>	<b>Last Application (Days to Harvest)</b>	<b>REI (Hours)</b>
Onion bulbs, and onion green subgroups: (EPA Crop Group 3-07A and 3-07B) including Chive, fresh leaves; chive, Chinese, fresh leaves; Daylily, bulb; Elegans hosta; Fritillaria, bulb; Fritillaria, leaves; Garlic, bulb; Garlic, great-headed, bulb; Garlic, serpent, bulb; Kurrat; Lady's leek; Leek; Leek, wild; Lily, bulb; Onion, Beltsville bunching; Onion, bulb; Onion, Chinese, bulb; Onion, fresh; Onion, green; Onion, macrostem; Onion, pearl; Onion, potato, bulb; Onion, tree, tops; Onion, Welsh, tops; Shallot, bulb; Shallot, fresh leaves; Cultivars, varieties, and/or hybrids of these	FOLIAR	Beet armyworm Western yellowstriped armyworm	0.047 - 0.098	1.2 – 2.5	1	4

Apply higher rates within the listed range for heavier infestations, larger/denser crops or extreme environmental conditions such as rainy weather and high temperatures.

**USE RESTRICTIONS**

Do not make more than 4 applications per acre per crop or more than 12 applications per acre per calendar year.

Minimum interval between treatments is 7 days.

Do not apply more than 5.1 fl oz VANTACOR insect control or 0.2 lb a.i. of chlorantraniliprole containing products per acre per crop.

Do not apply more than 15.4 fl oz VANTACOR insect control or 0.6 lb a.i. of chlorantraniliprole containing products per acre per calendar year; in NY do not apply more than 5.1 fl oz VANTACOR insect control or 0.2 lb a.i. of chlorantraniliprole containing products per acre per calendar year.

**VANTACOR insect control RATE**

<b>Crop</b>	<b>Application Method</b>	<b>Target Pest</b>	<b>Lb ai per acre</b>	<b>fluid ounces product per acre</b>	<b>Last Application (Days to Harvest)</b>	<b>REI (Hours)</b>
Cereal Grains (EPA Crop Group 15) except Corn and Rice. Including: Barley; Buckwheat; Pearl Millet; Proso Millet; Oats; Rye; Sorghum (milo); Sorghum spp. [grain sorghum, sudangrass (seed crop), and hybrids of these grown for its seed]; Teosinte, Triticale; Wheat; Wild Rice	FOLIAR	Corn earworm Beet armyworm European corn borer Fall armyworm Sorghum webworm Southwestern corn borer Sugarcane borer True armyworm Wheathead armyworm	0.047 - 0.098	1.2 – 2.5	1	4
	OVERHEAD CHEMIGATION	Grasshoppers	0.027 - 0.066	0.7 – 1.7		

Apply higher rates within the listed range for heavier infestations, larger/denser crops or extreme environmental conditions such as rainy weather and high temperatures.

**USE RESTRICTIONS**

Do not make more than 4 applications per acre per calendar year.

Minimum interval between treatments is 7 days.

Do not apply more than 5.1 fl oz VANTACOR insect control or 0.2 lb a.i. of chlorantraniliprole containing products per acre per calendar year.

VANTACOR insect control can be applied by overhead sprinkler chemigation systems. See "CHEMIGATION USING OVERHEAD SPRINKLER SYSTEMS - CEREAL GRAINS, CORN (FIELD, POP, SWEET, GROWN FOR SEED), COTTON, GRASS FORAGE, FODDER, and HAY, LEGUMES, MINT (PEPPERMINT AND SPEARMINT), NON-GRASS ANIMAL FEEDS, OILSEED GROUP, PEANUT, POTATO, SOYBEAN, AND SUGARCANE" section for instructions on overhead sprinkler chemigation.

**Grasshopper** - Apply foliarly when grasshopper populations reach local established thresholds to prevent crop damage. Correct timing of spray applications to nymphal stages and thorough coverage is critical to achieve control. Performance is improved with the addition of a Methylated Seed Oil (MSO) adjuvant at 1 gallon per 100 gallons of spray volume (1% v/v) when eggs have hatched and the majority of the grasshopper population is 2nd - 3rd instar nymphs. Once grasshoppers contact and/or ingest VANTACOR insect control there will be rapid feeding cessation; insect mortality may not occur until a week later or longer. Do not make more than two sequential applications of VANTACOR insect control before rotating to another registered insecticide having a different mode-of-action.

**VANTACOR insect control RATE**

<b>Crop</b>	<b>Application Method</b>	<b>Target Pest</b>	<b>Lb ai per acre</b>	<b>fluid ounces product per acre</b>	<b>Last Application (Days to Harvest)</b>	<b>REI (Hours)</b>
Forage, fodder, and Straw of Cereal Grains, (EPA Crop Group 16) except Corn and Rice. Including Forage, fodder, and straw of all commodities included in the cereal grains group, except corn and rice. Includes Sorghum spp. [sorghum, forage; sorghum, stover]; sudangrass; and hybrids of these grown for forage and/or stover.	FOLIAR  OVERHEAD CHEMIGATION	Corn earworm Beet armyworm European corn borer Fall armyworm Sorghum webworm Southwestern corn borer Sugarcane borer True armyworm Wheathead armyworm	0.047 - 0.098	1.2 – 2.5	1	4
		Grasshoppers	0.027 - 0.066	0.7 – 1.7		

Apply higher rates within the listed range for heavier infestations, larger/denser crops or extreme environmental conditions such as rainy weather and high temperatures.

**USE RESTRICTIONS**

Do not make than 4 applications per acre per calendar year.

Minimum interval between treatments is 7 days.

Do not apply more than 5.1 fl oz VANTACOR insect control or 0.2 lb a.i. of chlorantraniliprole containing products per acre per calendar year.

VANTACOR insect control can be applied by overhead sprinkler chemigation systems. See "CHEMIGATION USING OVERHEAD SPRINKLER SYSTEMS - CEREAL GRAINS, CORN (FIELD, POP, SWEET, GROWN FOR SEED), COTTON, GRASS FORAGE, FODDER, and HAY, LEGUMES, MINT (PEPPERMINT AND SPEARMINT), NON-GRASS ANIMAL FEEDS, OILSEED GROUP, PEANUT, POTATO, SOYBEAN, AND SUGARCANE" section for instructions on overhead sprinkler chemigation.

**Grasshopper** - Apply foliarly when grasshopper populations reach local established thresholds to prevent crop damage. Correct timing of spray applications to nymphal stages and thorough coverage is critical to achieve control. Performance is improved with the addition of a Methylated Seed Oil (MSO) adjuvant at 1 gallon per 100 gallons of spray volume (1% v/v) when eggs have hatched and the majority of the grasshopper population is 2nd - 3rd instar nymphs. Once grasshoppers contact and/or ingest VANTACOR insect control there will be rapid feeding cessation; insect mortality may not occur until a week later or longer. Do not make more than two sequential applications of VANTACOR insect control before rotating to another registered insecticide having a different mode-of-action.

**VANTACOR insect control RATE**

<b>Crop</b>	<b>Application Method</b>	<b>Target Pest</b>	<b>Lb ai per acre</b>	<b>fluid ounces product per acre</b>	<b>Last Application (Days to Harvest)</b>	<b>REI (Hours)</b>
Corn (field); Corn (pop)	SOIL AT PLANTING† In-furrow spray	European corn borer Fall armyworm Southern armyworm Black cutworm Dingy cutworm Army cutworm Clay-backed cutworm Sandhills cutworm Common stalkborer True armyworm	0.066 - 0.098	1.7 – 2.5 See Rate Conversion Chart in the Chemigation section of this label for rate per 1000 linear ft.	14	4
	FOLIAR OVERHEAD CHEMIGATION	Corn earworm Beet armyworm European corn borer Fall armyworm Southern armyworm Southwestern corn borer True armyworm Western bean cutworm Black cutworm Dingy cutworm Army cutworm Clay-backed cutworm Sandhills cutworm	0.047 - 0.098	1.2 – 2.5		
		Grasshoppers	0.027 - 0.066	0.7 – 1.7		

Apply higher rates within the listed range for heavier infestations, larger/denser crops or extreme environmental conditions such as rainy weather and high temperatures.

