



**UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
WASHINGTON, DC 20460**

**OFFICE OF CHEMICAL SAFETY  
AND POLLUTION PREVENTION**

April 16, 2015

Jennifer Hughes  
Dow Agro Sciences LLC  
9330 Zionsville Road  
Indianapolis, IN 46268

Subject: Label Amendment – Adding Use Restrictions on Bushberry in California to Address  
Resistance Management Concerns  
Product Name: Radiant SC  
EPA Registration Number: 62719-545  
Application Date: March 31, 2015  
Decision Number: 503153

Dear Ms. Hughes:

The amended label referred to above, submitted in connection with registration under the Federal Insecticide, Fungicide and Rodenticide Act, as amended, is acceptable. This approval does not affect any conditions that were previously imposed on this registration. You continue to be subject to existing conditions on your registration and any deadlines connected with them.

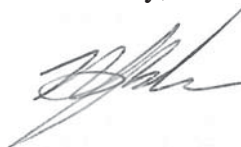
A stamped copy of your labeling is enclosed for your records. This labeling supersedes all previously accepted labeling. You must submit one copy of the final printed labeling before you release the product for shipment with the new labeling. In accordance with 40 CFR 152.130(c), you may distribute or sell this product under the previously approved labeling for 18 months from the date of this letter. After 18 months, you may only distribute or sell this product if it bears this new revised labeling or subsequently approved labeling. "To distribute or sell" is defined under FIFRA section 2(gg) and its implementing regulation at 40 CFR 152.3.

Should you wish to add/retain a reference to the company's website on your label, then please be aware that the website becomes labeling under the Federal Insecticide Fungicide and Rodenticide Act and is subject to review by the Agency. If the website is false or misleading, the product would be misbranded and unlawful to sell or distribute under FIFRA section 12(a)(1)(E). 40 CFR 156.10(a)(5) list examples of statements EPA may consider false or misleading. In addition, regardless of whether a website is referenced on your product's label, claims made on the website may not substantially differ from those claims approved through the registration process. Therefore, should the Agency find or if it is brought to our attention that a website contains false or misleading statements or claims substantially differing from the EPA approved registration, the website will be referred to the EPA's Office of Enforcement and Compliance.

Your release for shipment of the product constitutes acceptance of these conditions. If these conditions are not complied with, the registration will be subject to cancellation in accordance

with FIFRA section 6. If you have any questions, please contact Carlyn Petrella by phone at 703-347-0439 or via email at [petrella.carlyn@epa.gov](mailto:petrella.carlyn@epa.gov).

Sincerely,

A handwritten signature in black ink, appearing to read 'Michael Walsh', with a stylized flourish at the end.

Michael Walsh, Product Manager 11  
Invertebrate & Vertebrate Branch 2  
Office of Pesticide Programs

Enclosure

# Radiant<sup>®</sup> SC

EPA Reg. No. 62719-545

## Registration Notes:

**Source label text** based on EPA accepted text dated November 28, 2014.

1. Bushberries: Added footnote to thrips suppression for geographic restrictions for Fresno, Kern, and Tulare counties in California.
2. Bushberries: Updated Resistance Management paragraph to include the following statement:  
“Only two applications are allowed per acre per year in Fresno, Kern, and Tulare counties in the state of California (See special crop restrictions).”
3. Bushberries: Updated Maximum Number of Applications statement under restrictions.
4. Bushberries: Added Special Use Restrictions for Fresno, Kern, and Tulare Counties in California
  - Thrips (suppression) rate: The Radiant SC use rate is 10 – 12 fl oz/acre. Do not apply less than 10 fl oz. acre.
  - Preharvest Interval: Do not apply within three 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 two applications per calendar year. See Resistance Managements regarding number of applications for specific pests.
  - Minimum Treatment Interval: Do not make applications less than six days apart.

<sup>®</sup>Trademark of The Dow Chemical Company (“Dow”) or an affiliated company of Dow

(Base label):

**Radiant<sup>®</sup> SC****Insecticide**

For control or suppression of lepidopterous larvae (worms, caterpillars), dipterous leafminers, thrips, and certain psyllids in asparagus, banana and plantain, *Brassica* (cole) crops, bulb vegetables, bushberries, caneberries, cereal grains (except rice, millet and sorghum), citrus, corn (field, sweet, popcorn, and seed corn), cotton, cranberry, cucurbits, dates, fig, fruiting vegetables (tomato, peppers, and eggplant), globe artichoke, grain amaranth, grape, herbs, hops, leafy vegetables, leaves of legume vegetables, leaves of root and tuber vegetables, legume vegetables (succulent and dried beans and peas), okra, peanut, peppermint, pineapple, pistachios, pome fruits, pomegranate, root and tuber vegetables, soybean, spearmint, spices (except black pepper), stone fruits, strawberry, teosinte, tree nuts, tropical tree fruits, turnip greens, and watercress.

