62719-545 09/28/2007 1/42

U.S. ENVIRONMENTAL PROTECTION AGENCY
Office of Pesticide Programs
Registration Division (7505P)
Ariel Rios Building
1200 Pennsylvania Ave., NW
Washington, D.C. 20460

EPA Reg. Number:	Date of Issuance:
62719-545	09/28/07

Term of Issuance: Conditional

Name of Pesticide Product: Radiant SC

NOTICE OF PESTICIDE:
x Registration
__ Reregistration
(under FIFRA, as amended)

Name and Address of Registrant (include ZIP Code):

Dow AgroSciences, LLC
9330 Zionsville Road.
Indianapolis, IN 46268

Note: Changes in labeling differing in substance from that accepted in connection with this registration must be submitted to and accepted by the Registration Division prior to use of the label in commerce. In any correspondence on this product always refer to the above EPA registration number.

On the basis of information furnished by the registrant, the above named pesticide is hereby registered/reregistered under the Federal Insecticide, Fungicide and Rodenticide Act. Registration is in no way to be construed as an endorsement or recommendation of this product by the Agency. In order to protect health and the environment, the Administrator, on his motion, may at any time suspend or cancel the registration of a pesticide in accordance with the Act. The acceptance of any name in connection with the registration of a product under this Act is not to be construed as giving the registrant a right to exclusive use of the name or to its use if it has been covered by others.

This product is conditionally registered in accordance with FIFRA sec. 3(c)(7)(C) provided that you:

1. Submit and/or cite all data required for registration/re-registration of your product under FIFRA Section 3(c)(5) when the Agency requires all registrants of similar products to submit such data; and submit responses required for re-registration of your product under FIFRA Section 4.

2. Make the following label changes:

   a. Revise the Environmental Hazards section to read as follows: "***This product is toxic to aquatic invertebrates. Do not apply directly to water, or to areas where surface water is present or to intertidal areas below the mean high water mark. Do not contaminate water when cleaning equipment or 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.***

   This product is highly toxic to bees exposed to direct treatment on blooming crops or weeds. Do not apply this product or allow it to drift to blooming crops or weeds while bees are actively visiting the treatment area".

b. Revise the Directions for Use, under ground and aerial directions to include the following: ***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"; 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 ASAE (S572) definition for standard nozzles. In conditions of low humidity and high temperatures, applicators should use a coarser droplet size".***

Add the following to Use Directions: ***Additional Requirements for Ground Applications: "Wind speed must be measured adjacent to the application site on the upwind side, immediately prior to application. For ground boom applications, apply using a nozzle height of no more than 4 feet above the ground or crop canopy. For airblast applications, turn off outward pointing nozzles at row ends and when spraying the outer two rows. To minimize spray loss over the top in orchard applications, spray must be directed into the canopy".***

Add the following to Use Directions: ***Additional Requirements for Aerial Applications: "The spray boom should be mounted on the aircraft as to minimize drift caused by wingtip or rotor vortices. The minimum practical boom length should be used and must 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 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".***

c. In Place of "including but not limited to" for the crop groups, list the crops for each crop group as defined in 40 CFR 180.41.

d. Add a feeding restriction, prohibiting the grazing of peanut hay.

e. Revise the "leaves of root, tuber, and legume vegetable" section to indicate that root, tuber, and legume vegetables treated as described may only be harvested for the foliage not the root, tuber, bean, or pea.

f. Increase pre-harvest interval (PHI) for popcorn grain, cranberry, garden beet, and sugar beet to 28 days, 21 days, 7 days, and 7 days, respectively, to match the spinosad residue data.

g. For herbs and mint, state a maximum yearly rate of 0.48 lb ai/acre.

h. Add rotational crop restrictions to indicate that only a labeled crop may be rotated to a treated field (i.e., Rotational crops – crops for which spinetoram/spinosad tolerances exist may be rotated at any time. All other crops may be rotated 12 months following last application).

i. Delete the information concerning application to "small plantings or spot sprays", because these use directions may permit applications to any crop at application rates greater than those specified later in the label.

j. Change "sorghum" to "***grain sorghum***".

k. Change "cereal grains to "***cereal grains (except rice)***".

l. Revise the titles of (1) "Potato and tuberous and corm vegetables" section to read "***Potatoes and Tuberous and Corm Vegetables, and Globe Artichoke***" - Artichoke and globe artichoke are not part of the tuberous and corm vegetable crop subgroup and (2) "Leafy vegetables" section to read "***Leafy Vegetables, Leaves of Root and Tuber and Legume Vegetables, Cilantro, and Watercress***" - Cilantro and watercress are not part of the leafy vegetables crop group.

m. Revise the "Warranty Limitations and Disclaimer" as follows: Change "To the extent permitted by law" to read "***To the extent consistent with applicable law***".