**USE RESTRICTIONS**

Do not make than 4 applications per acre per calendar year.

Minimum interval between treatments is 7 days.

Do not apply more than 5.1 fl oz VANTACOR insect control or 0.2 lb a.i. of chlorantraniliprole containing products, whether applications are made to the soil, foliarly or as a seed treatment per acre per calendar year.

VANTACOR insect control can be applied by overhead sprinkler chemigation systems. See "CHEMIGATION USING OVERHEAD SPRINKLER SYSTEMS - CEREAL GRAINS, CORN (FIELD, POP, SWEET, GROWN FOR SEED), COTTON, GRASS FORAGE, FODDER, and HAY, LEGUMES, MINT (PEPPERMINT AND SPEARMINT), NON-GRASS ANIMAL FEEDS, OILSEED GROUP, PEANUT, POTATO, SOYBEAN, AND SUGARCANE" section for instructions on overhead sprinkler chemigation.

**†SOIL APPLICATIONS:**

**In-Furrow Spray at Planting**

Apply as a narrow band spray into the furrow at the seeding depth.

VANTACOR insect control must be applied in a manner that ensures the product is in the root zone. VANTACOR insect control is most effective when it is applied so that the roots are at or near the site of application; manage irrigation so that significant quantities of VANTACOR insect control remain in the root zone where it is most effective. Unless directed otherwise in the specific crop sections of this label, only one soil application of VANTACOR insect control can be made per crop.

**Grasshopper** - Apply foliarly when grasshopper populations reach local established thresholds to prevent crop damage. Correct timing of spray applications to nymphal stages and thorough coverage is critical to achieve control. Performance is improved with the addition of a Methylated Seed Oil (MSO) adjuvant at 1 gallon per 100 gallons of spray volume (1% v/v) when eggs have hatched and the majority of the grasshopper population is 2nd - 3rd instar nymphs. Once grasshoppers contact and/or ingest VANTACOR insect control there will be rapid feeding cessation; insect mortality may not occur until a week later or longer. Do not make more than two sequential applications of VANTACOR insect control before rotating to another registered insecticide having a different mode-of-action.

**VANTACOR insect control RATE**

<b>Crop</b>	<b>Application Method</b>	<b>Target Pest</b>	<b>Lb ai per acre</b>	<b>fluid ounces product per acre</b>	<b>Last Application (Days to Harvest)</b>	<b>REI (Hours)</b>
Corn (sweet); Corn (grown for seed)	SOIL AT PLANTING† In-furrow spray	European corn borer Fall armyworm Southern armyworm Black cutworm Dingy cutworm Army cutworm Clay-backed cutworm Sandhills cutworm Common stalkborer True armyworm	0.066 - 0.098	1.7 – 2.5 See Rate Conversion Chart in the Chemigation section of this label for rate per 1000 linear ft.	1	4
	FOLIAR  OVERHEAD CHEMIGATION	Corn earworm Beet armyworm European corn borer Fall armyworm Southern armyworm Southwestern corn borer True armyworm Western bean cutworm Black cutworm Dingy cutworm Army cutworm Clay-backed cutworm Sandhills cutworm	0.047 - 0.098	1.2 – 2.5		
		Grasshoppers	0.027 - 0.066	0.7 – 1.7		

Apply higher rates within the listed range for heavier infestations, larger/denser crops or extreme environmental conditions such as rainy weather and high temperatures.

**USE RESTRICTIONS**

Do not make more than 4 applications per acre per calendar year.

Minimum interval between treatments is 1 day.

Do not apply more than 5.1 fl oz VANTACOR insect control or 0.2 lb a.i. of chlorantraniliprole containing products whether applications are made to the soil, foliarly or as a seed treatment per acre per calendar year.

VANTACOR insect control can be applied by overhead sprinkler chemigation systems. See "CHEMIGATION USING OVERHEAD SPRINKLER SYSTEMS - CEREAL GRAINS, CORN (FIELD, POP, SWEET, GROWN FOR SEED), COTTON, GRASS FORAGE, FODDER, and HAY, LEGUMES, MINT (PEPPERMINT AND SPEARMINT), NON-GRASS ANIMAL FEEDS, OILSEED GROUP, PEANUT, POTATO, SOYBEAN, AND SUGARCANE" section for instructions on overhead sprinkler chemigation.

†**SOIL APPLICATIONS:**

In-Furrow Spray at Planting

Apply as a narrow band spray into the furrow at the seeding depth.

VANTACOR insect control must be applied in a manner that ensures the product is in the root zone. VANTACOR insect control is most effective when it is applied so that the roots are at or near the site of application; manage irrigation so that significant quantities of VANTACOR insect control remain in the root zone where it is most effective. Unless directed otherwise in the specific crop sections of this label, only one soil application of VANTACOR insect control can be made per crop.

**Grasshopper** - Apply foliarly when grasshopper populations reach local established thresholds to prevent crop damage. Correct timing of spray applications to nymphal stages and thorough coverage is critical to achieve control. Performance is improved with the addition of a Methylated Seed Oil (MSO) adjuvant at 1 gallon per 100 gallons of spray volume (1% v/v) when eggs have hatched and the majority of the grasshopper population is 2nd - 3rd instar nymphs. Once grasshoppers contact and/or ingest VANTACOR insect control there will be rapid feeding cessation; insect mortality may not occur until a week later or longer. Do not make more than two sequential applications of VANTACOR insect control

**VANTACOR insect control RATE**

<b>Crop</b>	<b>Application Method</b>	<b>Target Pest</b>	<b>Lb ai per acre</b>	<b>fluid ounces product per acre</b>	<b>Last Application (Days to Harvest)</b>	<b>REI (Hours)</b>
Cotton	FOLIAR  OVERHEAD CHEMIGATION	Beet armyworm Cotton bollworm** Fall armyworm Saltmarsh caterpillar Southern armyworm Tobacco budworm** Western yellowstriped armyworm Cutworms	0.047 - 0.098	1.2 – 2.5	21	4
		Cabbage looper Soybean looper*	0.066 - 0.098	1.7 – 2.5		
		Grasshoppers	0.027 - 0.066	0.7 – 1.7		

Apply higher rates within the listed range for heavier infestations, larger/denser crops or extreme environmental conditions such as rainy weather and high temperatures.

**USE RESTRICTIONS**

Do not make more than 4 applications per acre per calendar year.

Do not apply more than 5.1 fl oz VANTACOR insect control or 0.2 lb a.i. of chlorantraniliprole containing products per acre per calendar year.

The minimum interval between treatments is 5 days.

VANTACOR insect control can be applied by overhead sprinkler chemigation systems. See "CHEMIGATION USING OVERHEAD SPRINKLER SYSTEMS - CEREAL GRAINS, CORN (FIELD, POP, SWEET, GROWN FOR SEED), COTTON, GRASS FORAGE, FODDER, and HAY, LEGUMES, MINT (PEPPERMINT AND SPEARMINT), NON-GRASS ANIMAL FEEDS, OILSEED GROUP, PEANUT, POTATO, SOYBEAN, AND SUGARCANE" section for instructions on overhead sprinkler chemigation.

\*Suppression only.

