

Specimen Label



Dow AgroSciences



INSECTICIDE

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For control or suppression of lepidopterous larvae (worms, caterpillars), dipterous leafminers, thrips, and certain psyllids in asparagus, *Brassica* (cole) crops, bulb vegetables, cereal grains (except rice, millet and sorghum), corn (field, sweet, popcorn, and seed corn), cotton, cucurbits, fruiting vegetables (tomato, peppers, and eggplant), globe artichoke, grain amaranth, herbs, leafy vegetables, leaves of legume vegetables, leaves of root and tuber vegetables, legume vegetables (succulent and dried beans and peas), okra, peanut, peppermint, pineapple, quinoa, root and tuber vegetables, soybean, spearmint, spices (except black pepper), strawberry, teosinte, turnip greens, and watercress.

Active Ingredient:

spinetoram (a mixture of spinetoram-J and spinetoram-L)	11.7%
Other Ingredients.....	88.3%
Total.....	100.0%

Contains 1 lb of active ingredient per gallon (120 g ai/liter)

Precautionary Statements

Hazards to Humans and Domestic Animals

EPA Reg. No. 62719-545

CAUTION

Causes Moderate Eye Irritation

Avoid contact with eyes or clothing. Wash thoroughly with soap and water after handling and before eating, drinking, chewing gum, or using tobacco.

Personal Protective Equipment (PPE)

Applicators and other handlers must wear:

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

Follow manufacturer's instructions for cleaning/maintaining PPE. If no such instructions for washables, 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.

First Aid

If in eyes: Hold eye open and rinse slowly and gently with water for 15-20 minutes. Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye. Call a poison control center or doctor for treatment advice.

Have the product container or label with you when calling a poison control center or doctor, or going for treatment. You may also contact 1-800-992-5994 for emergency medical treatment information.

Environmental Hazards

This product is toxic to bees exposed to treatment during the 3 hours following treatment. Do not apply this pesticide to blooming, pollen-shedding or nectar-producing parts of plants if bees may forage on the plants during this time period. This product is toxic to aquatic invertebrates. Do not apply directly to water, to areas where surface water is present or to intertidal areas below the mean high water mark. Do not contaminate water when disposing of equipment washwaters. Do not apply where runoff is likely to occur. Do not apply when weather conditions favor drift from treated areas. Drift and runoff from treated areas may be hazardous to aquatic organisms in neighboring areas. Apply this product only as specified on the label.

Directions for Use

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

Read all Directions for Use carefully before applying.

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.

Agricultural Use Requirements

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

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

PPE required for early entry to 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, is:

- Coveralls
- Chemical-resistant gloves made of any waterproof material
- Shoes plus socks

Storage and Disposal

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

Pesticide Storage: Store in original container only. In case of leak or spill, contain material with absorbent materials and dispose as waste.

Pesticide Disposal: Wastes resulting from the use of this product must be disposed of on site or at an approved waste disposal facility.

Nonrefillable rigid containers 5 gallons or less:

Container Handling: Nonrefillable container. Do not reuse or refill this container.

Triple rinse or pressure 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. **Pressure rinse** as follows: Empty the remaining contents into application equipment or a mix tank and continue to drain for 10 seconds after the flow begins to drip. Hold container upside down over application equipment or mix tank and continue to drain for 10 seconds after the flow begins to drip. Hold container upside down over application equipment or mix tank or collect rinsate for later use or disposal. Insert pressure rinsing nozzle in the side of the container, and rinse at about 40 psi for at least 30 seconds. Drain for 10 seconds after the flow begins to drip. Then offer for recycling if available or puncture and dispose of in a sanitary landfill, or by incineration, or by other procedures allowed by state and local authorities.

Refillable rigid containers larger than 5 gal:

Container Handling: Refillable container. Refill this container with pesticide 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 a mix tank. Fill the container about 10% full with water and, if possible, spray all sides while adding water. If practical, agitate vigorously or recirculate water with the pump for two minutes. Pour or pump rinsate into application equipment or rinsate collection system.

Storage and Disposal (Cont.)

Repeat this rinsing procedure two more times. Then offer for recycling if available or puncture and dispose of in a sanitary landfill, or by incineration, or by other procedures allowed by state and local authorities.

Nonrefillable rigid containers larger than 5 gal:

Container Handling: Nonrefillable container. Do not reuse or refill this container.

Triple rinse or pressure rinse container (or equivalent) promptly after emptying. **Triple rinse** as follows: Empty the remaining contents into application equipment or a mix tank. Fill the container 1/4 full with water. Replace and tighten closures. Tip container on its side and roll it back and forth, ensuring at least one complete revolution, for 30 seconds. Stand the container on its end and tip it back and forth several times. Turn the container over onto its other end and tip it back and forth several times. Empty the rinsate into application equipment or a mix tank or store rinsate for later use or disposal. Repeat this procedure two more times. **Pressure rinse** as follows: Empty the remaining contents into application equipment or a mix tank and continue to drain for 10 seconds after the flow begins to drip. Hold container upside down over application equipment or mix tank and continue to drain for 10 seconds after the flow begins to drip. Hold container upside down over application equipment or mix tank or collect rinsate for later use or disposal. Insert pressure rinsing nozzle in the side of the container, and rinse at about 40 psi for at least 30 seconds. Drain for 10 seconds after the flow begins to drip. Then offer for recycling if available or puncture and dispose of in a sanitary landfill, or by incineration, or by other procedures allowed by state and local authorities.

Product Information

Radiant™ SC insecticide is used for control or suppression of many foliage feeding pests including lepidopterous larvae (worms or caterpillars), thrips, Colorado potato beetles, dipterous leafminers, and certain psyllids infesting labeled crops. This product's active ingredient, spinetoram, is derived from the fermentation of *Saccharopolyspora spinosa*, a naturally occurring soil organism. Mix the suspension concentrate of Radiant SC with water and apply as a foliar spray with aerial or ground equipment suitable for conventional insecticide spraying.

Product Use Precautions

Integrated Pest Management (IPM) Programs

Radiant SC is recommended for IPM programs in labeled crops. Apply Radiant SC when field scouting indicates target pest densities have reached the economic threshold, i.e., the point at which the insect population must be reduced to avoid economic losses beyond the cost of control. Other than reducing the target pest species as a food source, Radiant SC does not have a significant impact on certain parasitic insects or the natural predaceous arthropod complex in treated crops, including big-eyed bugs, ladybird beetles, flower bugs, lacewings, minute pirate bugs, damsel bugs, assassin bugs, or spiders. The feeding activities of these beneficials will aid in natural control of other insects and reduce the likelihood of secondary pest outbreaks. If Radiant SC is tank mixed with any insecticide that reduces its selectivity in preserving beneficial predatory insects, the full benefit of Radiant SC in an IPM program may be reduced.

Insecticide Resistance Management (IRM)

Radiant SC contains spinetoram, a Group 5 insecticide. Insect/mite biotypes with acquired resistance to Group 5 insecticides may eventually dominate the insect/mite population if Group 5 insecticides are used repeatedly in the same field or area, or in successive years as the primary method of control for targeted species. This may result in partial or total loss of control of those species by Radiant SC or other Group 5 insecticides. Currently, only spinetoram and spinosad active ingredients are classified as Group 5 insecticides. These two insecticide active ingredients share a common mode of action and must not be rotated with each other for control of pests listed on this label. Spinetoram and spinosad may be rotated with all other labeled insecticide active ingredients.

To delay development of insecticide resistance, the following practices are recommended:

- Carefully follow the specific label guidelines within the Use Direction sections of this label, especially in regard to IRM recommendations.
- Avoid use of the same active ingredient or mode of action (same insecticide group) on consecutive generations of insects. However, multiple applications to reduce a single generation are acceptable. Treat the next generation with a different active ingredient that has a different mode of action, or use no treatment for the next generation.
- Avoid using less than labeled rates of any insecticide when applied alone or in tank mixtures.

- Applications should be targeted against early insect developmental stages whenever possible.
- Base insecticide use on comprehensive IPM programs including crop rotations.
- Monitor treated insect populations in the field for loss of effectiveness.
- Contact your local extension specialist, certified crop advisor, and/or manufacturer for insecticide resistance management and/or IPM recommendations for the specific site and resistant pest problem.
- For further information or to report suspected resistance, contact your local Dow AgroSciences by calling 800-258-3033.

Mixing Directions

Always shake well before use. Avoid freezing.