3. Submit the data listed below conducted in accordance with the 40 CFR 158 test guidelines, by the associated due dates:

Guideline Ref. No.	Title of Study	Date Due
Residue Chemistry		
OPPTS 860.1340	Successful PMV of plant and Livestock enforcement methods	March 28, 2008
OPPTS 860.1480	Poultry feeding study	March 28, 2009
OPPTS 860.1520	Processing studies	Sept. 28, 2009
Non-Guideline	Analytical reference standards	March 28, 2008
Ecological Effects		
72-2	Acute freshwater invertebrate	June 28, 2008
OPPTS 850.1025	Oyster acute toxicity test (shell deposition) raw data or new study	June 28, 2008
72-3a	Acute estuarine/marine fish	Sept. 28, 2009
72-3b	Acute freshwater fish	Sept. 28, 2008
72-4c	Mysid chronic toxicity test	February 28, 2009
OPPTS 850.1735	Whole Sediment Acute Toxicity Invertebrates, Freshwater	February 28, 2009
OPPTS 850.1740	Whole Sediment Acute Toxicity Invertebrates, Estuarine	February 28, 2009
OPPTS 850.3030	Honey bee toxicity of residues on foliage	February 28, 2009

Product Chemistry

Submit a revised CSF: The CSF for the basic formulation (dated 09-29-05) must be corrected because (a) CAS No. for one of the inert ingredients provided in the CSF is incorrect (b) the density value provided in the CSF does not match with that provided in the data and (c) the pH value given on the CSF does not concur with the value of pH in water. Thus, you must incorporate these corrections and submit the revised CSF for evaluation. See accompanying Product Chemistry review.

Submit to the Agency, data on one year storage stability testing (830.6317), conducted concurrently with the corrosion characteristics study (830-6320) at 0, 3, 6, 9 and 12 months of warehouse storage.

For further clarifications and/or additional information on the required labeling revisions and data requirements, please see copy of the Agency's Product Chemistry Review, "Human Health Risk Assessment", "Environmental Fate and Ecological Risk Assessment" and "Residue Chemistry Summary" dated March 6, 2006, September 20, July 31 and August 9, 2007, respectively.

Please note that your failure to satisfy any of the conditions imposed on this registration (e.g., failure to submit the required data by the specified deadlines, or the data submitted were not generated in accordance with applicable test guidelines) may result in the Agency's issuance of a cancellation notice, under FIFRA 6(e). You must also submit the final printed label bearing the above stated revisions prior to releasing this product for sale.

See enclosed copy of the stamped label for your records. If you have any questions concerning this action, please contact Dr. B.A. Akinlosotu at (703) 605-0653.

Signature of Approving Official:	Date:
George LaRocca, Product Manager 13 Insecticide Branch Registration Division (7505P)	September 28, 2007

EPA Form 8570-6

(Base label):

Radiant™ SC

Insecticide

For control or suppression of lepidopterous larvae (worms, caterpillars), dipterous leafminers, thrips, and certain psyllids in asparagus, banana and plantain, bulb vegetables, bushberries, caneberries, cereal grains, citrus, cole crops, corn (field corn, sweet corn, popcorn, and corn grown for seed) and teosinte, cotton, cranberry, cucurbits, fig, fruiting vegetables (tomato, peppers, and eggplant) and okra, grape, herbs, leafy vegetables and leaves of root and tuber and legume vegetables, legume vegetables (succulent and dried beans and peas), mint, peanut, pome fruits, potatoes and tuberous and corm vegetables, root vegetables, soybean, stone fruits, and strawberry, tree nuts and pistachios, and tropical tree fruits.

Group	5	INSECTICIDE

Active Ingredient:

spinetoram: a mixture of 1H-as-Indaceno[3,2-d]oxacyclododecin-7,15-dione, 2-[(6-deoxy-3-O-ethyl-2,4-di-O-methyl-a-L-mannopyranosyl)oxy]-13-[[(2R,5S,6R)-5-(dimethylamino) tetrahydro-6-methyl-2H-pyran-2-yl]oxy]-9-ethyl-2,3,3a,4,5,5a,5b, 6,9,10,11, 12,13, 14,16a,16b-hexadecahydro 14-methyl-, (2R,3aR,5aR,5bS,9S,13S,14R, 16aS,16bR) and 1H-as-Indaceno[3,2-d]oxacyclododecin-7,15-dione, 2-[(6-deoxy-3-O-ethyl-2,4-di-O-methyl-a-L-mannopyranosyl)oxy]-13-[[(2R,5S,6R)-5-(dimethylamino) tetrahydro-6-methyl-2H-pyran-2-yl]oxy]-9-ethyl-2,3,3a,5a,5b, 6,9,10,11,12,13,14, 16a,16b-tetradecahydro-4,14-dimethyl-, (2S,3aR,5aS,5bS,9S,13S,14R, 16aS,16bS)

.....11.7%
Other Ingredients 88.3%
Total 100.0%

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

ACCEPTED with COMMENTS In EPA Letter Dated:

SEP 28 2007

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 spray residues for 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. The 3 hour limitation does not apply if the applicator operates in a state with a formal, state-approved bee protection program, and the applicator follows all applicable requirements of the state-approved program designed to ensure that managed bees are not present in the treatment area 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 washwater or rinsate.

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 label booklet for Directions for Use including Storage and Disposal.

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. If you wish to obtain additional product information, visit our web site at www.dowagro.com.

Shake Well Before Use -- Avoid Freezing

EPA Reg. No. 62719-XXX EPA Est. _____

Produced for Dow AgroSciences LLC • Indianapolis, IN 46268 U.S.A.