\*\*For Heliiothine control (cotton bollworm and/or tobacco budworm in conventional non-transgenic/non-Bt cotton) make the first application at rates of 0.066 - 0.09 lb. ai per acre (1.7 – 2.3 oz product). Subsequent applications can be at rates of 0.047 - 0.09 lb. ai acre (1.2 – 2.3 oz product) depending on pest pressure.

For control of cotton bollworm (*Helicoverpa zea*) in Bt transgenic cotton varieties, the initial application, and subsequent applications, of VANTACOR insect control can be applied at 1.2 to 1.7 fluid ounces per acre as a foliar spray. Apply when cotton bollworm populations reach local established treatment thresholds to prevent crop damage.

**Grasshopper** - Apply foliarly when grasshopper populations reach local established thresholds to prevent crop damage. Correct timing of spray applications to nymphal stages and thorough coverage is critical to achieve control. Performance is improved with the addition of a Methylated Seed Oil (MSO) adjuvant at 1 gallon per 100 gallons of spray volume (1% v/v) when eggs have hatched and the majority of the grasshopper population is 2nd - 3rd instar nymphs. Once grasshoppers contact and/or ingest VANTACOR insect control there will be rapid feeding cessation; insect mortality may not occur until a week later or longer. Do not make more than two sequential applications of VANTACOR insect control before rotating to another registered insecticide having a different mode-of-action.

**VANTACOR insect control RATE**

<b>Crop</b>	<b>Application Method</b>	<b>Target Pest</b>	<b>Lb ai per acre</b>	<b>fluid ounces product per acre</b>	<b>Last Application (Days to Harvest)</b>	<b>REI (Hours)</b>
Grass Forage, Fodder and Hay: (EPA Crop Group 17) Any grass, Gramineae family (either green or cured) except sugarcane and those included in the cereal grains group, that will be fed to or grazed by livestock; all pasture and range grasses; and grasses grown for hay or silage.	FOLIAR  OVERHEAD CHEMIGATION	Beet armyworm Corn earworm Fall armyworm Sod webworm Southern armyworm True armyworm	0.047 - 0.098	1.2 – 2.5	0	4
		Grasshoppers	0.027 - 0.066	0.7 – 1.7		
		Billbug (grubs)* Cutworms European crane fly (larvae)*	0.066 - 0.098	1.7 – 2.5		

Apply higher rates within the listed range for heavier infestations, larger/denser crops or extreme environmental conditions such as rainy weather and high temperatures.

**USE RESTRICTIONS**

Do not make more than 4 applications per acre per calendar year.

Minimum interval between treatments is 7 days.

Do not apply more than 5.1 fl oz VANTACOR insect control or 0.2 lb a.i. of chlorantraniliprole containing products per acre per calendar year.

VANTACOR insect control can be applied by overhead sprinkler chemigation systems. See "CHEMIGATION USING OVERHEAD SPRINKLER SYSTEMS - CEREAL GRAINS, CORN (FIELD, POP, SWEET, GROWN FOR SEED), COTTON, GRASS FORAGE, FODDER, and HAY, LEGUMES, MINT (PEPPERMINT AND SPEARMINT), NON-GRASS ANIMAL FEEDS, OILSEED GROUP, PEANUT, POTATO, SOYBEAN, AND SUGARCANE" section for instructions on overhead sprinkler chemigation.

\* Suppression only. Grass grown for seed only.

**Application Instructions**

For control of Armyworms, Cutworms, and Sod Webworms, apply at first sign of economic crop damage. Apply VANTACOR insect control as a thorough coverage foliar spray using properly calibrated ground equipment in a minimum of 10 gallons per acre, or via overhead chemigation in 0.10 to 0.20 acre inch of water. For foliar sprays, increase the spray volume to compensate for the amount of foliage present. For maximum spray penetration in to the root crown area, the use of a silicone surfactant may be useful. For best results with foliar spray applications, delay the next irrigation for at least 24 hours.

For suppression of European Crane Fly larvae apply between September and early November.

For suppression of Billbug grubs, apply when overwintered adult Billbugs are first observed. This will usually occur in late April or early May. It is important to move the VANTACOR insect control into the grass root zone. This is best achieved by applying via overhead chemigation in 0.25 to 0.50 acre inch of water, or by immediately following a foliar spray application with 0.25 to 0.50 acre inch of water.

**Grasshopper** - Apply foliarly when grasshopper populations reach local established thresholds to prevent crop damage. Correct timing of spray applications to nymphal stages and thorough coverage is critical to achieve control. Performance is improved with the addition of a Methylated Seed Oil (MSO) adjuvant at 1 gallon per 100 gallons of spray volume (1% v/v) when eggs have hatched and the majority of the grasshopper population is 2nd - 3rd instar nymphs. Once grasshoppers contact and/or ingest VANTACOR insect control there will be rapid feeding cessation; insect mortality may not occur until a week later or longer. Do not make more than two sequential applications of VANTACOR insect control before rotating to another registered insecticide having a different mode-of-action.

**VANTACOR insect control RATE**

<b>Crop</b>	<b>Application Method</b>	<b>Target Pest</b>	<b>Lb ai per acre</b>	<b>fluid ounces product per acre</b>	<b>Last Application (Days to Harvest)</b>	<b>REI (Hours)</b>
Legume vegetables (EPA Crop Group 6) (For soybean see separate soybean crop section below.) (Succulent or Dried, Including: Bean (Lupinus) (includes grain lupin, sweet lupin, white lupin, and white sweet lupin); Bean (Phaseolus) (includes field bean, kidney bean, lima bean, navy bean, pinto bean, runner bean, snap bean, tepary bean, wax bean); Bean (Vigna) (includes adzuki bean, asparagus bean, blackeyed pea, catjang, Chinese longbean, cowpea, crowder pea, moth bean, mung bean, rice bean, southern pea, urd bean, yardlong bean); Broad bean (fava); Chickpea (garbanzo); Guar; Jackbean; Lablab bean; Lentil; Pea (Pisum) (includes dwarf pea, edible-podded pea, English pea, field pea, garden pea, green pea, snowpea, sugar snap pea); Pigeon pea; Sword bean	SOIL AT PLANTING† In-furrow spray	Corn earworm Beet armyworm European corn borer Fall armyworm	0.066 - 0.098	1.7 – 2.5 See Rate Conversion Chart in the Chemigation section of this label for rate per 1000 linear ft.	1	4
	FOLIAR  OVERHEAD CHEMIGATION	Corn earworm Beet armyworm European corn borer Fall armyworm Cabbage looper Soybean looper Western bean cutworm	0.047 - 0.098	1.2 – 2.5		
		Leafminers (larvae)* Silverleaf whiteflies (nymphs)**	0.098	2.5		
		Grasshoppers	0.027 - 0.066	0.7 – 1.7		

Apply higher rates within the listed range for heavier infestations, larger/denser crops or extreme environmental conditions such as rainy weather and high temperatures.

**USE RESTRICTIONS**

Do not make more than 4 applications per acre per crop or 12 applications per acre per calendar year.

Minimum interval between treatments is 3 days.

Do not apply more than 5.1 fl oz VANTACOR insect control or 0.2 lb a.i. of chlorantraniliprole containing products per acre per crop.

Do not apply more than 15.4 fl oz VANTACOR insect control or 0.6 lb a.i. of chlorantraniliprole containing products per acre per calendar year; in NY

do not apply more than 5.1 fl oz VANTACOR insect control or 0.2 lb a.i. of chlorantraniliprole containing products per acre per calendar year.