<b>Group</b>	<b>5</b>	<b>INSECTICIDE</b>
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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)

**ACCEPTED****04/16/2015**

Under the Federal Insecticide, Fungicide  
and Rodenticide Act as amended, for the  
pesticide registered under  
EPA Reg. No. 62719-545

**Keep Out of Reach of Children****CAUTION****Precautionary Statements****Hazards to Humans and Domestic Animals****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.

**Agricultural Use Requirements**

Use this product only in accordance with its labeling and with the Worker Protection Standard, 40 CFR Part 170. Refer to label booklet under "Agricultural Use Requirements" in the Directions for Use section for information about this standard.

**Nonrefillable rigid containers 5 gallons or less:****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.

**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:****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.

**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. 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.

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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.

**Refer to label booklet for Directions for Use.**

**Notice:** Read the entire label. Use only according to label directions. **Before using this product, read Warranty Disclaimer, Inherent Risks of Use, and Limitation of Remedies at end of label booklet. If terms are unacceptable, return at once unopened.**

In case of emergency endangering health or the environment involving this product, call 1-800-992-5994.

**Shake Well Before Use -- Avoid Freezing**

EPA Reg. No. 62719-545

EPA Est. \_\_\_\_\_

®Trademark of The Dow Chemical Company ("Dow") or an affiliated company of Dow

**Produced for**

**Dow AgroSciences LLC**

**9330 Zionsville Road**

**Indianapolis, IN 46268**

**Net Contents** \_\_\_\_

(cover, shipping container):

# Radiant<sup>®</sup> SC

## Insecticide

**For control or suppression of lepidopterous larvae (worms, caterpillars), dipterous leafminers, thrips, and certain psyllids in asparagus, banana and plantain, *Brassica* (cole) crops, bulb vegetables, bushberries, caneberries, cereal grains (except rice, millet and sorghum), citrus, corn (field, sweet, popcorn, and seed corn), cotton, cranberry, cucurbits, dates, fig, fruiting vegetables (tomato, peppers, and eggplant), globe artichoke, grain amaranth, grape, herbs, hops, leafy vegetables, leaves of legume vegetables, leaves of root and tuber vegetables, legume vegetables (succulent and dried beans and peas), okra, peanut, peppermint, pineapple, pistachios, pome fruits, pomegranate, root and tuber vegetables, soybean, spearmint, spices (except black pepper), stone fruits, strawberry, teosinte, tree nuts, tropical tree fruits, 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)

**Keep Out of Reach of Children**

## CAUTION

### Agricultural Use Requirements

Use this product only in accordance with its labeling and with the Worker Protection Standard, 40 CFR Part 170. Refer to label booklet under "Agricultural Use Requirements" in the Directions for Use section for information about this standard.

**Refer to inside of label booklet for Directions for Use.**

**Notice:** Read the entire label. Use only according to label directions. **Before using this product, read Warranty Disclaimer, Inherent Risks of Use, and Limitation of Remedies at end of label booklet. If terms are unacceptable, return at once unopened.**

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## Precautionary Statements

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### Hazards to Humans and Domestic Animals

## 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.

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#### Directions for Use

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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. 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.

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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.

## General 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 ferment 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.

## General 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, predatory mites 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)
14	0.1094
13	0.1016
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.

### **Tree and Vine Crop Application**

**Dilute Spray Application:** This application method is based upon the premise that all plant parts are thoroughly wetted, to the point of runoff, with spray solution. To determine the number of gallons of dilute spray required per acre, contact your state agricultural experiment station, certified pest control advisor, or extension specialist for assistance. Use of tree row volume is appropriate.