Net Contents __

(cover):

Radiant™ SC

Insecticide

For control or suppression of lepidopterous larvae (worms, caterpillars), dipterous leafminers, thrips, and certain psyllids in asparagus, banana and plantain, bulb vegetables, bushberries, caneberries, cereal grains, citrus, cole crops, corn (field corn, sweet corn, popcorn, and corn grown for seed) and teosinte, cotton, cranberry, cucurbits, fig, fruiting vegetables (tomato, peppers, and eggplant) and okra, grape, herbs, leafy vegetables and leaves of root and tuber and legume vegetables, legume vegetables (succulent and dried beans and peas), mint, peanut, pome fruits, potatoes and tuberous and corm vegetables, root vegetables, soybean, stone fruits, and strawberry, tree nuts and pistachios, and tropical tree fruits.

Active Ingredient:

spinetoram: a mixture of 1H-as-Indaceno[3,2-d]oxacyclododecin-7,15-dione, 2-[(6-deoxy-3-O-ethyl-2,4-di-O-methyl-a-L-mannopyranosyl)oxy]-13-[[(2R,5S,6R)-5-(dimethylamino) tetrahydro-6-methyl-2H-pyran-2-yl]oxy]-9-ethyl-2,3,3a,4,5,5a,5b, 6,9,10,11, 12,13, 14,16a,16b-hexadecahydro 14-methyl-, (2R,3aR,5aR,5bS,9S,13S,14R, 16aS,16bR) and 1H-as-Indaceno[3,2-d]oxacyclododecin-7,15-dione, 2-[(6-deoxy-3-O-ethyl-2,4-di-O-methyl-a-L-mannopyranosyl)oxy]-13-[[(2R,5S,6R)-5-(dimethylamino) tetrahydro-6-methyl-2H-pyran-2-yl]oxy]-9-ethyl-2,3,3a,5a,5b, 6,9,10,11,12,13,14, 16a,16b-tetradecahydro-4,14-dimethyl-, (2S,3aR,5aS,5bS,9S,13S,14R, 16aS,16bS) 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 additional precautionary information including Personal Protective Equipment (PPE) and User Safety Recommendations, and Directions for Use including Storage and Disposal.

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. If you wish to obtain additional product information, visit our web site at www.dowagro.com.

Shake Well Before Use -- Avoid Freezing

EPA Reg. No. 62719-XXX

EPA Est. _____

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Produced for Dow AgroSciences LLC • Indianapolis, IN 46268 U.S.A.

Net Contents __

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Precautionary Statements

Hazard 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 spray residues for 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. The 3 hour limitation does not apply if the applicator operates in a state with a formal, state-approved bee protection program, and the applicator follows all applicable requirements of the state-approved program designed to ensure that managed bees are not present in the treatment area 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 washwater or rinsate.

Directions for Use

It is a violation of Federal law to use this product in a manner inconsistent with its labeling.
Read all Directions for Use carefully before applying.

Do not apply this product in a way that will contact workers or other persons, either directly or through drift. Only protected handlers may be in the area during application. For any requirements specific to your state or tribe, consult the state or tribal agency responsible for pesticide regulation.

Agricultural Use Requirements

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

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

PPE required for early entry to treated areas that is permitted under the Worker Protection Standard and that involves contact with anything that has been treated, such as plants, soil, or water, is:
- Coveralls
- Chemical-resistant gloves made of any waterproof material
- Shoes plus socks

Storage and Disposal

Do not contaminate water, food or feed by storage or disposal.
Pesticide Storage: Store in original container only. In case of leak or spill, contain material with absorbent materials and dispose as waste.
Pesticide Disposal: Wastes resulting from the use of this product may be disposed of on site or at an approved waste disposal facility.
Container Disposal: Triple rinse (or equivalent). Then offer for recycling or reconditioning, or puncture and dispose of in a sanitary landfill, or incineration, or, if allowed by state and local authorities, by burning. If burned, stay out of smoke.

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 fermentation of *Saccharopolyspora spinosa*, a naturally occurring soil organism. The suspension concentrate of Radiant SC should be mixed with water and applied 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. Radiant SC should be applied 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)

General Recommendations: 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 Insect Resistance Management 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.
- 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 IPM recommendations for the specific site and pest problem.
- For further information or to report suspected resistance, you may contact Dow AgroSciences by calling 800-253-3033 or over the internet at www.dowagro.com.

Mixing

Always shake well before use. Avoid freezing.

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

Crop Use Rate Chart for Small Plantings or Spot Sprays

Radiant SC fl oz per acre (based on 100 gal/acre)	Amount of Radiant SC Per Volume of Spray Solution: Fluid Ounces or Milliliters					
	Per 1 Gallon of Spray		Per 3 Gallons of Spray		Per 10 Gallons of Spray	
	fl oz	milliliters	fl oz	milliliters	fl oz	milliliters
2	0.02	0.6	0.06	1.8	0.2	6
4	0.04	1.2	0.12	3.6	0.4	12
6	0.06	1.8	0.18	5.4	0.6	18
8	0.08	2.4	0.24	7.2	0.8	24
10	0.10	3	0.30	9	1	30
12	0.12	3.6	0.36	10.8	1.2	36
14	0.14	4.2	0.42	12.6	1.4	42

For Crop Use small plantings or spot sprays, add the required amount of Radiant SC to the recommended amount of water (table is based on 100 gallons of water per acre), mix thoroughly and apply uniformly to plant foliage up to the point of runoff. Mix only as much spray as needed for a single treatment. Do not use more than 3 gallons of spray per 1000 sq ft of area. Follow all label instructions for mixing and applications.