VANTACOR insect control can be applied by overhead sprinkler chemigation systems. See "CHEMIGATION USING OVERHEAD SPRINKLER SYSTEMS - CEREAL GRAINS, CORN (FIELD, POP, SWEET, GROWN FOR SEED), COTTON, GRASS FORAGE, FODDER, and HAY, LEGUMES, MINT (PEPPERMINT AND SPEARMINT), NON-GRASS ANIMAL FEEDS, OILSEED GROUP, PEANUT, POTATO, SOYBEAN, AND SUGARCANE" section for instructions on overhead sprinkler chemigation.

\*Control of *Liriomyza* species except suppression only for *L. huidobrensis* and *L. langei*.

\*\*Suppression only. Use in conjunction with an effective adult whitefly control program.

†**SOIL APPLICATIONS:**

**In-Furrow Spray at Planting**

Apply as a narrow band spray into the furrow at the seeding depth. VANTACOR insect control must be applied in a manner that ensures the product is in the root zone. VANTACOR insect control must be in the root zone to provide effective control of target pests. VANTACOR insect control is most effective when it is applied so that the roots are at or near the site of application; manage irrigation so that significant quantities of VANTACOR insect control remain in the root zone where it is most effective. Unless directed otherwise in the specific crop sections of this label, only one soil application of VANTACOR insect control can be made per crop.

**Grasshopper** - Apply foliarly when grasshopper populations reach local established thresholds to prevent crop damage. Correct timing of spray applications to nymphal stages and thorough coverage is critical to achieve control. Performance is improved with the addition of a Methylated Seed Oil (MSO) adjuvant at 1 gallon per 100 gallons of spray volume (1% v/v) when eggs have hatched and the majority of the grasshopper population is 2nd - 3rd instar nymphs. Once grasshoppers contact and/or ingest VANTACOR insect control there will be rapid feeding cessation; insect mortality may not occur until a week later or longer. Do not make more than two sequential applications of VANTACOR insect control before rotating to another registered insecticide having a different mode-of-action.

**VANTACOR insect control RATE**

<b>Crop</b>	<b>Application Method</b>	<b>Target Pest</b>	<b>Lb ai per acre</b>	<b>fluid ounces product per acre</b>	<b>Last Application (Days to Harvest)</b>	<b>REI (Hours)</b>
Foliage of Legume Vegetables (EPA Crop Group 7) except soybean including: of any legume vegetable included in the legume vegetables that will be used as animal feed.	SOIL AT PLANTING† In-furrow spray	Corn earworm Beet armyworm European corn borer Fall armyworm	0.066 - 0.098	1.7 – 2.5 See Rate Conversion Chart in the Chemigation section of this label for rate per 1000 linear ft.	1	4
	FOLIAR OVERHEAD CHEMIGATION	Corn earworm Beet armyworm European corn borer Fall armyworm Cabbage looper Soybean looper Western bean cutworm	0.047 - 0.098	1.2 – 2.5		
		Leafminers (larvae)* Silverleaf whiteflies (nymphs)**	0.098	2.5		
		Grasshoppers	0.027 - 0.066	0.7 – 1.7		

Apply higher rates within the listed range for heavier infestations, larger/denser crops or extreme environmental conditions such as rainy weather and high temperatures.

**USE RESTRICTIONS**

Do not make more than 4 applications per acre per crop or 12 applications per acre per calendar year.

Minimum interval between treatments is 3 days.

Do not apply more than 5.1 fl oz VANTACOR insect control or 0.2 lb a.i. of chlorantraniliprole containing products per acre per crop.

Do not apply more than 15.4 fl oz VANTACOR insect control or 0.6 lb a.i. of chlorantraniliprole containing products per acre per calendar year; in NY do not apply more than 5.1 fl oz VANTACOR insect control or 0.2 lb a.i. of chlorantraniliprole containing products per acre per calendar year.

VANTACOR insect control can be applied by overhead sprinkler chemigation systems. See "CHEMIGATION USING OVERHEAD SPRINKLER SYSTEMS - CEREAL GRAINS, CORN (FIELD, POP, SWEET, GROWN FOR SEED), COTTON, GRASS FORAGE, FODDER, and HAY, LEGUMES, MINT (PEPPERMINT AND SPEARMINT), NON-GRASS ANIMAL FEEDS, OILSEED GROUP, PEANUT, POTATO, SOYBEAN, AND SUGARCANE" section for instructions on overhead sprinkler chemigation.

\*Control of *Liriomyza* species except suppression only for *L. huidobrensis* and *L. langei*.

\*\*Suppression only. Use in conjunction with an effective adult whitefly control program.

**†SOIL APPLICATIONS:**

**In-Furrow Spray at Planting**

Apply as a narrow band spray into the furrow at the seeding depth. VANTACOR insect control must be applied in a manner that ensures the product is in the root zone. VANTACOR insect control must be in the root zone to provide effective control of target pests.

VANTACOR insect control is most effective when it is applied so that the roots are at or near the site of application; manage irrigation so that significant quantities of VANTACOR insect control remain in the root zone where it is most effective. Unless directed otherwise in the specific crop sections of this label, only one soil application of VANTACOR insect control can be made per crop.

**Grasshopper** -Apply foliarly when grasshopper populations reach local established thresholds to prevent crop damage. Correct timing of spray applications to nymphal stages and thorough coverage is critical to achieve control. Performance is improved with the addition of a Methylated Seed Oil (MSO) adjuvant at 1 gallon per 100 gallons of spray volume (1% v/v) when eggs have hatched and the majority of the grasshopper population is 2nd - 3rd instar nymphs. Once grasshoppers contact and/or ingest VANTACOR insect control there will be rapid feeding cessation; insect mortality may not occur until a week later or longer. Do not make more than two sequential applications of VANTACOR insect control before rotating to another registered insecticide having a different mode-of-action.

**VANTACOR insect control RATE**

Crop	Application Method	Target Pest	Lb ai per acre	fluid ounces product per acre	Last Application (Days to Harvest)	REI (Hours)
Mint: Peppermint and Spearmint	FOLIAR  OVERHEAD CHEMIGATION	Armyworms Cutworms Loopers Mint root borer	0.047 - 0.098	1.2 – 2.5	3	4

Apply higher rates within the listed range for heavier infestations, larger/denser crops or extreme environmental conditions such as rainy weather and high temperatures.

**USE RESTRICTIONS**

Do not make more than 4 applications per acre per calendar year.

Minimum interval between treatments is 14 days.

Do not apply more than 5.1 fl oz VANTACOR insect control or 0.2 lb a.i. of chlorantraniliprole containing products per acre per calendar year.

VANTACOR insect control can be applied by overhead sprinkler chemigation systems. See "CHEMIGATION USING OVERHEAD SPRINKLER SYSTEMS - CEREAL GRAINS, CORN (FIELD, POP, SWEET, GROWN FOR SEED), COTTON, GRASS FORAGE, FODDER, and HAY, LEGUMES, MINT (PEPPERMINT AND SPEARMINT), NON-GRASS ANIMAL FEEDS, OILSEED GROUP, PEANUT, POTATO, SOYBEAN, AND SUGARCANE" section for instructions on overhead sprinkler chemigation.

In mint growing areas where the mint root borer degree day model is being used and mint is being grown under sprinkler irrigation: apply VANTACOR insect control at 1.7 fl oz/acre (0.066 lb a.i. per acre) as a foliar spray or via overhead sprinkler chemigation. Time the application between 900 and 1250 growing degree days. Foliar sprays must be followed by sprinkler irrigation before swathing. When making a foliar spray, be sure to include an adjuvant to help obtain thorough coverage. Use only adjuvant products that are labeled for agricultural use and follow the directions on the manufacturer’s label. Always conduct a premix test for compatibility. Use an adjuvant that does not affect foliage.