Apply Radiant SC in a manner that achieves uniform coverage of the entire crop canopy but not past the point of runoff. For optimum control of target pests, complete and uniform spray coverage is essential. The spray volume required to achieve complete and uniform coverage will depend upon tree size and shape, leaf size, and density, and the application equipment used. To determine the required spray volume per acre, contact your state agricultural experiment station, certified pest control advisor, or extension specialist for assistance. Use of tree row volume is appropriate.

### **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 (10 gallons or more per acre for trees, vines, grove, or orchard crops). 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. In tree crops, insect control by aerial application may be less than control by ground application because of the reduced coverage.



**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 downwind. 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, cranberry 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.

## Banana and Plantain

#### Pests and Application Rates:

Pests	Radiant SC	
	(fl oz/acre)	(fl oz/100 gal)
banana rust thrips <sup>1</sup>	8 – 11	2.67 – 3.67
Hawaiian flower thrips <sup>1</sup>		

lepidopterous larvae, including banana moth		
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<sup>1</sup>Control 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:** Apply no later than two weeks after bunch emergence and before flower petals senesce and again one to two days before bunch cover.

**Application Rate:** Apply Radiant SC as a directed fine spray toward bunches and spray to runoff.

**Spray Volume:** Dilute sprays are sprayed to the point of runoff. The application rate range for dilute sprays in the table is based upon a spray volume of 300 gallons per acre. Gallonage of dilute sprays will vary depending upon tree size, density of canopy, stage of seasonal growth, and spacing in the orchard.

**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. Do not make more than three applications of Group 5 insecticides for thrips in a season.

**Restrictions:**

- **Preharvest Interval:** Do not apply within 56 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 crop or apply more than six applications times 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.

**Brassica (Cole) Leafy Vegetables (Crop Group 5)<sup>1</sup>**

<sup>1</sup>Brassica (cole) leafy vegetables (crop group 5) 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 <sup>1</sup> cabbage looper <sup>2</sup> diamondback moth <sup>2</sup> imported cabbageworm <sup>2</sup> light brown apple moth	5 – 10
dipterous leafminers, <i>Liriomyza</i> spp <sup>2</sup> thrips <sup>2</sup>	6 – 10
Hawaiian beet webworm	7 - 10

<sup>1</sup>With the exception of yellowstriped armyworm and western yellowstriped armyworm.

<sup>2</sup>Control 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 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 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).

**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 (Crop Group 3)<sup>1</sup>**

<sup>1</sup>Bulb vegetables (crop group 3) dry bulb onion, garlic, great-headed (elephant) garlic, green onion, leek, shallot, Welsh onion

**Pests and Application Rates:**

Pests	Radiant SC (fl oz/acre)
armyworms <sup>1,2</sup> European corn borer <sup>2</sup> loopers <sup>2</sup>	5 – 10
dipterous leafminers <sup>2</sup> flea beetles (suppression) thrips <sup>2</sup>	6 – 10

<sup>1</sup>With the exception of yellowstriped armyworm and western yellowstriped armyworm.

<sup>2</sup>Control 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.

**Bushberries (Subgroup 13B)<sup>1</sup>**

<sup>1</sup>Bushberries (subgroup 13B) blueberry, currant, elderberry, gooseberry, huckleberry, juneberry, lingonberry, salal

**Pests and Application Rates:**

Pests	Radiant SC (fl oz/acre)
armyworms blueberry gall midge (suppression) blueberry maggot (suppression) cherry fruitworm cranberry fruitworm currant fruit fly (suppression) European grapevine moth fireworms gypsy moth leafrollers light brown apple moth loopers thrips (suppression) <sup>1,2</sup>	6 – 12

<sup>1</sup>Suppression of thrips may be improved with the addition of an adjuvant to the spray mixture. See Use of Adjuvants section under Mixing Directions.

<sup>2</sup>See special restrictions below for Fresno, Kern, and Tulare counties in California.

**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:** The amount of Radiant SC applied per acre will depend upon plant size, volume of foliage present and pest pressure. Use a lower rate in the rate range for light infestations and/or small plants and a higher rate in the rate range for heavy infestations and/or larger plants.

**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. Only two applications are allowed per acre per year in Fresno, Kern, and Tulare counties in the state of California (See special crop restrictions). 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.
- 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. See Resistance Management and Special Use Restrictions regarding number of applications for specific pests and locations.
- **Minimum Treatment Interval:** Do not make applications less than 6 days apart.