Mixing 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.

Tank Mixing: 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. **Do not use acidifying buffering agents in tank-mixes with Radiant SC.** 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 20-35 mesh screen. This procedure assures good initial dispersion of these formulation types.

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 directions on the manufacturer's label. A nominal concentration of 1 to 2 qt 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 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.

Application

Proper application techniques help ensure thorough spray coverage and correct dosage for optimum insect control. The following recommendations 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.

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 insecticide atomizer suitable for insecticide spraying to provide a fine to coarse spray quality (per ASAE S572, see nozzle catalogs). Under certain conditions, drop nozzles may be required to obtain complete coverage of plant surfaces. Follow manufacturer's recommendations for ideal nozzle spacing and spray pressure. Minimize boom height to optimize uniformity of coverage and optimize on-target deposition.

Ground Orchard Spraying

Dilute Spray Application: This application method is based on 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.

Concentrate Spray Application: This application method is based on the premise that all the plant parts are uniformly covered with spray solution but not to the point of runoff as with a dilute spray. Instead, a lower spray volume is used to deliver the same application rate per acre as used for the dilute spray; use of tree row volume is appropriate.

Aerial Application

Apply in spray volume of 3 to 5 or more gallons per acre (10 or more gallons per acre for trees, vines or orchard crops). Nozzle configuration should provide a medium to fine droplet size per ASAE S-572 standard (see USDA-ARS or NAAA handbook). Guidance for ASAE 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 (max. 12 feet for agricultural canopies). Use GPS equipment, swath markers or flagging to ensure proper application to the target area. The boom nozzle configurations used should be patterned (e.g., at NAAA/ Operation Safe Fly-In) for both crosswind and near parallel winds. If application is made parallel to the wind direction, swath width should be adjusted downward. Use swath adjustment (offset) to compensate for crosswinds. It is best to apply when wind speed is between 2 to 10 mph. Do not apply under completely calm wind conditions. 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, control achieved by aerial application may be lower than by application with ground equipment.

Application by Chemigation

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.

General Directions for Chemigation:
Radiant SC may be applied through overhead sprinkler irrigation systems that will apply water uniformly, including: center pivot, lateral move, end tow, side (wheel) roll, traveler, solid set, micro sprinkler, 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 sprinkler 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.

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 section above using a dilution concentrate matching your injector system requirements. Continually agitate the mixture during mixing and application.

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 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.

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 manufactures recommendations. 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.

Precautions:

- Lack of effectiveness or illegal pesticide residues in the crop can result from non-uniform distribution of treated water.
- If you have questions about calibration, you should contact state extension service specialists, equipment manufacturers or other experts.
- 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.
- A person knowledgeable of the chemigation system and responsible for its operation, or under the supervision of the responsible person, shall shut the system down and make necessary adjustments should the need arise and continuously monitor the injection.
- 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.

Specific Equipment Requirements:

1. The system must contain an air gap, or approved backflow prevention device, or approved 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.
2. The pesticide injection pipeline must contain a functional, automatic, quick-closing check valve to prevent the flow of fluid back toward the injection pump.
3. The pesticide injection pipeline must also contain a functional interlock, e.g. normally closed, valve located on the intake side of the injection system to prevent fluid from being withdrawn from the supply tank when the irrigation system is either automatically or manually shut down.
4. The system must contain functional interlocking controls to automatically shut off the pesticide injection when the water pressure drops or water flow stops.
5. Use of public water supply requires approval of a backflow prevention device or air gap (preferred) by both state and local authorities.
6. Systems must use a metering device, such as a positive displacement injection pump (or flow meter on eductor) effectively designed and constructed of materials that are compatible with pesticides and capable of being fitted with a system interlock. An electric powered pump must meet Section 675 for "Electrically Driven or Controlled Irrigation Machines" NEC 70.
7. 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.
8. 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.

Uses

Asparagus
(Post Harvest Protection of Ferns Only)

Pest and Application Rates:

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

Specific Use Directions:
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 use recommendations for your area.

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

Resistance Management: To reduce the potential for resistance development in target pest species, do not make more than 2 consecutive applications of Group 5 insecticides (spinetoram and spinosad). If additional treatments are required after 2 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:
- Do not apply more than a total of 24 fl oz of Radiant SC (0.188 lb ai of spinetoram) per acre per crop.
- **Maximum Number of Applications:** Do not make more than 3 applications per crop.
- **Minimum Re-Treatment Interval:** Do not make applications less than 4 days apart.
- **Preharvest Interval (PHI):** This use is only for asparagus ferns; do not apply within 60 days of spear harvest.

Banana and Plantain

Pests and Application Rates:
(numbers in parentheses (-) refer to footnotes below)

Pests	Radiant SC	
	(fl oz/acre)	(fl oz/100 gal)
banana rust thrips (1) Hawaiian flower thrips (1) lepidopterous larvae, including banana moth	8 – 11	2.67 – 3.67

(1) Control of thrips may be improved by addition of an adjuvant to the spray mixture. See Use of Adjuvants section under Mixing.