**Mint Root Borer** - For applications after the last cutting of mint, apply VANTACOR insect control soon after the last cutting of mint, but before the Mint Root Borer form an overwintering hibernaculum. If VANTACOR insect control is applied as a broadcast spray, follow application with at least 2 inches water per acre of overhead irrigation. For furrow irrigated mint, apply VANTACOR insect control as a broadcast spray soon after harvest. Follow application with two furrow irrigations in order to move VANTACOR insect control into the mint root zone before the mint root borer forms a hibernaculum. If VANTACOR insect control is applied via overhead chemigation, use a minimum of 2 acre inches of water to move the VANTACOR insect control into the mint root zone.

Crop	Application Method	Target Pest	Lb ai per acre	fluid ounces product per acre	Last Application (Days to Harvest)	REI (Hours)
Non-grass animal feeds (EPA Crop Group 18) Including: Alfalfa; bean, velvet; Clover (Trifolium, Melilotus); Kudzu; Lespedeza; Lupin; Sainfoin; Trefoil; Vetch; Vetch, crown; Vetch, milk	FOLIAR  OVERHEAD CHEMIGATION	Alfalfa caterpillar Alfalfa looper Beet armyworm Western yellowstriped armyworm Fall armyworm Green cloverworm	0.047 - 0.098	1.2 – 2.5	0	4
		Grasshoppers	0.027 - 0.066	0.7 – 1.7		

Apply higher rates within the listed range for heavier infestations, larger/denser crops or extreme environmental conditions such as rainy weather and high temperatures.

**USE RESTRICTIONS**

Do not make more than 4 applications per acre per calendar year.

Make one application per cutting.

Do not apply more than 5.1 fl oz VANTACOR insect control or 0.2 lb a.i. of chlorantraniliprole containing products per acre per calendar year.

VANTACOR insect control can be applied by overhead sprinkler chemigation systems. See “CHEMIGATION USING OVERHEAD SPRINKLER SYSTEMS - CEREAL GRAINS, CORN (FIELD, POP, SWEET, GROWN FOR SEED), COTTON, GRASS FORAGE, FODDER, and HAY, LEGUMES, MINT (PEPPERMINT AND SPEARMINT), NON-GRASS ANIMAL FEEDS, OILSEED GROUP, PEANUT, POTATO, SOYBEAN, AND SUGARCANE” section for instructions on overhead sprinkler chemigation.

**Grasshopper** - Apply foliarly when grasshopper populations reach local established thresholds to prevent crop damage. Correct timing of spray applications to nymphal stages and thorough coverage is critical to achieve control. Performance is improved with the addition of a Methylated Seed Oil (MSO) adjuvant at 1 gallon per 100 gallons of spray volume (1% v/v) when eggs have hatched and the majority of the grasshopper population is 2nd - 3rd instar nymphs. Once grasshoppers contact and/or ingest VANTACOR insect control there will be rapid feeding cessation; insect mortality may not occur until a week later or longer. Do not make more than two sequential applications of VANTACOR insect control before rotating to another registered insecticide having a different mode-of-action.

**VANTACOR insect control RATE**

<b>Crop</b>	<b>Application Method</b>	<b>Target Pest</b>	<b>Lb ai per acre</b>	<b>fluid ounces product per acre</b>	<b>Last Application (Days to Harvest)</b>	<b>REI (Hours)</b>
Peanut	FOLIAR  OVERHEAD CHEMIGATION	Corn earworm Beet armyworm Fall armyworm Green cloverworm Southern armyworm Tobacco budworm Velvetbean caterpillar Lesser cornstalk borer	0.047 - 0.098	1.2 – 2.5	1	4
		Cabbage looper Granulate cutworm Soybean looper	0.066 - 0.098	1.7 – 2.5		
		Grasshoppers	0.027 - 0.066	0.7 – 1.7		

Apply higher rates within the listed range for heavier infestations, larger/denser crops or extreme environmental conditions such as rainy weather and high temperatures.

**USE RESTRICTIONS**

Do not make more than 4 applications per acre per calendar year.

Minimum interval between treatments is 5 days.

Do not apply more than 5.1 fl oz VANTACOR insect control or 0.2 lb a.i. of chlorantraniliprole containing products per acre per calendar year.

VANTACOR insect control can be applied by overhead sprinkler chemigation systems. See “CHEMIGATION USING OVERHEAD SPRINKLER SYSTEMS - CEREAL GRAINS, CORN (FIELD, POP, SWEET, GROWN FOR SEED), COTTON, GRASS FORAGE, FODDER, and HAY, MINT (PEPPERMINT AND SPEARMINT), LEGUMES, NON-GRASS ANIMAL FEEDS, OILSEED GROUP, PEANUT, POTATO, SOYBEAN, AND SUGARCANE” section for instructions on overhead sprinkler chemigation.

**Grasshopper** - Apply foliarly when grasshopper populations reach local established thresholds to prevent crop damage. Correct timing of spray applications to nymphal stages and thorough coverage is critical to achieve control. Performance is improved with the addition of a Methylated Seed Oil (MSO) adjuvant at 1 gallon per 100 gallons of spray volume (1% v/v) when eggs have hatched and the majority of the grasshopper population is 2nd - 3rd instar nymphs. Once grasshoppers contact and/or ingest VANTACOR insect control there will be rapid feeding cessation; insect mortality may not occur until a week later or longer. Do not make more than two sequential applications of VANTACOR insect control before rotating to another registered insecticide having a different mode-of-action.

**VANTACOR insect control RATE**

Crop	Application Method	Target Pest	Lb ai per acre	fluid ounces product per acre	Last Application (Days to Harvest)	REI (Hours)
Potato	FOLIAR	Beet and Yellowstriped Armyworms Cabbage looper Colorado potato beetle European corn borer Potato tuberworm	0.047 - 0.098	1.2 – 2.5	14	4
	OVERHEAD CHEMIGATION	Grasshoppers	0.027 - 0.066	0.7 – 1.7		

Apply higher rates within the listed range for heavier infestations, larger/denser crops or extreme environmental conditions such as rainy weather and high temperatures.

**USE RESTRICTIONS**

Do not make more than 4 applications per acre per calendar year.

Do not apply more than 5.1 fl oz VANTACOR insect control or 0.2 lb a.i. of chlorantraniliprole containing products per acre per calendar year. The minimum interval between treatments is 5 days.

**Colorado potato beetle resistance management:** Do not apply VANTACOR insect control more than twice to a generation of Colorado potato beetle or within any 30 day period. Application(s) to the next generation of Colorado potato beetle must be with an effective product with a different mode of action.

**Potato tuberworm:** Apply VANTACOR insect control at rates of 1.2 – 1.7 fl oz per acre to control potato tuberworm. Begin application when field scouting indicates the presence of tuberworm adults and/or larvae. Potato tuberworm often have overlapping generations so repeat applications of VANTACOR insect control may be needed based on field scouting. Avoid treating successive generations with the same mode of action. It is important to protect the crop just prior to harvest when foliage starts to senesce. Use the high rate of VANTACOR insect control where potato tuberworm pressure is high. Failure to adequately control potato tuberworm larvae prior to crop senescence or vine kill increases the risk of tuber damage. Foliar sprays alone, by air or ground, may not provide adequate control of larvae in the mid to lower crop canopy. Performance is improved by applying via overhead chemigation. Alternatively, integrate chemigation applications into the foliar spray program. Performance is improved with the addition of a Methylated Seed Oil (MSO) adjuvant at 1 gallon per 100 gallons of spray volume (1% v/v). For chemigation applications, apply in 0.1 to 0.2 acre inches of water and add MSO at 12 to 16 fl oz/acre. VANTACOR insect control can be applied via overhead sprinkler chemigation systems.

Do not apply VANTACOR insect control more than once to Colorado potato beetle via overhead chemigation.