Application Rate Chart for Crop Uses

Application Rate of Radiant SC (fl oz/acre)	Active Ingredient Equivalent (lb ai/acre)
12	0.0938
11	0.0859
10	0.0781
9.5	0.0742
9	0.0703
8.5	0.0664
8	0.0625
7.5	0.0586
7	0.0547
6.5	0.0508
6	0.0469
5.5	0.0430
5	0.0391
4.5	0.0352
4	0.0313
3.5	0.0273
3	0.0234
2.5	0.0195
2	0.0156

Radiant SC - Alone: Fill the spray tank with water to about 1/2 of the required spray volume. Start agitation and add the required amount of Radiant SC. Continue agitation while mixing and filling the spray tank to the required spray volume. Maintain sufficient agitation during application to ensure uniformity of the spray mix. Do not allow water or spray mixture to back-siphon into the water source.

Radiant SC - Tank Mix: When tank mixing Radiant SC with other materials, a compatibility test (jar test) using relative proportions of the tank mix ingredients should be conducted prior to mixing ingredients in the spray tank. If foliar fertilizers are used, the jar test should be repeated with each batch of fertilizer utilizing the mixing water source. Vigorous, continuous agitation during mixing, filling and throughout application is required for all tank mixes. Sparger pipe agitators generally provide the most effective agitation in spray tanks. To prevent foaming in the spray tank, avoid stirring or splashing air into the spray mixture.

Mixing Order for Tank Mixes: Fill the spray tank with water to 1/4 to 1/3 of the required spray volume. Start agitation. Add different formulation types in the order indicated below, allowing time for complete dispersion and mixing after addition of each product. Allow extra dispersion and mixing time for dry flowable products.

Add different formulation types in the following order:

1. Water dispersible granules
2. Wettable powders
3. Radiant SC and other aqueous suspensions

Maintain agitation and fill spray tank to 3/4 of total spray volume. Then add:

4. Emulsifiable concentrates and water-based solutions
5. Spray adjuvants, surfactants, and oils
6. Foliar fertilizers

Finish filling the spray tank. Maintain continuous agitation during mixing, final filling and throughout application. If spraying and agitation must be stopped before the spray tank is empty, the materials may settle to the bottom. Settled materials must be re-suspended before spraying is resumed. A sparger agitator is particularly useful for this purpose.

Premixing: Dry and flowable formulations may be premixed with water (slurried) and added to the spray tank through a 20 to 35 mesh screen. This procedure assures good initial dispersion of these formulation types.

Spray Tank pH: A spray tank pH between 5.0 and 9.0 is suggested to achieve maximum performance of Radiant SC. If the water source is outside of this pH range, or tank mixing other pesticides, adjuvants, or foliar nutrients will cause the pH to fall outside this range, consider adjusting the spray tank pH to be between 5.0 and 9.0 before adding Radiant SC. To do this, add all other tank mix components first, then check the spray tank pH and adjust if desired, and then add Radiant SC. If you require additional information on how to adjust spray tank pH, contact your Dow AgroSciences representative.

Use of Adjuvants: Adjuvants may be used to improve control of dipterous and lepidopterous leafminers, and thrips in situations where achieving uniform plant coverage is difficult such as a closed crop canopy, or dense foliage), or penetration into waxy leaf surfaces is required.

- Use only adjuvant products labeled for agricultural use and follow the manufacturer's label directions. A nominal concentration of 1 to 2 quarts per 100 gallons (0.25 to 0.5% v/v) is generally sufficient.
- For dipterous leafminers and thrips, emulsified crop oils or methylated crop oil plus organosilicone combination products are recommended.
- For lepidopterous leafminers, thrips, and psyllids, citrus oils or horticultural oils may improve control.
- When using adjuvants, always conduct a jar test to determine the compatibility of the various components in the spray mixture. Crop safety should be evaluated in a small area of the crop whenever there is a significant change in spray mixture ingredients or source of water for the spray mixture.
- Do not use diesel fuel or pure mineral oil.
- When an adjuvant is to be used with this product, Dow AgroSciences recommends the use of a Chemical Producers and Distributors Association certified adjuvant.

Application Directions

Do not apply Radiant SC in greenhouses or other enclosed structures used for growing crops.

Proper application techniques help ensure thorough spray coverage and correct dosage for optimum insect control. The following directions are provided for ground and aerial application of Radiant SC. Attention should be given to sprayer speed and calibration, wind speed, and foliar canopy density to ensure adequate spray coverage.

Wind Direction and Speed

Only apply this product if the wind direction favors on-target deposition. Do not apply when the wind velocity exceeds 15 mph. Wind speed must be measured adjacent to the application site on the upwind side, immediately prior to application.

Temperature Inversion

Do not make aerial or ground applications into temperature inversions. Inversions are characterized by stable air and increasing temperatures with height above the ground. Mist or fog may indicate the presence of an inversion in humid areas. The applicator may detect the presence of an inversion by producing smoke and observing a smoke layer near the ground surface.

Droplet Size

Use only medium or coarser spray nozzles (for ground and non-ULV aerial application) according to ASABE Standard S-572 definition for standard nozzles. In conditions of low humidity and high temperatures, applicators should use a coarser droplet size. Exceptions may be indicated for specific crop groups.

Ground Row Crop Application

Use calibrated power-operated ground spray equipment capable of providing uniform coverage of the target crop. Orient the boom and nozzles to obtain uniform crop coverage. A minimum of 5 to 10 gallons per acre should be utilized, increasing volume with crop size and/or pest pressure. Use hollow cone, twin jet flat fan nozzles or other atomizer suitable for insecticide spraying to provide a fine to coarse spray quality (per ASABE S-572, see nozzle catalogs). Under certain conditions, drop nozzles may be required to obtain complete coverage of plant surfaces. Follow manufacturer's specifications for ideal nozzle spacing and spray pressure. Minimize boom height to optimize uniformity of coverage and optimize deposition (on-target deposition) to reduce drift.

Groundboom Application

For groundboom applications, apply using a nozzle height of no more than 4 feet above the ground or crop canopy. For ground boom and airblast applications, turn off outward pointing nozzles at row ends and when spraying the outer two rows. To minimize spray loss over the top of the crop canopy, spray must be directed into the canopy. Calibrate airblast application equipment and operate in a manner that achieves full displacement of the air within the crop canopy with air containing spray droplets.

Aerial Application

Apply in spray volume of 3 to 5 gallons or more per acre. Nozzle configuration should provide a medium to fine droplet size per ASABE S-572 standard (see USDA-ARS or NAAA handbook). Guidance for ASABE S-572 nozzle configuration can be found at the following web site: <http://apmru.usda.gov/downloads/downloads.htm>. Boom length must be less than 75% of wing or 85% of rotor span and swath adjustment (offset) to compensate for crosswinds. Observe minimum safe application height (maximum 12 feet for agricultural canopies). Use GPS equipment, swath markers or flagging to ensure proper application to the target area. Configure the boom nozzle used (e.g., at NAAA/ Operation Safe Fly-In) for both crosswind and near parallel winds. If application is made parallel to the wind direction, adjust swath width downward. Use swath adjustment (offset) to compensate for crosswinds. Do not apply under completely calm wind conditions. It is best to apply when wind speed is between 2 to 10 mph. Under conditions of low humidity and high temperatures, adjust spray volume and droplet size upward to compensate for evaporation of spray droplets.

Additional Requirements for Aerial Applications: Mount the spray boom on the aircraft to minimize drift caused by wingtip or rotor vortices. Use the minimum practical boom length and do not exceed 75% of the wing span or 80% rotor diameter. Flight speed and nozzle orientation must be considered in determining droplet size. Spray must be released at the lowest height consistent with the pest control and flight safety. Do not release spray at a height greater than 10 feet above the crop canopy unless a greater height is required for aircraft safety. When applications are made with a cross-wind, the swath will be displaced downward. The applicator must compensate for this displacement at the downwind edge of the application area by adjusting the path of the aircraft upwind.

Chemigation Application

Radiant SC may be applied through properly equipped chemigation systems for insect control in corn, and potatoes. Follow use directions for these crops in the Uses section of this label. Do not apply Radiant SC by chemigation to other labeled crops except as specified in Dow AgroSciences supplemental labeling or product bulletins.

Directions for Sprinkler Chemigation: Apply this product only through sprinkler irrigation systems including: center pivot, lateral move, end tow, side (wheel) roll, traveler, solid set, or hand move. Do not apply this product through any other type of irrigation system. Sprinkler systems that deliver a low coefficient of uniformity such as certain water drive units are not recommended.

For continuously moving systems, the mixture containing Radiant SC must be injected continuously and uniformly into the irrigation water line as the sprinkler is moving. If continuously moving irrigation equipment is used, apply in no more than 0.25 inch of water. For irrigation systems that do not move during operation, apply in no more than 0.25 inch of irrigation immediately before the end of the irrigation cycle.