Specific Use Directions:

Application Timing: Apply Radiant SC as a directed fine spray toward bunches and spray to runoff. Apply no later than 2 weeks after bunch emergence and before flower petals senesce and again 1 to 2 days before bunch cover.

Spray Volume: Dilute sprays are sprayed to the point of runoff. The application rate range for dilute sprays in the table is based on 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: To reduce the potential for resistance development in target pest species, do not make more than 2 consecutive applications of Group 5 insecticides (spinetoram and spinosad). If additional treatments are required after 2 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 Radiant SC more than 4 times per crop or more than 6 times per calendar year.

Restrictions:
- Do not apply more than a total of 39 fl oz of Radiant SC (0.305 lb ai of spinetoram) per acre per crop.
- **Maximum Number of Applications:** Do not make more than 4 applications per crop or 6 applications per calendar year.
- **Minimum Re-Treatment Interval:** Do not make applications less than 7 days apart.
- **Preharvest Interval (PHI):** Do not apply within 56 days of harvest.

Bulb Vegetables

Including, but not limited to: Dry Bulb Onion, Garlic, Great-Headed (Elephant) Garlic, Green Onion, Leek, Shallot, Welsh Onion

Pests and Application Rates:
(numbers in parentheses (-) refer to footnotes below)

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

(1) With the exception of yellowstriped armyworm and western yellowstriped armyworm.
(2) 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. If thorough coverage is desired, then high pressure (>70 psi) directed sprays with dual directed nozzles can assist leaf penetration of onion.

Specific Use 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 use recommendations for your area.

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

Resistance Management: To reduce the potential for resistance development in target pest species, do not make more than 2 consecutive applications of Group 5 insecticides (spinetoram and spinosad). If additional treatments are required after 2 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:

- Do not apply more than a total of 30 fl oz of Radiant SC (0.234 lb ai of spinetoram) per acre per crop.
- **Maximum Number of Applications:** Do not make more than 5 applications per calendar year.
- **Minimum Re-Treatment Interval:** Do not make applications less than 4 days apart.
- **Preharvest Interval (PHI):** Do not apply within 1 day of harvest.

Bushberries

Including, but not limited to: Blueberry, Currant, Gooseberry, Huckleberry, Elderberry, Juneberry, Lingonberry, Salal

Pests and Application Rates:
(numbers in parentheses (-) refer to footnotes below)

Pests	Radiant SC (fl oz/acre)
armyworms blueberry gall midge (suppression) blueberry maggot (suppression) cherry fruitworm cranberry fruitworm currant fruitfly (suppression) fireworms leafrollers loopers thrips (suppression) (1)	6 – 12

(1) Control of thrips may be improved by addition of an adjuvant to the spray mixture. See Use of Adjuvants section under Mixing.

Specific Use 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 use recommendations for your area.

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

Resistance Management: To reduce the potential for resistance development in target pest species, do not make more than 2 consecutive applications of Group 5 insecticides (spinetoram and spinosad). If additional treatments are required after 2 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:

- Do not apply more than a total of 39 fl oz of Radiant SC (0.305 lb ai of spinetoram) per acre per crop.
- **Maximum Number of Applications:** Do not make more than 6 applications per calendar year.
- **Minimum Re-Treatment Interval:** Do not make applications less than 6 days apart.
- **Preharvest Interval (PHI):** Do not apply within 3 days of harvest.

Caneberries

Including, but not limited to: Blackberry, Loganberry, Red and Black Raspberry, and Cultivars and/or Hybrids of These

Pests and Application Rates:
(number in parentheses (-) refers to footnote below)

Pests	Radiant SC (fl oz/acre)
armyworms (1) green fruitworm leafrollers looper raspberry fruitworm sawfly western raspberry fruitworm	6 – 12

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

Specific Use 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 use recommendations for your area.

Application Rate: The amount of Radiant SC to apply per acre will depend upon plant size, volume of foliage present and pest pressure. Use a higher rate in the specified rate range for larger larvae or moderate to severe infestations and/or larger plant volume.

Resistance Management: To reduce the potential for resistance development in target pest species, do not make more than 2 consecutive applications of Group 5 insecticides (spinetoram and spinosad). If additional treatments are required after 2 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:
- Do not apply more than a total of 39 fl oz of Radiant SC (0.305 lb ai of spinetoram) per acre per crop.
- **Maximum Number of Applications:** Do not make more than 6 applications per calendar year.
- **Minimum Re-Treatment Interval:** Do not make applications less than 4 days apart.
- **Preharvest Interval (PHI):** Do not apply within 1 day of harvest.

Cereal Grains

Including, but not limited to: Barley, Buckwheat, Grain Amaranth, Milo, Oats, Pearl Millet, Proso Millet, Rye, Sorghum, Triticale, Wheat

Pests and Application Rates:
(number in parentheses (-) refers to footnote below)

	Radiant SC

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

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

Specific Use Directions:
Application Timing: Scout for **armyworms** with enough regularity to monitor egg laying and egg hatch and treat when thresholds are reached. Applications of Radiant SC should be timed 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 indicated for the target pest. Use a higher rate in the specified rate range for heavy infestations, advanced growth stages of target pests, or difficult spray coverage situations.