VANTACOR insect control may only be applied to potatoes as a direct foliar spray or via chemigation through overhead sprinkler irrigation systems. See “CHEMIGATION USING OVERHEAD SPRINKLER SYSTEMS - CEREAL GRAINS, CORN (FIELD, POP, SWEET, GROWN FOR SEED), COTTON, GRASS FORAGE, FODDER, and HAY, LEGUMES, MINT (PEPPERMINT AND SPEARMINT), NON-GRASS ANIMAL FEEDS, OILSEED GROUP, PEANUT, POTATO, SOYBEAN, AND SUGARCANE” section for instructions on overhead sprinkler chemigation.

**Cabbage looper:** West of the Rocky Mountains - (NM, CO, WY, MT, UT, NV, AZ, ID, WA, OR, CA, AK and HI) apply VANTACOR insect control at 0.7 – 1.2 fl oz per acre (0.027 - 0.047 lb ai/acre) to control early stage instars (1st - 3rd instar).

**Colorado potato beetle:** West of the Rocky Mountains - (NM, CO, WY, MT, UT, NV, AZ, ID, WA, OR, CA, AK and HI) apply VANTACOR insect control at 0.7 – 1.2 fl oz per acre (0.027 - 0.047 lb ai/acre) to control local populations of Colorado Potato Beetle believed to be sensitive to most commonly used insecticides. Apply just prior to or just after egg hatch while larvae are small. In some areas, where local populations of Colorado Potato Beetle have elevated levels of resistance to insecticides, use VANTACOR insect control at the 1.7 fluid ounce per acre application rate. With resistant populations of Colorado Potato Beetle, back-to- back applications on 5 to 7 day intervals may be required to achieve maximum control.

**Grasshopper** - Apply foliarly when grasshopper populations reach local established thresholds to prevent crop damage. Correct timing of spray applications to nymphal stages and thorough coverage is critical to achieve control. Performance is improved with the addition of a Methylated Seed Oil (MSO) adjuvant at 1 gallon per 100 gallons of spray volume (1% v/v) when eggs have hatched and the majority of the grasshopper population is 2nd - 3rd instar nymphs. Once grasshoppers contact and/or ingest VANTACOR insect control there will be rapid feeding cessation; insect mortality may not occur until a week later or longer. Do not make more than two sequential applications of VANTACOR insect control before rotating to another registered insecticide having a different mode-of-action.

VANTACOR insect control RATE

Crop	Application Method	Target Pest	Lb ai per acre	fluid ounces product per acre	Last Application (Days to Harvest)	REI (Hours)
Oilseed Group: (EPA Crop Group 20) except milkweed Including: Borage; Calendula; Canola; Castor oil plant; Chinese tallowtree; Cottonseed; Crambe; Cuphea; Euphorbia; Evening primrose; Flax seed; Gold of pleasure; Hare's ear mustard; Jojoba; Lesquerella; Lunaria; Meadowfoam; Mustard seed; Niger seed; Oil radish; Poppy seed; Rapeseed; Rose hip; Safflower; Sesame; Stokes aster; Sunflower; Sweet rocket; Tallowwood; Tea oil plant; Vernonia; cultivars, varieties, and/or hybrids of these	FOLIAR	Diamondback moth Banded sunflower moth	0.047 - 0.098	1.2 – 2.5	1	4
	OVERHEAD CHEMIGATION	Sunflower moth Grasshoppers	0.027 - 0.066	0.7 – 1.7		

Apply higher rates within the listed range for heavier infestations, larger/denser crops or extreme environmental conditions such as rainy weather and high temperatures.

**USE RESTRICTIONS**

Do not make more than 4 applications per acre per calendar year.

Minimum interval between treatments is 5 days.

Do not apply more than 5.1 fl oz VANTACOR insect control or 0.2 lb a.i. of chlorantraniliprole containing products per acre per calendar year.

VANTACOR insect control can be applied by overhead sprinkler chemigation systems. See “CHEMIGATION USING OVERHEAD SPRINKLER SYSTEMS - CEREAL GRAINS, CORN (FIELD, POP, SWEET, GROWN FOR SEED), COTTON, GRASS FORAGE, FODDER, and HAY, LEGUMES, MINT (PEPPERMINT AND SPEARMINT), NON-GRASS ANIMAL FEEDS, OILSEED GROUP, PEANUT, POTATO, SOYBEAN, AND SUGARCANE” section for instructions on overhead sprinkler chemigation.

**Banded sunflower moth and sunflower moth** - Apply when moth populations reach local established treatment thresholds and as blooms begin to open (sunflower growth stage R-5.0 to R-5.1) to prevent crop damage. Make applications at 5-7 day intervals when moth pressure is heavy.

**Grasshopper** - Apply foliarly when grasshopper populations reach local established thresholds to prevent crop damage. Correct timing of spray applications to nymphal stages and thorough coverage is critical to achieve control. Performance is improved with the addition of a Methylated Seed Oil (MSO) adjuvant at 1 gallon per 100 gallons of spray volume (1% v/v) when eggs have hatched and the majority of the grasshopper population is 2nd - 3rd instar nymphs. Once grasshoppers contact and/or ingest VANTACOR insect control there will be rapid feeding cessation; insect mortality may not occur until a week later or longer. Do not make more than two sequential applications of VANTACOR insect control before rotating to another registered insecticide having a different mode-of-action.

**VANTACOR insect control RATE**

<b>Crop</b>	<b>Application Method</b>	<b>Target Pest</b>	<b>Lb ai per acre</b>	<b>fluid ounces product per acre</b>	<b>Last Application (Days to Harvest)</b>	<b>REI (Hours)</b>
<b>Root and Tuber Vegetables (EPA Crop Group 1), except potato</b> Including: Arracacha; Arrowroot; Artichoke, Chinese; Artichoke, Jerusalem; Beet, garden; Beet, sugar; Burdock, edible; Canna, edible; Carrot; Cassava, bitter and sweet; Celeriac; Chayote (root); Chervil, turnip-rooted; Chicory; Chufa; dasheen (taro); Ginger; Ginseng; Horseradish; Leren; Parsley, turnip-rooted; Parsnip; Radish; Radish, oriental; Rutabaga; Salsify; Salsify, black; Salsify, Spanish; Skirret; Sweet potato; Tanier; Turmeric; Turnip; Yam bean; Yam, true.	FOLIAR	Beet armyworm Western yellowstriped armyworm	0.047 - 0.098	1.2 – 2.5	1	4

Apply higher rates within the listed range for heavier infestations, larger/denser crops or extreme environmental conditions such as rainy weather and high temperatures.

**USE RESTRICTIONS**

Do not make more than 4 applications per acre per crop or 16 applications per acre per calendar year.  
 Minimum interval between treatments is 3 days.  
 Do not apply more than 5.1 fl oz VANTACOR insect control or 0.2 lb a.i. of chlorantraniliprole containing products per acre per crop.  
 Do not apply more than 20.5 fl oz VANTACOR insect control or 0.8 lb a.i. of chlorantraniliprole containing products per acre per calendar year; in NY do not apply more than 5.1 fl oz VANTACOR insect control or 0.2 lb a.i. of chlorantraniliprole containing products per acre per calendar year.