Chemigation Equipment Preparation: The following use directions are to be followed when this product is applied through irrigation systems. Thoroughly clean the chemigation system and tank of any fertilizer or chemical residues, and dispose of the residues according to state and federal laws. Flush the injection system with soap or a cleaning agent and water. Determine the amount of Radiant SC needed to cover the desired acreage. Mix according to instructions in the Mixing Directions section above using a dilution concentrate matching your injector system requirements. Continually agitate the mixture during mixing and application.

Chemigation Equipment Calibration: In order to calibrate the irrigation system and injector to apply the mixture containing Radiant SC, determine the following: 1) Calculate the number of acres irrigated by the system; 2) Calculate the amount of product required and premix. 3) Determine the irrigation rate and determine the number of minutes for the system to cover the intended treatment area; 4) Calculate the total gallons of insecticide mixture needed to cover the desired acreage. Divide the total gallons of insecticide mixture needed by the number of minutes (minus time to flush out) to cover the treatment area. This value equals the gallons per minute output that the injector or eductor must deliver. Convert the gallons per minute to milliliters or ounces per minute if needed. 5) Calibrate the injector pump with the system in operation at the desired irrigation rate. It is suggested that the injector pump/system be calibrated at least twice before operation, and the system should be monitored during operation.

Chemigation Equipment Requirements:

- The system must contain an air gap, an approved backflow prevention device, a functional check valve, vacuum relief valve (including inspection port), and low-pressure drain appropriately located on the irrigation pipeline to prevent water source contamination from back flow. Refer to the American Society of Agricultural Engineer's Engineering Practice 409 for more information or state specific regulations.

- The pesticide injection pipeline must contain a functional, automatic, quick-closing check valve to prevent the flow of fluid back toward the injection pump.
- 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.
- The system must contain functional interlocking controls to automatically shut off the pesticide injection when the water pump motor stops.
- 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.
- Systems must use a metering pump, such as a positive displacement injection pump (e.g., diaphragm pump) effectively designed and constructed of materials that are compatible with pesticides and capable of being fitted with a system interlock.
- To insure uniform mixing of the insecticide in the water line, inject the mixture in the center of the pipe diameter or just ahead of an elbow or tee in the irrigation line so that the turbulence created at those points will assist in mixing. The injection point must be located after all back-flow prevention devices on the water line.
- The tank holding the insecticide mixture should be free of rust, fertilizer, sediment, and foreign material, and equipped with an in-line strainer situated between the tank and the injector point.

Chemigation Operation: Start the water pump and irrigation system, and let the system achieve the desired pressure and speed before starting the injector. Check for leaks and uniformity and make repairs before any chemigation takes place. Start the injection system and calibrate according to manufacturer's specifications. 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.

Chemigation Precautions:

- 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, contact state extension service specialists, equipment manufacturers or other experts.
- 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 daily at least 60 days out of the year.
- A person knowledgeable of the chemigation system and responsible for its operation, or under the supervision of the responsible person, shall operate the system and make necessary adjustments should the need arise and continuously monitor the injection.

Chemigation Restrictions:

- Chemigation systems connected to public water systems must contain a functional, reduced-pressure zone, back flow 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 flow 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.
- The pesticide injection pipeline must contain a functional, automatic, quick-closing check valve to prevent the flow of fluid back toward the injection.
- The pesticide injection pipeline must 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.
- The system must contain functional interlocking controls to automatically shut off the pesticide injection pump when the water pump motor stops, or in cases where there is no water pump, when the water pressure decreases to the point where pesticide distribution is adversely affected.
- Systems must use a metering pump, such as a positive displacement injection pump (e.g., diaphragm pump) effectively designed and constructed of materials that are compatible with pesticides and capable of being fitted with a system interlock.
- Do not connect an irrigation system used for pesticide application (including greenhouse systems) to a public water system unless the pesticide label-prescribed safety devices for public water systems are in place with current certification. Specific local regulations may apply and must be followed.
- Do not apply when wind speed favors drift beyond the area intended for treatment. End guns must be turned off during the application, if they irrigate nontarget areas.

- Do not allow irrigation water to collect or runoff and pose a hazard to livestock, wells, or adjoining crops.
- Do not enter treated area during the reentry interval specified in the Agricultural Use Requirements section of this label unless required PPE is worn.
- Do not apply through sprinkler systems that deliver a low coefficient of uniformity such as certain water drive units.

Rotational Crop Restrictions

Only a crop approved for spinetoram use (Delegate WG or Radiant SC) may be immediately rotated to a treated field. All other crops may be rotated 30 days following last application.

Uses

Asparagus (Post Harvest Protection of Ferns Only)

Pest and Application Rates:

Pest	Radiant SC (fl oz/acre)
asparagus beetle	4 – 8

Application Timing: For determining when to treat, scout with enough regularity to monitor the population size of the labeled pest. Make applications **only to asparagus ferns**. Treat when pests appear, targeting eggs at hatch or small larvae. Consult your Dow AgroSciences representative, extension specialist, certified crop advisor or your state agricultural experiment station for any additional local use recommendations for your area.

Application Rate: Apply Radiant SC as a foliar spray at the rate specified to control asparagus beetle in asparagus ferns. Use a higher rate in the rate range for heavy infestations or advanced growth stages of the beetle. Heavy infestations may require repeat applications, but follow resistance management guidelines.

Resistance Management: Do not make more than two consecutive applications of Group 5 insecticides (spinetoram and spinosad). If additional treatments are required after two consecutive applications of Group 5 insecticides, rotate to another class of effective insecticides for at least one application. Consult your local Dow AgroSciences representative, extension specialist, certified crop advisor, or state agricultural experiment station for information on alternative effective products to use in your area.

Restrictions:

- **Preharvest Interval:** This use is only for asparagus ferns; do not apply within 60 days of spear harvest.
- Do not apply more than a total of 24 fl oz of Radiant SC (0.188 lb ai spinetoram) per acre per year.
- **Maximum Number of Applications:** Do not make more than three applications per year.
- **Minimum Treatment Interval:** Do not make applications less than 4 days apart.

Berry, Low Growing Berry (Subgroup 13-07G)¹ except cranberry and lowbush berry

¹Bearberry; bilberry; cloudberry; lingonberry; muntries; partridgeberry; strawberry; cultivars, varieties, and/or hybrids of these.

Pests and Application Rates:

Pests	Radiant SC (fl oz/acre)
armyworms ¹ leafrollers light brown apple moth thrips ²	6 – 10

¹With the exception of yellowstriped armyworm and western yellowstriped armyworm.

²Control of thrips may be improved with the addition of an adjuvant to the spray mixture. See Use of Adjuvants section under Mixing Directions.

Application Timing: Treat when pests appear, targeting eggs at hatch or small larvae. For thrips, a 3- to 4-day re-treatment schedule may be necessary if there is heavy pest pressure or if the pest population is increasing rapidly. For control of all other pests, a 5- to 7-day re-treatment schedule may be necessary if the crop is growing rapidly or if there is heavy pest pressure. Consult your Dow AgroSciences representative, extension service specialist, certified crop advisor or your state agricultural experiment station for any additional local use recommendations for your area.

Application Rate: Apply as a foliar spray at the rate specified to control target pests. Use a higher rate in the range for larger larvae or moderate to severe pest infestations.

Resistance Management: Do not make more than two consecutive applications of Group 5 insecticides (spinetoram and spinosad). If additional treatments are required after two consecutive applications of Group 5 insecticides, rotate to another class of effective insecticides for at least one application. For thrips, if additional treatments are required after two consecutive applications of Group 5 insecticides, rotate to another class of effective insecticides for at least two applications. Consult your Dow AgroSciences representative, extension specialist, certified crop advisor, or state agricultural experiment station for information on alternative effective products to use in your area.

Restrictions:

- **Preharvest Interval:** Do not apply within 1 day of harvest.
- Do not apply more than a total of 30 fl oz of Radiant SC (0.2343 lb ai spinetoram) per acre per year.
- **Maximum Number of Applications:** Do not make more than three applications per calendar year. See Resistance Management regarding number of applications for specific pests.
- **Minimum Treatment Interval:** Do not make applications less than 3 days apart for thrips, nor less than 4 days apart for all other listed pests.

Brassica (Cole) Leafy Vegetables (Crop Group 5)¹

¹Brassica (cole) leafy vegetables (crop group 5) broccoli, broccoli raab, Brussels sprouts, cabbage, cauliflower, cavalo, Chinese broccoli, Chinese cabbage (bok choy), Chinese cabbage (napa), Chinese mustard cabbage (gai choy), collards, kale, kohlrabi, mizuna, mustard greens, mustard spinach, rape greens

In the state of Georgia, do not apply Radiant SC to broccoli raab, Chinese cabbage (bok choy), collards, kale, mizuna, mustard greens, mustard spinach, rape greens

Pests and Application Rates:

Pests	Radiant SC (fl oz/acre)
armyworms ¹ cabbage looper ² diamondback moth ² imported cabbageworm ² light brown apple moth cabbage root maggot (suppression)	5 – 10
dipterous leafminers, <i>Liriomyza</i> spp ² thrips ²	6 – 10
Hawaiian beet webworm	7 - 10

¹With the exception of yellowstriped armyworm and western yellowstriped armyworm.