Resistance Management: To reduce the potential for resistance development in target pest species, do not make more than 2 consecutive applications of Group 5 insecticides (spinetoram and spinosad). If additional treatments are required after 2 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:
- Do not apply more than a total of 18 fl oz of Radiant SC (0.141 lb ai of spinetoram) per acre per year.
- **Maximum Number of Applications:** Do not make more than 3 applications per calendar year.
- **Minimum Re-Treatment Interval:** Do not make applications less than 4 days apart.
- **Preharvest Interval (PHI):** Do not apply within 21 days of grain or straw harvest or within 3 days of forage, fodder, or hay harvest.

Citrus

Including, but not limited to: Grapefruit, Lemons, Limes, Oranges, Tangerines

Pests and Application Rates:
(numbers in parentheses (-) refer to footnotes below)

Pests	Radiant SC (fl oz/acre)
citrus leafminer (1) citrus orangedog citrus psylla (suppression) (1) citrus thrips (1) katydids (2) lepidopterous larvae, including: avocado leafroller citrus peelminer cutworms fruit tree leafroller orange tortrix	6 – 12

western tussock moth	

(1) Control of leafminers, thrips, and psylla may be improved by addition of an adjuvant to the spray mixture. See Use of Adjuvants section under Mixing.
(2) Katydids: Control of nymphs only; suppression of adults.

Specific Use 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 use recommendations for your area.

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

Resistance Management: To reduce the potential for resistance development in target pest species, do not make more than 2 consecutive applications of Group 5 insecticides (spinetoram and spinosad). If additional treatments are required after 2 consecutive applications of Group 5 insecticides, rotate to another class of effective insecticides for at least one application. To delay resistance development in citrus thrips, rotate to another class of effective products for the next 2 applications after using Radiant SC. 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. To further aid in resistance management, do not apply to citrus nurseries or citrus in greenhouses.

Restrictions:
- Do not apply more than a total of 24 fl oz of Radiant SC (0.188 lb ai of spinetoram) per acre per crop.
- **Maximum Number of Applications:** Do not make more than 3 applications per calendar year.
- **Minimum Re-Treatment Interval:** Do not make applications less than 7 days apart.
- **Preharvest Interval (PHI):** Do not apply within 1 day of harvest.
- Do not apply to citrus nurseries or citrus in greenhouses.

Cole Crops (*Brassica* Vegetables)

Including, but not limited to: Broccoli, Broccoli Raab, Brussels Sprouts, Cabbage, Cauliflower, Cavalo, Chinese Broccoli, Chinese Cabbage (Bok Choy), Chinese Cabbage (Napa), Chinese Mustard Cabbage (Gai Choy), Collards, Kale, Kohlrabi, Mizuna, Mustard Greens, Mustard Spinach, Rape Greens, Turnip 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:
(numbers in parentheses (-) refer to footnotes below)

Pests	Radiant SC (fl oz/acre)
armyworms (1) cabbage looper (2) diamondback moth (2) imported cabbageworm (2)	5 – 10
dipterous leafminers (*Liriomyza* spp) (2) thrips (2)	6 – 10

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

(2) Control of lepidopterous larve, leafminers, and thrips may be improved by addition of an adjuvant to the spray mixture. See Use of Adjuvants section under Mixing.

Specific Use 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 use recommendations for your area.

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

Resistance Management: To reduce the potential for resistance development in target pest species, do not make more than 2 consecutive applications of Group 5 insecticides (spinetoram and spinosad). If additional treatments are required after 2 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. Make treatment decisions for the entire farm and consider area wide programs if other growers are in close proximity. Do not make more than 6 applications of Radiant SC per calendar year for diamondback moth over an entire farm (an area of abutting or nearby fields).

Restrictions:
- Do not apply more than a total of 34 fl oz of Radiant SC (0.266 lb ai of spinetoram) per acre per crop.
- **Maximum Number of Applications:** Do not make more than 6 applications per calendar year.
- **Minimum Re-Treatment Interval:** Do not make applications less than 4 days apart.
- **Preharvest Interval (PHI):** Do not apply within 1 day of harvest.
- Do not apply to seedling cole crops grown for transplant within a greenhouse, shade house, or field plot.

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

Pests and Application Rates:
(numbers in parentheses (-) refer to footnotes below)

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

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

Specific Use Directions:
Application Timing: Scout for corn borers and armyworms with enough regularity to monitor egg laying and egg hatch. Applications of Radiant SC should be timed 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 indicated for the target pest. Use a higher rate in the specified 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 Application by Chemigation section for application guidelines.

Resistance Management: To reduce the potential for resistance development in target pest species, do not make more than 2 consecutive applications of Group 5 insecticides (spinetoram and spinosad). If additional treatments are required after 2 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, Popcorn, Corn Grown for Seed

- Do not apply more than a total of 36 fl oz of Radiant SC (0.281 lb ai of spinetoram) per acre per year.
- **Maximum Number of Applications:** Do not make more than 6 applications per calendar year.
- **Minimum Re-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.
- **Preharvest Interval (PHI):** Do not apply within 1 day of grain harvest or 3 days of forage or fodder harvest.

Field Corn and Teosinte

- Do not apply more than a total of 16 fl oz of Radiant SC (0.125 lb ai of spinetoram) per acre per year.
- **Maximum Number of Applications:** Do not make more than 3 applications per calendar year.
- **Minimum Re-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.
- **Preharvest Interval (PHI):** Do not apply within 28 days of grain harvest or within 3 days of fodder or forage harvest.