**Special Use Restrictions for Fresno, Kern, and Tulare Counties in California**

- Thrips (suppression) rate: The Radiant SC use rate is 10 – 12 fl oz/acre. Do not apply less than 10 fl oz/acre.
- **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 two applications per calendar year.
- **Minimum Treatment Interval:** Do not make applications less than 6 days apart.

**Caneberries (Subgroup 13A)<sup>1</sup>**

<sup>1</sup>Caneberries (crop group 13A) blackberry, loganberry, red and black raspberry, and cultivars and/or hybrids of these

**Pests and Application Rates:**

Pests	Radiant SC (fl oz/acre)
armyworms <sup>1</sup> European grapevine moth green fruitworm leafrollers light brown apple moth looper raspberry fruitworm sawfly thrips (suppression) <sup>2</sup> western raspberry fruitworm	6 – 12

<sup>1</sup>With the exception of yellowstriped armyworm and western yellowstriped armyworm.

<sup>2</sup>Suppression 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. 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:** The amount of Radiant SC applied per acre will depend upon plant size, volume of foliage present and pest pressure. Use a higher rate 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. 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 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.

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

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

**Pests and Application Rates:**

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

<sup>1</sup>With 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.

**Citrus (Crop Group 10)<sup>1</sup>**

<sup>1</sup>Citrus (crop group 10) grapefruit, lemons, limes, oranges, tangerines

**Pests and Application Rates:**

<b>Pests</b>	<b>Radiant SC (fl oz/acre)</b>
Asian citrus psyllid <sup>1</sup> citrus leafminer <sup>1</sup> citrus orangedog katydids <sup>2</sup> lepidopterous larvae, including:	6 – 12



avocado leafroller citrus peelminer cutworms fruit tree leafroller light brown apple moth orange tortrix western tussock moth	
citrus thrips, <i>Scirtothrips citri</i> <sup>1</sup>	8 - 12

<sup>1</sup>Control of leafminers, thrips, and psylla may be improved with the addition of an adjuvant to the spray mixture. See Use of Adjuvants section under Mixing Directions.

<sup>2</sup>Katydid: Control of nymphs only; suppression of adults.

**Application Timing:** Treat when pests appear or in accordance with local economic thresholds. 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:** The amount of Radiant SC applied per acre will depend upon tree size and pest pressure. Use a lower rate in the rate range for light infestations and/or smaller trees and a higher rate in the rate range for heavy infestations and/or larger trees.

**Low Volume Application (for Use in Florida Only):** Radiant SC may be applied by ground application in a minimum finished spray carrier volume of 2 gallons per acre. Spray applications must be made with spray nozzles that create a droplet size with a volume median diameter (VMD) of 90 microns or larger. An adjuvant may be used in the spray mixture at the specified rate of the manufacturer. Evaluate the effect of specific adjuvants or tank mix partners on the performance of Radiant SC in low volume applications in a small-scale application before making large-scale applications.

To achieve good control, uniform coverage and proper equipment calibration are required. Apply only with air-assisted equipment. Low volume applications may not provide the same level of efficacy that can be obtained with an airblast sprayer at higher application volumes.

Reduce the potential for drift when making low volume applications. Factors that may impact drift include wind speed and temperature inversion. Only apply this product if the wind direction favors on-target deposition. Do not apply when wind velocity exceeds 15 mph. See the Application Directions section for additional information on reducing spray drift.

**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 citrus thrips, rotate to another class of effective products for the next two applications after using two applications of Radiant SC within 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 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.
- Do not apply to citrus nurseries or citrus in greenhouses.

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

### Pests and Application Rates:

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

<sup>1</sup>With 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.

## Cotton

### Pests and Application Rates:

Pests	Radiant SC (fl oz/acre)
thrips (early season) <sup>2</sup>	1.4 - 8
cotton bollworm (pre-bloom) cotton leafperforator European corn borer tobacco budworm	2.8 – 8
armyworm <sup>1</sup> cotton bollworm (post-bloom) dipterous leafminers <sup>2</sup> loopers saltmarsh caterpillar thrips (mid to late season) <sup>2</sup>	4.25 – 8

<sup>1</sup>With the exception of yellowstriped armyworm and western yellowstriped armyworm.

<sup>2</sup>Control 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.