²Control of lepidopterous larvae, leafminers, and thrips may be improved with the addition of an adjuvant to the spray mixture. See Use of Adjuvants section under Mixing Directions.

Application Timing (except cabbage root maggot): Treat when pests appear, targeting eggs at hatch or small larvae. For all listed pests, heavy infestations may require repeat applications, but follow resistance management guidelines. Consult your Dow AgroSciences representative, extension service specialist, certified crop advisor or your state agricultural experiment station for any additional local use recommendations for your area.

Application Rate (except cabbage root maggot): Apply Radiant SC as a foliar spray at the rate specified to control target pest. Use a higher rate in the rate range for heavy infestations or advanced growth stages of target pests.

Resistance Management (except cabage root maggot): Do not make more than two consecutive applications of Group 5 insecticides (spinetoram and spinosad). If additional treatments are required after two consecutive applications of Group 5 insecticides, rotate to another class of effective insecticides for at least one application. For **diamondback moth and thrips**, if additional treatments are required after two consecutive applications of Group 5 insecticides, rotate to another class of effective insecticides for at least two applications. Do not make more than three applications of Group 5 insecticides for thrips in a season. Consult your Dow AgroSciences representative, extension specialist, certified crop advisor, or state agricultural experiment station for information on alternative effective products to use in your area. Make treatment decisions for the entire farm and consider area wide programs if other growers are in close proximity. Do not make more than six applications of Radiant SC per calendar year for diamondback moth over an entire farm (an area of abutting or nearby fields).

Specific Use Direction for cabbage root maggot:

For **cabbage root maggot suppression**, apply Radiant SC at 5 to 10 fl oz/acre. For 20-inch plant row spacing, i.e. two plant lines per 40 inch bed, apply Radiant SC at 0.19 to 0.38 fl oz per 1000 linear feet of plant row. For 30-inch plant row spacing, apply Radiant SC at 0.29 to 0.57 fl oz per 100 linear feet of plant row. Use proportional amounts for other row spacings, but do not exceed 10 fl oz per acre of Radiant SC per application. Application volume of at least 100 gallons of water per acre is recommended. Performance may be reduced at lower application volumes. Optimum application timing is based on field scouting. Begin applications when adult activity is observed in or near the field.

For direct seeded crops, an application should be made when the crop has developed to about the second true leaf stage and a second application should be made two to three weeks later. Direct the spray in a narrow band at the base of the plants and on the adjacent soil. The recommended width of the spray band is four inches.

For transplanted crops, an application should be made immediately after transplanting and a second application should be made two to three weeks later. Application to a narrow band of soil within 24 hours before transplanting is permitted, provided that the transplants are placed accurately within the band of treated soil and there is minimal disturbance of the treated soil during transplanting.

A third application may be needed under high cabbage root maggot pest pressure conditions, such as when there is a large amount of debris from a previous brassica crop or when adjacent brassica fields are being harvested. For optimum control, direct the spray in a narrow band at the base of the plants.

Do not make more than three applications of Group 5 insecticides (spinetoram and spinosad) per crop cycle for cabbage maggot suppression.

Restrictions:

- **Preharvest Interval:** Do not apply within 1 day of harvest.
- Do not apply more than a total of 34 fl oz of Radiant SC (0.266 lb ai spinetoram) per acre per year.
- **Maximum Number of Applications:** Do not make more than six applications per calendar year. See Resistance Management regarding number of applications for specific pests.
- **Minimum Treatment Interval:** Do not make applications less than 4 days apart.
- Do not apply to seedling cole crops grown for transplant within a greenhouse, shade house, or field plot.

Bulb Vegetables (Subgroups 3-07A & 3-07B)¹

¹Chive, 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, bulb; onion, Chinese, bulb; onion, Beltsville bunching; 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.

Pests and Application Rates:

Pests	Radiant SC (fl oz/acre)
armyworms ^{1,2} European corn bore ² loopers ²	5 – 10
dipterous leafminers ² flea beetles (suppression) thrips ²	6 – 10

¹With the exception of yellowstriped armyworm and western yellowstriped armyworm.

²Control of lepidopterous larvae, leafminers, and thrips may be improved with the addition of an adjuvant to the spray mixture. See Use of Adjuvants under Mixing Directions. Control of thrips requires thorough coverage of the crop. Coverage can be increased by using higher spray pressure and dual directed nozzles.

Application Timing: For determining when to treat, scout with enough regularity to monitor the population size of each of the labeled pests. Treat when pests appear, targeting eggs at hatch or small larvae. Consult your Dow AgroSciences representative, extension specialist, certified crop advisor or your state agricultural experiment station for any additional local use recommendations for your area.

Application Rate: Apply Radiant SC as a foliar spray at the rate specified to control target pests. Use a higher rate in the rate range for larger larvae or heavier infestations.

Resistance Management: Do not make more than two consecutive applications of Group 5 insecticides (spinetoram and spinosad). If additional treatments are required after two consecutive applications of Group 5 insecticides, rotate to another class of effective insecticides for at least one application. For thrips, if additional treatments are required after two consecutive applications of Group 5 insecticides, rotate to another class of effective insecticides for at least two applications. Do not make more than three applications of Group 5 insecticides for thrips in a season. Consult your Dow AgroSciences representative, extension specialist, certified crop advisor, or state agricultural experiment station for information on alternative effective products to use in your area.

Restrictions:

- **Preharvest Interval:** Do not apply within 1 day of harvest.
- Do not apply more than a total of 30 fl oz of Radiant SC (0.234 lb ai spinetoram) per acre per year.
- **Maximum Number of Applications:** Do not make more than five applications per calendar year. See Resistance Management regarding number of applications for specific pests.
- **Minimum Treatment Interval:** Do not make applications less than 4 days apart.

Cereal Grains (Except Rice, Millet and Sorghum) and Grain Amaranth

Cereal grains including barley, buckwheat, milo, oats, rye, triticale, wheat

Pests and Application Rates:

Pests	Radiant SC (fl oz/acre)
cereal leaf beetle	2 – 6
armyworms ¹ corn earworm (headworm) grasshoppers (suppression) southwestern corn borer webworms	3 – 6

¹With the exception of yellowstriped armyworm and western yellowstriped armyworm.

Application Timing: Scout for **armyworms** with enough regularity to monitor egg laying and egg hatch and treat when thresholds are reached. Time applications of Radiant SC to coincide with peak egg hatch and/or small larval stage of each generation.

Application Rate: Apply Radiant SC as a foliar spray at the rate specified for the target pest. Use a higher rate in the rate range for heavy infestations, advanced growth stages of target pests, or difficult spray coverage situations.

Resistance Management: Do not make more than two consecutive applications of Group 5 insecticides (spinetoram and spinosad). If additional treatments are required after two consecutive applications of Group 5 insecticides, rotate to another class of effective insecticides for at least one application. Consult your Dow AgroSciences representative, extension specialist, certified crop advisor, or state agricultural experiment station for information on alternative effective products to use in your area.

Restrictions:

- **Preharvest Interval:** Do not apply within 21 days of grain or straw harvest or within 3 days of forage, fodder, or hay harvest.
- Do not apply more than a total of 18 fl oz of Radiant SC (0.141 lb ai spinetoram) per acre per year.
- **Maximum Number of Applications:** Do not make more than three applications per calendar year.
- **Minimum Treatment Interval:** Do not make applications less than 4 days apart.

Corn (Field, Sweet, Popcorn, Seed Corn) and Teosinte

Pests and Application Rates:

Pests	Radiant SC (fl oz/acre)
armyworms ¹ corn earworm, <i>Helicoverpa zea</i> European corn borer southwestern corn borer western bean cutworm	3 – 6

¹With the exception of yellowstriped armyworm and western yellowstriped armyworm.

Application Timing: Scout for corn borers and armyworms with enough regularity to monitor egg laying and egg hatch. Time applications of Radiant SC to coincide with peak egg hatch of each generation. For corn

earworm control and armyworms, a 2-day re-treatment schedule may be necessary at silking. For control of all other pests, a 5- to 7-day re-treatment schedule may be necessary if the crop is growing rapidly or if there is heavy pest pressure.

Application Rate: Apply Radiant SC as a foliar spray at the rate specified to control target pests. Use a higher rate in the rate range for heavy infestations or advanced growth stages of target pests.