Cotton

Pests and Application Rates:
(numbers in parentheses (-) refer to footnotes below)

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

(1) With the exception of yellowstriped armyworm and western yellowstriped armyworm.
(2) Control of leafminers and thrips may be improved by addition of an adjuvant to the spray mixture. See Use of Adjuvants section under Mixing.

Specific Use Directions:
Application Timing: For cotton bollworm, use a lower rate in the specified rate range at pre-bloom timings and a higher rate at post-bloom timings. **For tobacco budworm and/or cotton bollworm**, fields should be scouted twice per week and Radiant SC applied 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	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 3 or more occurrences 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: Choose a higher rate of Radiant SC within the specified 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: To reduce the potential for resistance development in target pest species, do not make more than 2 consecutive applications of Group 5 insecticides (spinetoram and spinosad). If additional treatments are required after 2 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. For **tobacco budworm and/or cotton bollworm** where early season conservation of beneficial insects is practical, use Radiant SC to control the 1st and 3rd generation of tobacco budworm and/or cotton bollworm. Where conservation of beneficial insects is not as critical (for example, fields have received non-selective early season treatments for boll weevil or lygus bugs), use Radiant SC to control either the 2nd or 3rd generation of tobacco budworm and/or cotton bollworm.

Restrictions:
- Do not apply more than a total of 34 fl oz of Radiant SC (0.266 lb ai of spinetoram) per acre per crop.
- **Maximum Number of Applications:** Do not make more than 6 applications per calendar year.
- **Minimum Re-Treatment Interval:** Do not make applications less than 4 days apart.
- **Preharvest Interval (PHI):** Do not apply within 28 days of harvest.

Cranberry

Pests and Application Rates:

(number in parentheses (-) refers to footnote below)

Pests	Radiant SC (fl oz/acre)
armyworms currant fruit fly (suppression) fireworms leafrollers loopers sparganothis fruitworm thrips (suppression) (1)	6 – 12

(1) Control of thrips may be improved by addition of an adjuvant to the spray mixture. See Use of Adjuvants section under Mixing.

Specific Use 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 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 specified rate range for larger larvae or moderate to severe infestations and and/or larger plant volume.

Chemigation: Radiant SC may be applied to cranberry by chemigation at labeled rates. Refer to the Application by Chemigation section for application guidelines for chemigation.

Resistance Management: To reduce the potential for resistance development in target pest species, do not make more than 2 consecutive applications of Group 5 insecticides (spinetoram and spinosad). If additional treatments are required after 2 consecutive applications of spinetoram or spinosad, 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:
- Do not apply more than a total of 39 fl oz of Radiant SC (0.305 lb ai of spinetoram) per acre per crop.
- **Maximum Number of Applications:** Do not make more than 6 applications per calendar year.
- **Minimum Re-Treatment Interval:** Do not make applications less than 7 days apart.
- **Preharvest Interval (PHI):** Do not apply within 3 days of harvest.

Cucurbits

Including, but not limited to: Cucumber, Edible Gourds, Muskmelons (Cantaloupe, Honeydew, etc.), Pumpkin, Summer Squash, Watermelon, Winter Squash

Pests and Application Rates:
(numbers in parentheses (-) refer to footnotes below)

Pests	Radiant SC (fl oz/acre)
armyworms (1) cabbage looper melonworm pickleworm rindworms	5 – 10

dipterous leafminers (2) thrips (2)	6 – 10

(1) With the exception of yellowstriped armyworm and western yellowstriped armyworm.
(2) Control of leafminers and thrips may be improved by addition of an adjuvant to the spray mixture. See Use of Adjuvants section under Mixing.

Specific Use 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 use recommendations for your area.

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

Resistance Management: To reduce the potential for resistance development in target pest species, do not make more than 2 consecutive applications of Group 5 insecticides (spinetoram and spinosad). If additional treatments are required after 2 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:
- Do not apply more than a total of 34 fl oz of Radiant SC (0.266 lb ai of spinetoram) per acre per crop.
- **Maximum Number of Applications:** Do not make more than 6 applications per crop.
- **Minimum Re-Treatment Interval:** Do not make applications less than 4 days apart.
- **Preharvest Interval (PHI):** Do not apply within 3 days of harvest for all cucurbit crops except cucumbers. Do not apply within 1 day of harvest for cucumbers.

Fig

Pest and Application Rates:

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

Specific Use Directions:
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 use recommendations for your area.

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

Resistance Management: To reduce the potential for resistance development in target pest species, do not make more than 2 consecutive applications of Group 5 insecticides (spinetoram and spinosad). If additional treatments are required after 2 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:
- Do not apply more than a total of 39 fl oz of Radiant SC (0.305 lb ai of spinetoram) per acre per crop.
- **Maximum Number of Applications:** Do not make more than 4 applications per calendar year.
- **Minimum Re-Treatment Interval:** Do not make applications less than 7 days apart.
- **Preharvest Interval (PHI):** Do not apply within 7 days of harvest.

Fruiting Vegetables and Okra

Including, but not limited to: Eggplant, Ground Cherry, Okra, Pepino, Pepper (except black), Tomatillo, Tomato

Pests and Application Rates:
(numbers in parentheses (-) refer to footnotes below)

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

(1) With the exception of yellowstriped armyworm and western yellowstriped armyworm.
(2) Control of leafminers and thrips may be improved by addition of an adjuvant to the spray mixture. See Use of Adjuvants section under Mixing.