## Cranberry

**Pests and Application Rates:**

Pests	Radiant SC (fl oz/acre)
armyworms currant fruit fly (suppression) fireworms gypsy moth leafrollers loopers sparganthis fruitworm thrips (suppression) <sup>1</sup>	6 – 12

<sup>1</sup>Suppression 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:** Application rate of Radiant SC within the rate range will depend upon plant size, volume of foliage present, and pest pressure. Use a higher rate in the rate range for larger larvae or moderate to severe infestations and/or larger plant volume.

**Chemigation:** Radiant SC may be applied to cranberry 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 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 21 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. See Resistance Management regarding number of applications for specific pests.
- **Minimum Treatment Interval:** Do not make applications less than 7 days apart.

## Cucurbit Vegetables (Crop Group 9)<sup>1</sup>

<sup>1</sup>Cucurbit 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 <sup>1</sup> cabbage looper melonworm pickleworm rindworms	5 – 10
dipterous leafminers <sup>2</sup> thrips <sup>2</sup>	6 – 10

<sup>1</sup>With the exception of yellowstriped armyworm and western yellowstriped armyworm.

<sup>2</sup>Control 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.

#### Dates

#### Pests and Application Rates:

Pest	Radiant SC (fl oz/acre)
carob moth	14

**Application Timing:** Apply Radiant SC when pests appear or in accordance with local conditions. Applications should closely follow regional spray recommendations. 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.

**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 four applications per acre per calendar year.
- **Minimum Treatment Interval:** Do not make applications less than 7 days apart.

**Fig**

**Pest and Application Rates:**

Pest	Radiant SC (fl oz/acre)
navel orangeworm	12 – 14

**Application Timing:** Apply Radiant SC as a foliar spray when pests appear or in accordance with local conditions. Applications should closely follow regional spray recommendations. 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:** The amount of Radiant SC applied per acre will depend upon tree size, volume of foliage present, and pest pressure. Use a higher rate in the rate range for larger trees or heavy 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. 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. Although navel orangeworm has not had major resistance problems, avoid applying Radiant SC against more than 2 generations per year.

**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 calendar year.
- **Minimum Treatment Interval:** Do not make applications less than 7 days apart.

**Fruiting Vegetables (Crop Group 8)<sup>1</sup> and Okra**

<sup>1</sup>Fruiting vegetables (crop group 8) eggplant, ground cherry, pepino, pepper (except black), tomatillo, tomato

**Pests and Application Rates:**

Pests	Radiant SC (fl oz/acre)
armyworms <sup>1</sup> 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 <sup>2</sup> flower thrips <sup>2</sup> pepper weevil (suppression) <i>Thrips palmi</i> <sup>2</sup>	6 – 10
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<sup>1</sup>With the exception of yellowstriped armyworm and western yellowstriped armyworm.

<sup>2</sup>Control 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.

## Grape

**Pests and Application Rates:**

Pests	Radiant SC (fl oz/acre)
cutworm European grapevine moth grape berry moth grape leafroller light brown apple moth omnivorous leafroller orange tortrix redbanded leafroller thrips <sup>1</sup> western grape leaf skeletonizer	6 – 10

<sup>1</sup>Control 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. 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:** Carefully adjust equipment and spray volume to assure thorough uniform coverage. 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. 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 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.

**Herbs (Subgroup 19A)<sup>1</sup>**

<sup>1</sup>Herbs (subgroup 19A) angelica, balm, basil, borage, burnet, chamomile, catnip, chervil (dried), chive, chive (Chinese), clary, cilantro, cilantro (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 <sup>1</sup> light brown apple moth loopers thrips <sup>2</sup>	5 – 8

<sup>1</sup>With the exception of yellowstriped armyworm and western yellowstriped armyworm.

<sup>2</sup>Control 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.

## Hops, Dried Cones

Pests	Radiant SC (fl oz/acre)
lepidopterous larvae including: armyworms cutworms leafrollers loopers thrips (suppression)	5 – 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 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 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.

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

<sup>1</sup>Leafy 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

<sup>2</sup>Leaves 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  
<sup>3</sup>Leaves 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 <sup>1</sup> cabbage looper corn earworm, <i>Helicoverpa zea</i> diamondback moth imported cabbageworm light brown apple moth	5 – 10
dipterous leafminers, <i>Liriomyza</i> spp <sup>2</sup> thrips <sup>2</sup>	6 – 10

<sup>1</sup>With the exception of yellowstriped armyworm and western yellowstriped armyworm.