Spray Delivery: For control of **first generation European corn borer and armyworms**, apply broadcast or as a directed spray into the leaf whorls. For control of **corn earworm**, apply broadcast or direct spray to ear zone. Use sufficient spray volume and nozzle pressure to ensure thorough wetting of the silks.

Chemigation: Radiant SC may be applied to corn by chemigation at labeled rates. Refer to the Chemigation Application section.

Resistance Management: Do not make more than two consecutive applications of Group 5 insecticides (spinetoram and spinosad). If additional treatments are required after two consecutive applications of Group 5 insecticides, rotate to another class of effective insecticides for at least one application. Consult your Dow AgroSciences representative, extension specialist, certified crop advisor, or state agricultural experiment station for information on alternative effective products to use in your area.

Restrictions:

Sweet Corn

- **Preharvest Interval:** Do not apply within 1 day of ear harvest or 3 days of forage or fodder harvest.
- Do not apply more than a total of 36 fl oz of Radiant SC (0.281 lb ai spinetoram) per acre per year.
- **Maximum Number of Applications:** Do not make more than six applications per calendar year.
- **Minimum Treatment Interval:** For corn earworm at silking, do not make applications less than 2 days apart. For all other pests and timings, do not make applications less than 4 days apart.

Popcorn and Seed Corn

• **Preharvest Interval:**

Seed Corn: Do not apply within 1 day of grain harvest or 3 days of forage or fodder harvest.

Popcorn: Do not apply within 28 days of grain harvest or 3 days of forage or fodder harvest.

- Do not apply more than a total of 36 fl oz of Radiant SC (0.281 lb ai spinetoram) per acre per year.
- **Maximum Number of Applications:** Do not make more than six applications per calendar year.
- **Minimum Treatment Interval:** For corn earworm at silking, do not make applications less than 2 days apart. For all other pests and timings, do not make applications less than 4 days apart.

Field Corn and Teosinte

- **Preharvest Interval:** Do not apply within 28 days of grain harvest or within 3 days of fodder or forage harvest.
- Do not apply more than a total of 16 fl oz of Radiant SC (0.125 lb ai spinetoram) per acre per year.
- **Maximum Number of Applications:** Do not make more than three applications per calendar year.
- **Minimum Treatment Interval:** For corn earworm at silking, do not make applications less than 2 days apart. For all other pests and timings, do not make applications less than 4 days apart.

Cottonseed (Subgroup 20-C)¹

¹Cottonseed; cultivars, varieties, and/or hybrids of these.

Pests and Application Rates:

Pests	Radiant SC (fl oz/acre)
cotton bollworm (pre-bloom) cotton leafperforator European corn borer tobacco budworm	2.8 – 8
armyworm ¹ cotton bollworm (post-bloom) dipterous leafminers ² loopers saltmarsh caterpillar thrips ²	4.25 – 8

¹With the exception of yellowstriped armyworm and western yellowstriped armyworm.

²Control of lepidopterous larvae, leafminers and thrips may be improved with the addition of an adjuvant to the spray mixture. See Use of Adjuvants section under Mixing Directions.

Application Timing: For **cotton bollworm**, use a lower rate in the rate range at pre-bloom timings and a higher rate in the rate range at post-bloom timings. For **tobacco budworm** and/or **cotton bollworm**, scout fields twice per week and apply Radiant SC when the majority of the population is within blackhead egg stage to 1/8-inch larval length. The following table illustrates the size of development of worms in relation to age and stage of development (instar) as a guide to timing treatments for optimum control:

Age (Days)	Average Size (Inch)	Instar
Hatch	1/16	1st
3	1/4	2nd
5	1/2	3rd
8	7/8	4th
10	1	5th

Note: A scouting schedule of only once per week is risky since hatching worms will have grown to 3rd instar before the next scouting observation has determined the need to spray.

Beet Armyworm: Economic thresholds vary with local conditions and sampling methods. The following is an example of one such method: apply Radiant SC when field scouting reveals three occurrences or more of egg hatch or larval feeding per 100 feet of row.

Loopers: Economic thresholds vary with local conditions and sampling methods. The following is an example of one such method: apply Radiant SC when field scouting reveals 4 larvae per 1 foot of row or 25% defoliation.

Application Rate: Use a higher rate of Radiant SC in the rate range and higher spray volume when one or more of the following is true: tobacco budworms or bollworms are more than 1/4 inch in length; target pest population is 2X above state threshold level; or foliage canopy is tall/dense and worms are present in the lower part of the canopy. Heavy infestations may require repeat applications, but follow resistance management guidelines.

Resistance Management: Do not make more than two consecutive applications of Group 5 insecticides (spinetoram and spinosad). If additional treatments are required after two consecutive applications of Group 5 insecticides, rotate to another class of effective insecticides for at least one application. Do not make more than three applications of Group 5 insecticides for thrips in a season. Consult your Dow AgroSciences representative, extension specialist, certified crop advisor, or state agricultural experiment station for information on alternative effective products to use in your area.

Restrictions:

- **Preharvest Interval:** Do not apply within 28 days of harvest.
- Do not apply more than a total of 34 fl oz of Radiant SC (0.266 lb ai spinetoram) per acre per year.
- **Maximum Number of Applications:** Do not make more than six applications per calendar year. See Resistance Management regarding number of applications for specific pests.
- **Minimum Treatment Interval:** Do not make applications less than 4 days apart.

Cucurbit Vegetables (Crop Group 9)¹

¹Cucurbit vegetables (crop group 9) cucumber, edible gourds, muskmelons (cantaloupe, honeydew, etc.), pumpkin, summer squash, watermelon, winter squash

Pests and Application Rates:

Pests	Radiant SC (fl oz/acre)
armyworms ¹ cabbage looper melonworm pickleworm rindworms	5 – 10
dipterous leafminers ² thrips ²	6 – 10

¹With the exception of yellowstriped armyworm and western yellowstriped armyworm.

²Control of lepidopterous larvae, leafminers and thrips may be improved with the addition of an adjuvant to the spray mixture. See Use of Adjuvants section under Mixing Directions.

Application Timing: Treat when pests appear, targeting eggs at hatch or small larvae. Heavy infestations may require repeat applications,

but follow resistance management guidelines. Consult your Dow AgroSciences representative, extension service specialist, certified crop advisor or your state agricultural experiment station for any additional local use recommendations for your area.

Application Rate: Apply Radiant SC as a foliar spray at the rate specified to control target pests. Use a higher rate in the rate range for heavy infestations or advanced growth stages of target pests.

Resistance Management: Do not make more than two consecutive applications of Group 5 insecticides (spinetoram and spinosad). If additional treatments are required after two consecutive applications of Group 5 insecticides, rotate to another class of effective insecticides for at least one application. Do not make more than three applications of Group 5 insecticides for thrips in a season. Consult your Dow AgroSciences representative, extension specialist, certified crop advisor, or state agricultural experiment station for information on alternative effective products to use in your area

Restrictions:

- **Preharvest Interval:** Do not apply within 3 days of harvest for all cucurbit crops except cucumbers. Do not apply within 1 day of harvest for cucumbers.
- Do not apply more than a total of 34 fl oz of Radiant SC (0.266 lb ai spinetoram) per acre per year.
- **Maximum Number of Applications:** Do not make more than six applications per year. See Resistance Management regarding number of applications for specific pests.
- **Minimum Treatment Interval:** Do not make applications less than 4 days apart.

Herbs (Subgroup 19A)¹

¹Herbs (subgroup 19A) angelica, balm, basil, borage, burnet, chamomile, catnip, chervil (dried), chive, chive (Chinese), clary, culantro (leaf), coriander (leaf), costmary, curry (leaf), dillweed, horehound, hyssop, lavender, lemongrass, lovage (leaf), marigold, marjoram, nasturtium, parsley (dried), pennyroyal, rosemary, rue, sage, savory (summer and winter), sweet bay, tansy, tarragon, thyme, wintergreen, woodruff, wormwood

Pests and Application Rates:

Pests	Radiant SC (fl oz/acre)
armyworms ¹ light brown apple moth loopers thrips ²	5 – 8

¹With the exception of yellowstriped armyworm and western yellowstriped armyworm.

²Control of thrips may be improved with the addition of an adjuvant to the spray mixture. See Use of Adjuvants section under Mixing Directions.

Application Timing: For determining when to treat, scout with enough regularity to monitor the population size of each of the labeled pests. Treat when pests appear, targeting eggs at hatch or small larvae. Consult your Dow AgroSciences representative, extension specialist, certified crop advisor or your state agricultural experiment station for any additional local use recommendations for your area.