**VANTACOR insect control RATE**

<b>Crop</b>	<b>Application Method</b>	<b>Target Pest</b>	<b>Lb ai per acre</b>	<b>fluid ounces product per acre</b>	<b>Last Application (Days to Harvest)</b>	<b>REI (Hours)</b>
Leaves of Root and Tuber Vegetables (EPA Crop Group 2) (Human Food or Animal Feed) Including: Beet, garden; Beet, sugar; Burdock, edible; Carrot; Cassava, bitter and sweet; Celeriac; Chervil, turnip-rooted; Chicory; Dasheen (taro); Parsnip; Radish; Radish, oriental (daikon); Rutabaga; Salsify, black; Sweet potato; Tanier; Turnip; Yam, true	FOLIAR	Beet armyworm Western yellowstriped armyworm	0.047 - 0.098	1.2 – 2.5	1	4
		Grasshoppers	0.027 – 0.066	0.7 – 1.7		

Apply higher rates within the listed range for heavier infestations, larger/denser crops or extreme environmental conditions such as rainy weather and high temperatures.

**USE RESTRICTIONS**

Do not make more than 4 applications per acre per crop or 16 applications per acre per calendar year.

Minimum interval between treatments is 3 days.

Do not apply more than 5.1 fl oz VANTACOR insect control or 0.2 lb a.i. of chlorantraniliprole containing products per acre per crop.

Do not apply more than 20.5 fl oz VANTACOR insect control or 0.8 lb a.i. of chlorantraniliprole containing products per acre per calendar year; in NY do not apply more than 5.1 fl oz VANTACOR insect control or 0.2 lb a.i. of chlorantraniliprole containing products per acre per calendar year.

**Grasshopper** - Apply foliarly when grasshopper populations reach local established thresholds to prevent crop damage. Correct timing of spray applications to nymphal stages and thorough coverage is critical to achieve control. Performance is improved with the addition of a Methylated Seed Oil (MSO) adjuvant at 1 gallon per 100 gallons of spray volume (1% v/v) when eggs have hatched and the majority of the grasshopper population is 2nd - 3rd instar nymphs. Once grasshoppers contact and/or ingest VANTACOR insect control there will be rapid feeding cessation; insect mortality may not occur until a week later or longer. Do not make more than two sequential applications of VANTACOR insect control before rotating to another registered insecticide having a different mode-of-action.

**VANTACOR insect control RATE**

<b>Crop</b>	<b>Application Method</b>	<b>Target Pest</b>	<b>Lb ai per acre</b>	<b>fluid ounces product per acre</b>	<b>Last Application (Days to Harvest)</b>	<b>REI (Hours)</b>
Soybean Including edamame (immature soybean)	FOLIAR  OVERHEAD CHEMIGATION	Corn earworm Beet armyworm Fall armyworm Cabbage looper Green cloverworm Southern armyworm Soybean looper Tobacco budworm Velvetbean caterpillar Woollybear caterpillar Thistle caterpillar Lesser cornstalk borer Garden webworm Cutworms	0.047 - 0.098	1.2 – 2.5	1	4
		Grasshoppers	0.027 - 0.066	0.7 – 1.7		
		Decetes stem borer	0.066 - 0.098	1.7 – 2.5		

Apply higher rates within the listed range for heavier infestations, larger/denser crops or extreme environmental conditions such as rainy weather and high temperatures.

**USE RESTRICTIONS**

Do not make more than 4 applications per acre per calendar year.

Minimum interval between treatments is 3 days.

Do not apply more than 5.1 fl oz VANTACOR insect control or 0.2 lb a.i. of chlorantraniliprole containing products per acre per calendar year.

VANTACOR insect control can be applied by overhead sprinkler chemigation systems. See “CHEMIGATION USING OVERHEAD SPRINKLER SYSTEMS - CEREAL GRAINS, CORN (FIELD, POP, SWEET, GROWN FOR SEED), COTTON, GRASS FORAGE, FODDER, and HAY, LEGUMES, MINT (PEPPERMINT AND SPEARMINT), NON-GRASS ANIMAL FEEDS, OILSEED GROUP, PEANUT, POTATO, SOYBEAN, AND SUGARCANE” section for instructions on overhead sprinkler chemigation.

**Grasshopper** -Apply foliarly when grasshopper populations reach local established thresholds to prevent crop damage. Correct timing of spray applications to nymphal stages and thorough coverage is critical to achieve control. Performance is improved with the addition of a Methylated Seed Oil (MSO) adjuvant at 1 gallon per 100 gallons of spray volume (1% v/v) when eggs have hatched and the majority of the grasshopper population is 2nd - 3rd instar nymphs. Once grasshoppers contact and/or ingest VANTACOR insect control there will be rapid feeding cessation; insect mortality may not occur until a week later or longer. Do not make more than two sequential applications of VANTACOR insect control before rotating to another registered insecticide having a different mode-of-action.

**Decetes stem borer** - To minimize crop damage by the pest, apply at the onset of adult beetle flight. Ensure thorough spray coverage and make application to soybeans prior to egg laying. For best results, regular scouting using a sweep net is necessary to identify the emergence and infestation of adult beetles. If regular scouting is not used, apply at 1500 Growing Degree Days (GDD) in Nebraska and northern Kansas or consult with your local agricultural advisor for advice on application timing. Continued scouting should be used to track the duration of the emergence period. A second application may be necessary at 3 to 4 weeks after the initial application if adults continue to emerge over an extended period.

<b>Crop</b>	<b>Application Method</b>	<b>Target Pest</b>	<b>Lb ai per acre</b>	<b>fluid ounces product per acre</b>	<b>Last Application (Days to Harvest)</b>	<b>REI (Hours)</b>
Sugarcane	FOLIAR	Sugarcane borer Mexican rice borer	0.047 - 0.098	1.2 – 2.5	14	4
	OVERHEAD CHEMIGATION	Grasshoppers	0.027 - 0.066	0.7 – 1.7		

Apply higher rates within the listed range for heavier infestations, larger/denser crops or extreme environmental conditions such as rainy weather and high temperatures.

**USE RESTRICTIONS**

Do not make more than 4 applications per acre per calendar year.

Minimum interval between treatments is 7 days.

Do not apply more than 5.1 fl oz VANTACOR insect control or 0.2 lb a.i. of chlorantraniliprole containing products per acre per calendar year.

VANTACOR insect control can be applied by overhead sprinkler chemigation systems. See “CHEMIGATION USING OVERHEAD SPRINKLER SYSTEMS - CEREAL GRAINS, CORN (FIELD, POP, SWEET, GROWN FOR SEED), COTTON, GRASS FORAGE, FODDER, and HAY, LEGUMES, MINT (PEPPERMINT AND SPEARMINT), NON-GRASS ANIMAL FEEDS, OILSEED GROUP, PEANUT, POTATO, SOYBEAN, AND SUGARCANE” section for instructions on overhead sprinkler chemigation.

**Mexican rice borer** - Make the application at initiation of egg hatch, small larvae or at first signs of infestation. The lower recommended rate range can be used when shorter residual control is needed. Use the higher recommended rate range for heavy insect pressure or when longer residual control is desired. Make the application before pests reach damaging levels. Apply in sufficient water to obtain thorough and uniform cover of foliage. Consult your state cooperative extension service, professional consultants or other qualified authorities to determine appropriate action threshold levels for these pests in sugarcane.

**Grasshopper** - Apply foliarly when grasshopper populations reach local established thresholds to prevent crop damage. Correct timing of spray applications to nymphal stages and thorough coverage is critical to achieve control. Performance is improved with the addition of a Methylated Seed Oil (MSO) adjuvant at 1 gallon per 100 gallons of spray volume (1% v/v) when eggs have hatched and the majority of the grasshopper population is 2nd - 3rd instar nymphs. Once grasshoppers contact and/or ingest VANTACOR insect control there will be rapid feeding cessation; insect mortality may not occur until a week later or longer. Do not make more than two sequential applications of VANTACOR insect control before rotating to another registered insecticide having a different mode-of-action.