<sup>2</sup>Control 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)<sup>1</sup>

<sup>1</sup>Legume 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:**

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

<sup>1</sup>With the exception of yellowstriped armyworm and western yellowstriped armyworm.

<sup>2</sup>Control 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:**

<b>Pests</b>	<b>Radiant SC (fl oz/acre)</b>
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armyworms <sup>1</sup> cabbage looper corn earworm European corn borer green cloverleaf worm red-necked peanut worm saltmarsh caterpillar soybean looper velvetbean caterpillar	3 – 8
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<sup>1</sup>With 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 <sup>1</sup> light brown apple moth loopers thrips (suppression) <sup>1</sup>	4 – 12

<sup>1</sup>Control 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.

## Pome Fruits (Crop Group 11)<sup>1</sup>

<sup>1</sup>Pome fruits (crop group 11) apples, crabapple, mayhaw, pears, quince

**Pests and Application Rates:**

<b>Pests</b>	<b>Radiant SC (fl oz/acre)</b>
<i>East of Rocky Mountains:</i> codling moth oriental fruit moth	9 – 14
<i>West of Rocky Mountains:</i> codling moth oriental fruit moth	12 – 14
European corn borer European grapevine moth gypsy moth laconobia fruitworm leafminers <sup>1</sup> , including: spotted tentiform western tentiform leafrollers, including: oblique-banded pandemis lesser appleworm light brown apple moth thrips <sup>1</sup> tufted apple budmoth	9 – 14
apple maggot (suppression) pear psylla <sup>1</sup> plum curculio (suppression)	12 – 14

<sup>1</sup>Control of thrips, leafminers, and pear psylla may be improved with the addition of an adjuvant to the spray mixture. See Use of Adjuvants section under Mixing Directions.

**Application Timing:** Closely follow regional spray recommendations for codling moth and oriental fruit moth treatments based on biofix dates, egg hatch, and/or pheromone trap catches. Codling moth and oriental fruit moth larvae must be controlled before they penetrate the fruit. Radiant SC is a larvicide; begin applications shortly before egg hatch. For codling moth, egg hatch typically begins at 220 to 250 degree days (base 50°F) after biofix. Pear psylla numbers can increase rapidly; begin applications before damaging numbers are reached. For codling moth, oriental fruit moth, and pear psylla, repeat applications may be needed to maintain control, but follow resistance management guidelines. Consult with your Dow AgroSciences representative, state agricultural experiment station, certified pest control advisor or extension specialist for specific application timings in your area.

**Application Rate:** The amount of Radiant SC applied per acre will depend upon tree size and pest pressure. Use a lower rate in the rate range for light infestations and/or smaller trees and higher rate in the rate range for heavy infestations and/or larger trees.

**Resistance Management:** Do not make more than three consecutive applications of Group 5 insecticides (spinetoram and spinosad) within a crop season. If additional treatments are required after three consecutive applications of Group 5 insecticides, rotate to another class of effective insecticides for at least one application. Pear psylla is known to develop resistance quickly, do not make more than two applications of Group 5 insecticides for pear psylla in a season. 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. Avoid treating consecutive generations of codling moth, oriental fruit moth, leafrollers, and pear psylla with Group 5 insecticides.

**Restrictions:**

- **Preharvest Interval:** Do not apply within 7 days of harvest.
- Do not apply more than a total of 56 fl oz of Radiant SC (0.438 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.

**Pomegranate****Pests and Application Rates:**

<b>Pests</b>	<b>Radiant SC (oz/acre)</b>
European grapevine moth filbertworm leafrollers thrips <sup>1</sup>	8 - 14
navel orangeworm	12 - 14

<sup>1</sup>Control 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, or in accordance with local economic thresholds. 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:** The amount of Radiant SC applied per acre will depend upon tree size and pest pressure. Use a lower rate in the rate range for light infestations and/or small trees and a higher rate in the rate range for heavy infestations and/or large trees.

**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. Do not apply to pomegranate trees grown in greenhouses and nurseries.

**Restrictions:**

- **Preharvest Interval:** Do not apply within 1 day of harvest.
- Do not apply more than a total of 14 oz of Radiant SC (0.219 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 for thrips, nor less than 7 days apart for all other listed pests.