Application Rate: Apply Radiant SC as a foliar spray at the rate specified to control target pests. Use a higher rate in the rate range for larger larvae or high infestations and/or larger plant volume. Heavy infestations may require repeat applications, but follow resistance management guidelines.

Resistance Management: Do not make more than two consecutive applications of Group 5 insecticides (spinetoram and spinosad). If additional treatments are required after two consecutive applications of Group 5 insecticides, rotate to another class of effective insecticides for at least one application. Do not make more than three applications of Group 5 insecticides for thrips in a season. Consult your Dow AgroSciences representative, extension specialist, certified crop advisor, or state agricultural experiment station for information on alternative effective products to use in your area.

Restrictions:

- **Preharvest Interval:** Do not apply within 1 day of harvest.
- Do not apply more than a total of 39 fl oz of Radiant SC (0.305 lb ai spinetoram) per acre per year.
- **Maximum Number of Applications:** Do not make more than five applications per year. See Resistance Management regarding number of applications for specific pests.
- **Minimum Treatment Interval:** Do not make applications less than 4 days apart.

**Leafy Vegetables (Except Brassica) (Crop Group 4)¹,
Leaves of Root and Tuber Vegetables (Crop Group 2)²
and Leaves of Legume Vegetables (Crop Group 7A)³,
Turnip Greens, and Watercress**

¹Leafy vegetables (except Brassica) (crop group 4) amaranth, arugula, cardoon, celery, celtuce, chervil, Chinese celery, Chinese spinach, corn salad, dandelion, dock, edible-leaved chrysanthemum, endive (escarole), Florence fennel, garden cress, garden purslane, garland chrysanthemum, head lettuce, leaf lettuce, leafy amaranth, New Zealand spinach, orach, parsley, radicchio (red chicory), rhubarb, spinach, Swiss chard, tampala, upland cress, vine spinach, winter cress, winter purslane, yellow rocket

²Leaves of root and tuber vegetables (crop group 2) bitter cassava, black salsify, carrot, celeriac (celery root), chicory, dasheen (taro), edible burdock, garden beet, oriental radish (daikon), parsnip, radish, rutabaga, sugar beet, sweet cassava, sweet potato, tanier, true yam, turnip, turnip-rooted chervil

³Leaves of legume vegetables (crop group 7A) any cultivar of bean and field pea (except soybean)

Pests and Application Rates:

Pests	Radiant SC (fl oz/acre)
armyworms ¹ cabbage looper corn earworm, <i>Helicoverpa zea</i> diamondback moth imported cabbageworm light brown apple moth	5 – 10
dipterous leafminers, <i>Liriomyza</i> spp ² thrips ²	6 – 10

¹With the exception of yellowstriped armyworm and western yellowstriped armyworm.

²Control of leafminers and thrips may be improved with the addition of an adjuvant to the spray mixture. See Use of Adjuvants section under Mixing Directions.

Application Timing: Scout at least weekly and consider the impact of both pests and beneficials. Treat when economic thresholds are exceeded, targeting eggs at hatch or small larvae. Heavy infestations may require repeat applications, but follow resistance management guidelines. Consult your Dow AgroSciences representative, extension service specialist, certified crop advisor or your state agricultural experiment station for any additional local use recommendations for your area.

Application Rate: Apply Radiant SC as a foliar spray at the rate specified to control target pests. Use a higher rate in the rate range for heavy infestations or advanced growth stages of target pests.

Resistance Management: Do not make more than two consecutive applications of Group 5 insecticides (spinetoram and spinosad). If additional treatments are required after two consecutive applications of Group 5 insecticides, rotate to another class of effective insecticides for at least one application. Do not make more than three applications of Group 5 insecticides for thrips in a season. Consult your Dow AgroSciences representative, extension specialist, certified crop advisor, or state agricultural experiment station for information on alternative effective products to use in your area.

Restrictions:

- **Preharvest Interval:**
Leafy vegetables (including watercress): Do not apply within 1 day of harvest.

- **Leaves of root, tuber and legume vegetables:** Do not apply within 3 days of harvest. **Note:** Root, tuber and legume vegetables treated as described may only be harvested for the foliage, not for the root, tuber, bean or pea.

- Do not apply more than a total of 34 fl oz of Radiant SC (0.266 lb ai spinetoram) per acre per year.

- **Maximum Number of Applications:** Do not make more than six applications per year. See Resistance Management regarding number of applications for specific pests.

- **Minimum Treatment Interval:**
Leafy vegetables (including watercress): Do not make applications less than 4 days apart.

- **Leaves of root, tuber and legume vegetables:** Do not make applications less than 7 days apart.

- Do not apply to seedling leafy crops grown for transplant within a greenhouse, shade house, or outdoor transplant bed.

Legume Vegetables (Succulent and Dried Beans and Peas) (Crop Group 6)¹

¹Legume vegetables (succulent and dried beans and peas) (crop group 6) adzuki bean, blackeyed pea, chickpea, cowpea, crowder pea, edible-pod pea, English pea, fava bean, field bean, field pea, garbanzo bean, garden

pea, green pea, kidney bean, lentil, lima bean, lupins, mungbean, navy bean, pigeon pea, pinto bean, runner bean, snap bean, snow pea, sugar snap pea, tepary bean, wax bean, yardlong bean

Pests and Application Rates:

Pests	Radiant SC (fl oz/acre)
European corn borer (eggs & larvae)	3 – 8
armyworms ¹ corn earworm, <i>Helicoverpa zea</i> light brown apple moth loopers	4 – 8
dipterous leafminers, <i>Liriomyza</i> spp ² thrips ²	5 – 8

¹With the exception of yellowstriped armyworm and western yellowstriped armyworm.

²Control of leafminers and thrips may be improved with the addition of an adjuvant to the spray mixture. See Use of Adjuvants section under Mixing Directions.

Application Timing: For determining when to treat, scout with enough regularity to monitor the population size of each of the labeled pests. Heavy infestations may require repeat applications, but follow resistance management guidelines. Treat when pests appear, targeting eggs at hatch or small larvae. For **European corn borer**, treat when moth flights first appear and use the lower end of the rate range to control eggs and larvae every three days before they enter the plant. Consult your Dow AgroSciences representative, extension service specialist, certified crop advisor or your state agricultural experiment station for any additional recommendations for your area.

Application Rate: Apply Radiant SC as a foliar spray at the rate specified to control target pests. Use a higher rate in the rate range for heavy infestations or advanced growth stages of target pests.

Resistance Management: Do not make more than two consecutive applications of Group 5 insecticides (spinetoram and spinosad). If additional treatments are required after two consecutive applications of Group 5 insecticides, rotate to another class of effective insecticides for at least one application. Do not make more than three applications of Group 5 insecticides for thrips in a season. Consult your Dow AgroSciences representative, extension specialist, certified crop advisor, or state agricultural experiment station for information on alternative effective products to use in your area.

Restrictions:

- **Maximum Number of Applications:** Do not make more than six applications per year. See Resistance Management regarding number of applications for specific pests.

- **Minimum Treatment Interval:** For European corn borer, do not make applications less than 3 days apart. For all other pests, do not make applications less than 4 days apart.

Succulent Beans and Peas:

- **Preharvest Interval:** Do not apply within 3 days of harvest.
- Do not apply more than a total of 28 fl oz of Radiant SC (0.219 lb ai spinetoram) per acre per year.

Dried Beans and Peas:

- **Preharvest Interval:** Do not apply within 28 days of harvest.
- Do not apply more than a total of 12 fl oz of Radiant SC (0.094 lb ai spinetoram) per acre per year.

Peanut

Pests and Application Rates:

Pests	Radiant SC (fl oz/acre)
armyworms ¹ cabbage looper corn earworm European corn borer green cloverleaf worm red-necked peanut worm saltmarsh caterpillar soybean looper velvetbean caterpillar	3 – 8

¹With the exception of yellowstriped armyworm and western yellowstriped armyworm.

Application Timing: Regularly monitor the population size of each of the labeled pests. Treat when pests appear, targeting eggs at hatch or small larvae. Consult your Dow AgroSciences representative, extension specialist, certified crop advisor or your state agricultural experiment station for any additional local use recommendations for your area.

Application Rate: Use a higher rate of Radiant SC in the rate range for larger larvae or moderate to severe infestations and/or larger plant volume.

Resistance Management: Do not make more than two consecutive applications of Group 5 insecticides (spinetoram and spinosad). If additional treatments are required after two consecutive applications of Group 5 insecticides, rotate to another class of effective insecticides for at least one application. Consult your Dow AgroSciences representative, extension specialist, certified crop advisor, or state agricultural experiment station for information on alternative effective products to use in your area.