**VANTACOR insect control RATE**

<b>Crop</b>	<b>Application Method</b>	<b>Target Pest</b>	<b>Lb ai per acre</b>	<b>fluid ounces product per acre</b>	<b>Last Application (Days to Harvest)</b>	<b>REI (Hours)</b>
Teff	FOLIAR	Corn earworm Beet armyworm European corn borer Fall armyworm Grasshoppers Sorghum webworm Southwestern corn borer Sugarcane borer True armyworm	0.047 – 0.066	1.2 – 1.7	14	4

Apply higher rates within the listed range for heavier infestations, larger/denser crops or extreme environmental conditions such as rainy weather and high temperatures.

**USE RESTRICTIONS**

Do not make more than 4 applications per acre per calendar year.

Minimum interval between treatments is 7 days.

Do not apply more than 5.1 fl oz VANTACOR insect control or 0.2 lb a.i. of chlorantraniliprole containing products per acre per calendar year.

<b>Crop</b>	<b>Application Method</b>	<b>Target Pest</b>	<b>Lb ai per acre</b>	<b>fluid ounces product per acre</b>	<b>Last Application (Days to Harvest)</b>	<b>REI (Hours)</b>
Forage, Fodder, and Straw of Teff	FOLIAR	Corn earworm Beet armyworm European corn borer Fall armyworm Grasshoppers Sorghum webworm Southwestern corn borer Sugarcane borer True armyworm	0.047 – 0.066	1.2 – 1.7	14	4

Apply higher rates within the listed range for heavier infestations, larger/denser crops or extreme environmental conditions such as rainy weather and high temperatures.

**USE RESTRICTIONS**

Do not make more than 4 applications per acre per calendar year.

Minimum interval between treatments is 7 days.

Do not apply more than 5.1 fl oz VANTACOR insect control or 0.2 lb a.i. of chlorantraniliprole containing products per acre per calendar year.

**VANTACOR insect control RATE**

<b>Crop</b>	<b>Application Method</b>	<b>Target Pest</b>	<b>Lb ai per acre</b>	<b>fluid ounces product per acre</b>	<b>Last Application (Days to Harvest)</b>	<b>REI (Hours)</b>
Quinoa	FOLIAR	Corn earworm Beet armyworm European corn borer Fall armyworm Grasshoppers Sorghum webworm Southwestern corn borer Sugarcane borer True armyworm	0.047 – 0.066	1.2 – 1.7	14	4

Apply higher rates within the listed range for heavier infestations, larger/denser crops or extreme environmental conditions such as rainy weather and high temperatures.

**USE RESTRICTIONS**

Do not make more than 4 applications per acre per calendar year.

Minimum interval between treatments is 7 days.

Do not apply more than 5.1 fl oz VANTACOR insect control or 0.2 lb a.i. of chlorantraniliprole containing products per acre per calendar year.

<b>Crop</b>	<b>Application Method</b>	<b>Target Pest</b>	<b>Lb ai per acre</b>	<b>fluid ounces product per acre</b>	<b>Last Application (Days to Harvest)</b>	<b>REI (Hours)</b>
Pecan	FOLIAR	Hickory shuckworm Pecan nut casebearer	0.047 - 0.098	1.2 – 2.5	10	4

**USE RESTRICTIONS**

Do not make more than 4 applications per acre per calendar year.

Minimum interval between treatments is 7 days.

Do not apply more than 5.1 fl oz VANTACOR insect control or 0.2 lb a.i. of chlorantraniliprole containing products per acre per calendar year.

Spray Volume: Thorough coverage is essential. Select a spray volume appropriate for the size of trees or plants and density of foliage.

Do not apply less than 30 gal water per acre.

For best results apply 100 - 150 gal water per acre by ground.

Where higher spray volumes are used, apply higher VANTACOR insect control rate in specific rate range.

**Grazing on Pecan orchard or grove floor** – There are no grazing restrictions for (1) Grass forage, fodder and hay. Any grass Gramineae family (either green or cured) except sugarcane and those included in the cereal grains group, that will be fed to or grazed by livestock, all pasture and range grasses and grasses grown for hay or silage, and (2) Non-grass animal feeds.

## **STORAGE AND DISPOSAL**

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

**PESTICIDE STORAGE:** Do not subject to temperatures below 32 degrees F. Store product in original container only in a location inaccessible to children and pets. Do not contaminate water, other pesticides, fertilizer, food or feed in storage. Not for use or storage in or around the home.

**PESTICIDE DISPOSAL:** Do not contaminate water, food or feed by storage or disposal. Wastes resulting from the use of this product must be disposed of on site or at an approved waste disposal facility.

**CONTAINER HANDLING:** Refer to the Net Contents section of this product's labeling for the applicable "Refillable Container" or "Nonrefillable Container" designation.

**For Small (Capacity Equal to or Less Than 5 Gallons) Nonrefillable Plastic Containers:** Nonrefillable container. Do not reuse or refill this container. Triple rinse container (or equivalent) promptly after emptying. Triple rinse as follows: Empty the remaining contents into application equipment or a mix tank and drain for 10 seconds after the flow begins to drip. Fill the container 1/4 full with water and recap. Shake for 10 seconds. Pour rinsate into application equipment or a mix tank or store rinsate for later use or disposal. Drain for 10 seconds after the flow begins to drip. Repeat this procedure two more times. Then offer for recycling if available or puncture and dispose of in a sanitary landfill, or by incineration.

**For All Refillable Containers:** Refillable container. Refill this container with chlorantraniliprole only. Do not reuse this container for any other purpose. Cleaning the container before final disposal is the responsibility of the person disposing of the container. Cleaning before refilling is the responsibility of the refiller. To clean the container before final disposal, empty the remaining contents from this container into application equipment or mix tank. Fill the container about 10 percent full with water. Agitate vigorously or recirculate water with the pump for 2 minutes. Pour or pump rinsate into application equipment or rinsate collection system. Repeat this rinsing procedure two more times. Prior to refilling, inspect carefully for damage such as cracks, punctures, abrasions, worn out threads and closure devices. Check for leaks after refilling and before transporting. Do not transport if container is damaged or leaking. If the container is damaged, leaking or obsolete, or in the event of a major spill, fire or other emergency, contact CHEMTREC (Transportation and Spills) at 1-800-424-9300, day or night.

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## **CONDITIONS OF SALE AND LIMITATION OF WARRANTY AND LIABILITY**

Notice: Read the entire Directions for Use and Conditions of Sale and Limitation of Warranty and Liability before buying or using this product. If the terms are not acceptable, return the product at once, unopened, and the purchase price will be refunded.

The Directions for Use of this product must be followed carefully. It is impossible to eliminate all risks inherently associated with the use of this product. Crop injury, ineffectiveness, or other unintended consequences may result because of such factors as manner of use or application, weather or crop conditions beyond the control of FMC or Seller. To the extent consistent with applicable law, all such risks shall be assumed by Buyer and User, and, to the extent consistent with applicable law, Buyer and User agree to hold FMC and Seller harmless for any claims relating to such factors.

**Seller warrants that this product conforms to the chemical description on the label and is reasonably fit for the purposes stated on the Directions for Use when used in accordance with the directions under normal conditions of use. TO THE EXTENT CONSISTENT WITH APPLICABLE LAW, FMC MAKES NO WARRANTIES OF MERCHANTABILITY OR OF FITNESS FOR A PARTICULAR PURPOSE, NOR ANY OTHER EXPRESS OR IMPLIED WARRANTIES WITH RESPECT TO THE SELECTION, PURCHASE, OR USE OF THIS PRODUCT. Any warranties, express or implied, having been made are inapplicable if this product has been used contrary to label instructions, or under abnormal conditions, or under conditions not reasonably foreseeable to (or beyond the control of) Seller or FMC, and, to the extent permitted by applicable law, Buyer assumes the risk of any such use.**

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