**Root and Tuber Vegetables (Crop Group 1)<sup>1</sup> and Globe Artichoke**

<sup>1</sup>Root 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, tanier, true yam, tumeric, turnip, turnip-rooted chervil, turnip-rooted parsley, yam bean

**Pests and Application Rates:**

<b>Pests</b>	<b>Radiant SC (fl oz/acre)</b>
Colorado potato beetle	4.5 – 8

armyworms <sup>1</sup> artichoke plume moth dipterous leafminers, <i>Liriomyza</i> spp <sup>2</sup> European corn borer flea beetles (suppression) light brown apple moth loopers potato psyllid (suppression) <sup>2</sup> thrips <sup>2</sup>	6 – 8
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<sup>1</sup>With the exception of yellowstriped armyworm and western yellowstriped armyworm.

<sup>2</sup>Control 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, taniel, 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 <sup>1</sup> cabbage looper corn earworm (podworm) green cloverworm saltmarsh caterpillar soybean looper true armyworm velvetbean caterpillar	2 – 4

<sup>1</sup>With 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)<sup>1</sup>

<sup>1</sup>Spices (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 <sup>1</sup> (suppression) lepidopterous larvae thrips (suppression) <sup>1</sup>	5 - 8

<sup>1</sup>Suppression 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.

#### Stone Fruits (Crop Group 12)<sup>1</sup>

<sup>1</sup>Stone fruits (crop group 12) apricots, cherries, nectarines, peaches, plums, plumcots, prunes

#### Pests and Application Rates:

Pests	Radiant SC (fl oz/acre)
peach twig borer (dormant spray)	6 – 14
European grapevine moth green fruitworm leafminers, including: spotted tentiform, western tentiform leafrollers, including: fruit tree oblique-banded pandemis	9 – 14



red-banded variegated light brown apple moth peach twig borer (in-season spray) thrips <sup>1</sup> tufted apple bud moth western cherry fruit fly, <i>Rhagoletis indifferens</i>	
cherry fruit fly, <i>Rhagoletis cingulata</i> (suppression) oriental fruit moth plum curculio (suppression)	12 – 14

<sup>1</sup>Control 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:** Closely follow regional spray recommendations for oriental fruit moth applications based upon biofix dates, egg hatch, and/or pheromone trap catches. Oriental fruit moth larvae must be controlled before they penetrate the fruit. Radiant SC is a larvicide; begin applications shortly before egg hatch. For oriental fruit moth and thrips, repeat applications may be needed to maintain control; but follow resistance management guidelines. Peach twig borer applications can be made as dormant, delayed dormant, or May sprays. For cherry fruit fly and western cherry fruit fly, maintain protective sprays at 7-day intervals while adults are present and fruit is susceptible to attack. For all pests, consult with your Dow AgroSciences representative, state agricultural experiment station, certified pest control advisor or extension specialist for specific application timings in your area.

**Application Rate:** The amount of Radiant SC applied per acre will depend upon tree size and pest pressure. Use a lower rate in the rate range for light infestations or smaller trees and a higher rate in the rate range for heavy infestations or larger trees.

**Resistance Management:** Do not make more than three consecutive applications of Group 5 insecticides (spinetoram and spinosad) within a crop season. If additional treatments are required after three consecutive applications of Group 5 insecticides, rotate to another class of effective insecticides for at least one application. Do not treat consecutive generations of oriental fruit moth and leafrollers with Group 5 insecticides. 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 for apricots, within 7 days of harvest for cherries, plums, prunes and other stone fruit crops, or within 1 day of harvest for peaches and nectarines.
- Do not apply more than a total of 56 fl oz of Radiant SC (0.438 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 3 days apart for thrips, nor less than 7 days apart for all other listed pests.

## Strawberry

#### Pests and Application Rates:

Pests	Radiant SC (fl oz/acre)
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armyworms <sup>1</sup> leafrollers light brown apple moth thrips <sup>2</sup>	6 – 10
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<sup>1</sup>With the exception of yellowstriped armyworm and western yellowstriped armyworm.

<sup>2</sup>Control 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.