Restrictions:

- **Preharvest Interval:** Do not apply within 3 days of nut, forage or hay harvest.
- Do not apply more than a total of 24 fl oz of Radiant SC (0.188 lb ai spinetoram) per acre per year.
- **Maximum Number of Applications:** Do not make more than three applications per calendar year.
- **Minimum Treatment Interval:** Do not make applications less than 7 days apart.
- **Grazing Restriction:** Do not allow grazing of peanut hay

Peppermint and Spearmint

Pests and Application Rates:

Pests	Radiant SC (fl oz/acre)
armyworms cutworms dipterous leafminers ¹ light brown apple moth loopers thrips (suppression) ¹	4 – 12

¹Control of leafminers and suppression of thrips may be improved with the addition of an adjuvant to the spray mixture. See Use of Adjuvants section under Mixing Directions. If thorough coverage is desired, then high pressure (>70 psi) directed sprays with dual directed nozzles can assist leaf penetration.

Application Timing: For determining when to treat, scout with enough regularity to monitor the population size of each of the labeled pests. Treat when pests appear, targeting eggs at hatch or small larvae. Consult your Dow AgroSciences representative, extension specialist, certified crop advisor or your state agricultural experiment station for any additional local use recommendations for your area.

Application Rate: Apply Radiant SC as a foliar spray at the rate specified to control target pests. Heavy infestations may require repeat applications, but follow resistance management guidelines. Use a higher rate in the rate range for larger larvae or heavier infestations.

Resistance Management: Do not make more than two consecutive applications of Group 5 insecticides (spinetoram and spinosad). If additional treatments are required after two consecutive applications of Group 5 insecticides, rotate to another class of effective insecticides for at least one application. Do not make more than three applications of Group 5 insecticides for thrips in a season. Consult your Dow AgroSciences representative, extension specialist, certified crop advisor, or state agricultural experiment station for information on alternative effective products to use in your area.

Restrictions:

- **Preharvest Interval:** Do not apply within 7 days of harvest.
- Do not apply more than a total of 39 fl oz of Radiant SC (0.305 lb ai spinetoram) per acre per year.
- **Maximum Number of Applications:** Do not make more than four applications per year. See Resistance Management regarding number of applications for specific pests.
- **Minimum Treatment Interval:** Do not make applications less than 4 days apart.

**Pineapple
(For Use in Hawaii Only)**

Pests and Application Rates:

Pests	Radiant SC (fl oz/acre)
lepidopterous larvae (suppression) such as: armyworms banana moth fruit borer caterpillar, <i>Thecia basilides</i> gummosos, <i>Batrachedra commosae</i> pineapple caterpillar pink cornworm sugarcane bud moth	4 - 8

Application Timing: For determining when to treat, scout with enough regularity to monitor the population size of each of the labeled pests. Treat when pests appear, targeting eggs at hatch or small larvae. Consult your Dow AgroSciences representative, extension specialist, certified crop advisor or your state agricultural experiment station for any additional local use recommendations for your area.

Application Rate: Apply as a foliar spray at the rate specified to control target pests. Heavy infestations may require repeat applications, but follow resistance management guidelines.

Resistance Management: Do not make more than two consecutive applications of Group 5 insecticides (spinetoram and spinosad). If additional treatments are required after two consecutive applications of Group 5 insecticides, rotate to another class of effective insecticides for at least one application. Consult your Dow AgroSciences representative, extension specialist, certified crop advisor, or state agricultural experiment station for information on alternative effective products to use in your area.

Restrictions:

- **Preharvest Interval:** Do not apply within 7 days of harvest.
- Do not apply more than a total of 39 fl oz of Radiant SC (0.305 lb ai spinetoram) per acre per year
- **Maximum Number of Applications:** Do not make more than six applications per calendar year.
- **Minimum Treatment Interval:** Do not make applications less than 7 days apart.

Quinoa

Pests and Application Rates:

Insect Suppression Only

Pests	Radiant SC (fl oz/acre)
armyworms ¹ loopers leafminers ²	3 - 6
thrips ² cutworms	6

¹With the exception of yellowstriped armyworm and western yellowstriped armyworm.

²Control of leafminers and thrips may be improved with the addition of an adjuvant to the spray mixture. See Use of Adjuvants under Mixing Directions.

Application Timing: Scout weekly throughout the season to monitor and track populations of **leafminers** and **thrips** to determine when economic thresholds are exceeded. Scout weekly throughout the season to monitor and track pest and beneficial populations. For tracking **lepidopterous larvae**, scout with enough regularity to monitor the population size of each of the labeled pests. Treat when economic thresholds are exceeded, targeting eggs at hatch or small larvae. Heavy infestations may require repeat applications, but follow resistance management guidelines. Consult your Dow AgroSciences representative, extension service specialist, certified crop advisor or your state agricultural experiment station for any additional local use recommendations for your area.

Application Rate: Apply Radiant SC as a foliar spray at the rate specified to control target pest. Use a higher rate in the rate range for heavy infestations or advanced growth stages of target pests.

Resistance Management: Do not make more than two consecutive applications of Group 5 insecticides (spinetoram and spinosad). If additional treatments are required after two consecutive applications of Group 5 insecticides, rotate to another class of effective insecticides for at least one application. For thrips, if additional treatments are required after two consecutive applications of Group 5 insecticides, rotate to another class of effective insecticides for at least two applications. Do not make more than three applications of Group 5 insecticides for thrips in a season. Consult your Dow AgroSciences representative, extension specialist, certified crop advisor, or state agricultural experiment station for information on alternative effective products to use in your area. Make treatment decisions for the entire farm and consider area wide programs if other growers are in close proximity.

Restrictions:

- **Preharvest Interval:** Do not apply within 21 days of harvest.
- Do not apply more than a total of 18 fl oz of Radiant SC (0.141 lb ai spinetoram) per acre per year.
- **Maximum Number of Applications:** Do not make more than three applications per calendar year. See Resistance Management regarding number of applications for specific pests.
- **Minimum Treatment Interval:** Do not make applications less than 4 days apart.

Root and Tuber Vegetables (Crop Group 1)¹ and Globe Artichoke

¹Root and tuber vegetables (crop group 1) arracacha, arrowroot, bitter cassava, black salsify, carrot, celeriac, chayote root, chicory, Chinese artichoke, chufa, dasheen, edible burdock, edible canna, garden beet, ginger, ginseng, horseradish, Jerusalem artichoke, leren, oriental radish, parsnip, potato, radish, rutabaga, salsify, skirret, Spanish salsify, sugar beet, sweet cassava, sweet potato, tanager, true yam, turmeric, turnip, turnip-rooted chervil, turnip-rooted parsley, yam bean

Pests and Application Rates:

Pests	Radiant SC (fl oz/acre)
Colorado potato beetle	4.5 – 8
armyworms ¹ artichoke plume moth dipterous leafminers, <i>Liriomyza</i> spp ² European corn borer flea beetles (suppression) light brown apple moth loopers potato psyllid (suppression) ² thrips ²	6 – 8

¹With the exception of yellowstriped armyworm and western yellowstriped armyworm.

²Control of leafminers, psyllids, and thrips may be improved with the addition of an adjuvant to the spray mixture. See Use of Adjuvants section under Mixing Directions.

Application Timing: For determining when to treat, scout with enough regularity to monitor the population size of each of the labeled pests. Treat when pests appear, targeting eggs at hatch or small larvae. Consult your Dow AgroSciences representative, extension service specialist, certified crop advisor or your state agricultural experiment station for any additional local use recommendations for your area.

Application Rate: Apply Radiant SC as a foliar spray at the rate specified to control target pests. Use a higher rate in the rate range for heavy infestations or advanced growth stages of target pests. Heavy infestations may require repeat applications, but follow resistance management guidelines.

Chemigation: Radiant SC may be applied to potatoes by chemigation at labeled rates. Refer to the Chemigation Application section.

Resistance Management: Do not make more than two consecutive applications of Group 5 insecticides (spinetoram and spinosad). If additional treatments are required after two consecutive applications of Group 5 insecticides, rotate to another class of effective insecticides for at least one application. Do not apply Group 5 insecticides to consecutive generations of Colorado potato beetle and do not make more than two applications of Group 5 insecticides per single generation of Colorado potato beetle. Do not make more than three applications of Group 5 insecticides for thrips in a season. Consult your Dow AgroSciences representative, extension specialist, certified crop advisor, or state agricultural experiment station for information on alternative effective products to use in your area.

Restrictions:

Garden beet and sugar beet:

- **Preharvest Interval:** Do not apply within 7 days of harvest.
- Do not apply more than a total of 32 fl oz of Radiant SC (0.250 lb ai spinetoram) per acre per year.
- **Maximum Number of Applications:** Do not make more than four applications per calendar year. See Resistance Management regarding number of applications for specific pests.
- **Minimum Treatment Interval:** Do not make applications less than 7 days apart.