**Tree Nuts (Crop Group 14)<sup>1</sup> and Pistachios**

<sup>1</sup>Tree nuts (crop group 14) almonds, cashew, chestnut, filbert (hazelnut), macadamia nut, pecan walnut

**Pests and Application Rates:**

Pests	Radiant SC (fl oz/acre)
peach twig borer (dormant spray)	3 – 14
light brown apple moth oblique-banded leafroller peach twig borer (in-season spray) red-humped caterpillar walnut caterpillar walnut husk fly	6 – 14
codling moth fall webworm filbertworm hickory shuckworm pecan nut casebearer	9 – 14
navel orangeworm	12 – 14

**Application Timing:** Apply Radiant SC as either a dormant or as a foliar spray when pests first appear or in accordance with local conditions. Closely follow regional spray recommendations based upon biofix dates, egg hatch, and/or pheromone trap catches. Lepidopterous larvae must be controlled before they penetrate the nuts or shoots. Radiant SC is a larvicide; begin applications shortly before egg hatch. 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.

**Use of Crop Oils:** Crop oils labeled for agricultural use may be added to the dormant spray solution for suppression of overwintering mites and scale insects. Consult specific oil labels and University or Extension recommendations for precautions and restrictions regarding the use of oils in nut and fruit trees.

**Application Rate:** The amount of Radiant SC applied per acre will depend upon tree size, volume of foliage present and pest pressure. Use a higher rate in the rate range for larger trees or heavy infestations.

**Resistance Management:** Do not make more than three consecutive applications of Group 5 insecticides (spinetoram and spinosad) within a crop season. If additional treatments are required after three 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 1 day of harvest.
- Do not apply more than a total of 56 fl oz of Radiant SC (0.438 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 apply treatments less than 7 days apart.

**Tropical Tree Fruits<sup>1</sup>**

<sup>1</sup>Tropical tree fruits including acerola, atemoya, avocado, biriba, black sapote, canistel, cherimoya, custard apple, feijoa, guava, ilama, jaboticaba, longan, lychee, mamey sapote, mango, papaya, passionfruit, pulasan, rambutan, sapodilla, soursop, Spanish lime, star apple, starfruit, sugar apple, ti leaves, wax jambu, white sapote

**Pests and Application Rates:**

Pests	Radiant SC (fl oz/acre)
katydids <sup>1</sup> lepidopterous larvae, including: avocado leafroller citrus peelminer cutworms fruit tree leafroller light brown apple moth navel orangeworm orange tortrix western tussock moth thrips <sup>2</sup>	8 – 14

<sup>1</sup>Katydid: Control of nymphs only, suppression of adults.

<sup>2</sup>Control 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, or in accordance with local economic thresholds. 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:** The amount of Radiant SC applied per acre will depend upon tree size and pest pressure. Use a lower rate in the rate range for light infestations and/or small trees and a higher rate in the rate range for heavy infestations and/or large trees.

**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. Do not apply to tropical tree fruits grown in greenhouses and nurseries.

**Restrictions:**

- **Preharvest Interval:** Do not apply within 1 day 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 three applications per calendar year.
- **Minimum Treatment Interval:** Do not apply treatments less than 4 days apart.

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### Terms and Conditions of Use

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If terms of the following Warranty Disclaimer, Inherent Risks of Use and Limitation of Remedies are not acceptable, return unopened package at once to the seller for a full refund of purchase price paid. To the extent permitted by law, otherwise, use by the buyer or any other user constitutes acceptance of the terms under Warranty Disclaimer, Inherent Risks of Use and Limitation of Remedies.

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### Warranty Disclaimer

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Dow AgroSciences warrants that this product conforms to the chemical description on the label and is reasonably fit for the purposes stated on the label when used in strict accordance with the directions, subject to the inherent risks set forth below. TO THE EXTENT PERMITTED BY LAW, Dow AgroSciences MAKES NO OTHER EXPRESS OR IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE OR ANY OTHER EXPRESS OR IMPLIED WARRANTY.

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### Inherent Risks of Use

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It is impossible to eliminate all risks associated with use of this product. Crop injury, lack of performance, or other unintended consequences may result because of such factors as use of the product contrary to label instructions (including conditions noted on the label, such as unfavorable temperatures, soil conditions, etc.), abnormal conditions (such as excessive rainfall, drought, tornadoes, hurricanes), presence of other materials, the manner of application, or other factors, all of which are beyond the control of Dow AgroSciences or the seller. To the extent permitted by law, all such risks shall be assumed by buyer.

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### Limitation of Remedies

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To the extent permitted by law, the exclusive remedy for losses or damages resulting from this product (including claims based on contract, negligence, strict liability, or other legal theories), shall be limited to, at Dow AgroSciences' election, one of the following:

1. Refund of purchase price paid by buyer or user for product bought, or
2. Replacement of amount of product used.

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