Black salsify, carrot, chicory, ginseng, horseradish, parsnip, salsify, skirret, Spanish salsify, turnip-rooted chervil, turnip-rooted parsley:

- **Preharvest Interval:** Do not apply within 3 days of harvest.
- Do not apply more than a total of 28 fl oz of Radiant SC (0.219 lb ai spinetoram) per acre per year.
- **Maximum Number of Applications:** Do not make more than four applications per calendar year. See Resistance Management regarding number of applications for specific pests.
- **Minimum Treatment Interval:** Do not make applications less than 4 days apart.

Arracacha, arrowroot, bitter cassava, chayote root, Chinese artichoke, chufa, dasheen, edible canna, ginger, Jerusalem artichoke, leren, potato, sweet cassava, sweet potato, tanager, true yam, turmeric, yam bean:

- **Preharvest Interval:** Do not apply within 7 days of harvest.
- Do not apply more than a total of 32 fl oz of Radiant SC (0.250 lb spinetoram) per acre per year.

- **Maximum Number of Applications:** Do not make more than four applications per calendar year. See Resistance Management regarding number of applications for specific pests.
- **Minimum Treatment Interval:** Do not make applications less than 7 days apart.

Globe Artichoke:

- **Preharvest Interval:** Do not apply within 2 days of harvest.
- Do not apply more than a total of 32 fl oz of Radiant SC (0.250 lb ai spinetoram) per acre per year.
- **Maximum Number of Applications:** Do not make more than four applications per calendar year. See Resistance Management regarding number of applications for specific pests.
- **Minimum Treatment Interval:** Do not make applications less than 7 days apart.

Celeriac, edible burdock, oriental radish, radish, rutabaga, turnip and other root vegetables not specifically listed:

- **Preharvest Interval:** Do not apply within 3 days of harvest.
- Do not apply more than a total of 24 fl oz of Radiant SC (0.188 lb ai spinetoram) per acre per year.
- **Maximum Number of Applications:** Do not make more than three applications per calendar year.
- **Minimum Treatment Interval:** Do not make applications less than 4 days apart.

Soybean

Pests and Application Rates:

Pests	Radiant SC (fl oz/acre)
armyworms ¹ cabbage looper corn earworm (podworm) green cloverworm saltmarsh caterpillar soybean looper true armyworm velvetbean caterpillar	2 – 4

¹With the exception of yellowstriped armyworm and western yellowstriped armyworm.

Application Timing: Treat when field counts or crop injury indicates damaging pest populations are present or developing. Time applications to treat small larvae and use sufficient spray volume to ensure good coverage.

Application Rate: Use a higher rate in the rate range for heavy infestations and/or difficult spray coverage situations.

Resistance Management: Do not make more than two consecutive applications of Group 5 insecticides (spinetoram and spinosad). If additional treatments are required after two consecutive applications of Group 5 insecticides, rotate to another class of effective insecticides for at least one application. Consult your Dow AgroSciences representative, extension specialist, certified crop advisor, or state agricultural experiment station for information on alternative effective products to use in your area.

Restrictions:

- **Preharvest Interval:** Do not apply within 28 days of harvest.
- Do not apply more than a total of 14 fl oz of Radiant SC (0.109 lb ai spinetoram) per acre per year.
- **Maximum Number of Applications:** Do not make more than four applications per calendar year.
- **Minimum Treatment Interval:** Do not make applications less than 4 days apart.

Spices (Except Black Pepper) (Subgroup 19B)¹

¹Spices (except black pepper) (subgroup 19B) allspice, anise (seed), annatto (seed), black caraway, caper (buds), caraway, cardamom, cassia (buds), celery (seed), cinnamon, clove (buds), common fennel, coriander (seed), culantro (seed), cumin, dill (seed), Florence fennel (seed), fenugreek, grains of paradise, juniper (berry), lovage (seed), mace, mustard (seed), nutmeg, poppy (seed), saffron, star anise, vanilla, white pepper

Pests and Application Rates:

Pests	Radiant SC (fl oz/acre)
dipterous leafminers ¹ (suppression) lepidopterous larvae thrips (suppression) ¹	5 - 8

¹Suppression of leafminers and thrips may be improved with the addition of an adjuvant to the spray mixture. See Use of Adjuvants under Mixing Directions.

Application Timing: For determining when to treat, scout with enough regularity to monitor the population size of each of the labeled pests. Treat when pests appear, targeting eggs at hatch or small larvae. Consult your Dow AgroSciences representative, extension specialist, certified crop advisor or your state agricultural experiment station for any additional local use recommendations for your area.

Application Rate: Apply as a foliar spray at the rate specified to control target pests. Use a higher rate in the rate range for heavy infestations or advanced growth stages of target pests. Heavy infestations may require repeat applications, but follow resistance management guidelines.

Resistance Management: Do not make more than two consecutive applications of Group 5 insecticides (spinetoram and spinosad). If additional treatments are required after two consecutive applications of Group 5 insecticides, rotate to another class of effective insecticides for at least one application. Do not make more than three applications of Group 5 insecticides for thrips in a season. Consult your Dow AgroSciences representative, extension specialist, certified crop advisor, or state agricultural experiment station for information on alternative effective products to use in your area.

Restrictions:

- **Preharvest Interval:** Do not apply within 14 days of harvest.
- Do not apply more than a total of 39 fl oz of Radiant SC (0.305 lb ai spinetoram) per acre per year.
- **Maximum Number of Applications:** Do not make more than five applications per calendar year. See Resistance Management regarding number of applications for specific pests.
- **Minimum Treatment Interval:** Do not make applications less than 10 days apart.

Vegetable, Fruiting (Crop Group 8-10))¹ and Okra

¹African eggplant; Bush tomato; Cocona; Currant tomato; Eggplant; Garden huckleberry; Goji berry; Groundcherry; Martynia; Naranjilla; Okra; Pea eggplant; Pepino Pepper, bell; Pepper, nonbell; Roselle; Scarlet eggplant; Sunberry; Tomatillo; Tomato; Tree tomato; Cultivars, varieties and/or hybrids of these

Pests and Application Rates:

Pests	Radiant SC (fl oz/acre)
armyworms ¹ Colorado potato beetle European corn borer hornworms light brown apple moth loopers tomato fruitworm, <i>Helicoverpa zea</i> tomato pinworm	5 – 10
dipterous leafminers, <i>Liriomyza</i> spp ² flower thrips ² pepper weevil (suppression) <i>Thrips palmi</i> ²	6 – 10

¹With the exception of yellowstriped armyworm and western yellowstriped armyworm.

²Control of leafminers and thrips may be improved with the addition of an adjuvant to the spray mixture. See Use of Adjuvants section under Mixing Directions.

Application Timing: Scout weekly throughout the season to monitor populations of leafminers and thrips to determine when economic thresholds are exceeded. Scout weekly throughout the season to monitor beneficial populations. For lepidopterous larvae, scout with enough regularity to monitor the population size of each of the labeled pests. Time applications of Radiant SC to coincide with peak egg hatch in species without overlapping generations.

Application Rate: Apply Radiant SC as a foliar spray at the rate specified to control target pests. Use a higher rate in the rate range for heavy infestations or advanced growth stages of target pests.

Resistance Management: Do not make more than two consecutive applications of Group 5 insecticides (spinetoram and spinosad). If additional treatments are required after two consecutive applications of Group 5 insecticides, rotate to another class of effective insecticides for at least one application. For thrips, if additional treatments are required after two consecutive applications of Group 5 insecticides, rotate to another class of effective insecticides for at least two applications. Do not make more than three applications of Group 5 insecticides for thrips in a season. Consult your Dow AgroSciences representative, extension specialist, certified crop advisor, or state agricultural experiment station for information on alternative effective products to use in your area. Do

not apply Group 5 insecticides to consecutive generations of Colorado potato beetle and do not make more than two applications per single generation of Colorado potato beetle.

Restrictions:

- **Preharvest Interval:** Do not apply within 1 day of harvest.
- Do not apply more than a total of 34 fl oz of Radiant SC (0.266 lb ai spinetoram) per acre per calendar year.
- **Maximum Number of Applications:** Do not make more than six applications per calendar year. See Resistance Management regarding number of applications for specific pests.
- **Minimum Re-Treatment Interval:** Do not make applications less than 4 days apart.
- Do not apply to seedling fruiting vegetables and okra grown for transplant within a greenhouse, shade house, or outdoor transplant bed.

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Revisions:

1. Updated crop groupings throughout
2. Quinoa: Added section
3. Brassica (Cole) Leafy Vegetables: Updated use directions for cabbage root maggot suppression.