Specific Use 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. Applications of Radiant SC should be timed to coincide with peak egg hatch in species without overlapping generations. **For maintenance sprays for lepidopterous larvae**, use a lower rate in the specified rate range. Consult current pest management recommendations for specific guidelines.

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

Resistance Management: To reduce the potential for resistance development in target pest species, do not make more than 2 consecutive applications of Group 5 insecticides (spinetoram and spinosad). If additional treatments are required after 2 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 Radiant SC to consecutive generations of Colorado potato beetle and do not make more than 2 applications per single generation of Colorado potato beetle.

Restrictions:

- Do not apply more than a total of 34 fl oz of Radiant SC (0.266 lb ai of spinetoram) per acre per calendar year.
- **Maximum Number of Applications:** Do not make more than 6 applications per calendar year.
- **Minimum Re-Treatment Interval:** Do not make applications less than 4 days apart.
- **Preharvest Interval (PHI):** Do not apply within 1 day of harvest.
- Do not apply to seedling fruiting vegetables grown for transplant within a greenhouse, shade house, or outdoor transplant bed.

Grape

Pests and Application Rates:
(number in parentheses (-) refers to footnote below)

Pests	Radiant SC (fl oz/acre)
cutworm grape berry moth grape leaffolder omnivorous leafroller orange tortrix redbanded leafroller thrips (1) western grape leaf skeletonizer	6 – 10

(1) Control of thrips may be improved by addition of an adjuvant to the spray mixture. See Use of Adjuvants section under Mixing.

Specific Use 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 use recommendations for your area.

Application Rate: Equipment and spray volume should be carefully adjusted to assure thorough uniform coverage. Use a higher rate of Radiant SC in the specified rate range for larger larvae or moderate to severe infestations and/or larger plant volume.

Resistance Management: To reduce the potential for resistance development in target pest species, do not make more than 2 consecutive applications of Group 5 insecticides (spinetoram and spinosad). If additional treatments are required after 2 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:
- Do not apply more than a total of 39 fl oz of Radiant SC (0.305 lb ai of spinetoram) per acre per crop.
- **Maximum Number of Applications:** Do not make more than 5 applications per calendar year.
- **Minimum Re-Treatment Interval:** Do not make applications less than 4 days apart.
- **Preharvest Interval (PHI):** Do not apply within 7 days of harvest.

Herbs

Including, but not limited to: Angelica, Balm, Basil, Borage, Burnet, Chamomile, Catnip, Chervil (Dried), Chive, Chive (Chinese), Clary, Coriander (Leaf), Costmary, Cilantro (Leaf), 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:
(numbers in parentheses (-) refer to footnotes below)

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

(1) With the exception of yellowstriped armyworm and western yellowstriped armyworm.
(2) Control of thrips may be improved by addition of an adjuvant to the spray mixture. See Use of Adjuvants section under Mixing.

Specific Use 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 use recommendations for your area.

Application Rate: Apply Radiant SC as a foliar spray at the rate indicated to control target pests. Use a higher rate in the specified 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: To reduce the potential for resistance development in target pest species, do not make more than 2 consecutive applications of Group 5 insecticides (spinetoram and spinosad). If additional treatments are required after 2 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:
- Do not apply more than a total of 39 fl oz of Radiant SC (0.305 lb ai of spinetoram) per acre per crop.
- **Maximum Number of Applications:** Do not make more than 5 applications per crop.
- **Minimum Re-Treatment Interval**: Do not make applications less than 4 days apart.
- **Preharvest Interval (PHI):** Do not apply within 1 day of harvest.

Leafy Vegetables and Leaves of Root and Tuber and Legume Vegetables

Including, but not limited to: Arugula, Beets, Celery, Chervil, Cilantro, Corn Salad, Cress, Dandelion, Dock, Edible Chrysanthemum, Endive, Fennel, Garden Peas, Head Lettuce, Leaf Lettuce, Parsley, Purslane, Radicchio, Rhubarb, Spinach, Swiss Chard, Turnip Greens, Water Cress

Pests and Application Rates:
(numbers in parentheses (-) refer to footnotes below)

Pests	Radiant SC (fl oz/acre)
armyworms (1) cabbage looper diamondback moth	5 – 10

corn earworm (*Helicoverpa zea*) imported cabbageworm	
dipterous leafminers (*Liriomyza* spp) (2) thrips (2)	6 – 10

(1) With the exception of yellowstriped armyworm and western yellowstriped armyworm.
(2) Control of leafminers and thrips may be improved by addition of an adjuvant to the spray mixture. See Use of Adjuvants section under Mixing.

Specific Use 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 use recommendations for your area.

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

Resistance Management: To reduce the potential for resistance development in target pest species, do not make more than 2 consecutive applications of Group 5 insecticides (spinetoram and spinosad). If additional treatments are required after 2 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:
- Do not apply more than a total of 34 fl oz of Radiant SC (0.266 lb ai of spinetoram) per acre per crop.
- **Maximum Number of Applications**: Do not make more than 6 applications per crop.
- **Minimum Re-Treatment Interval**:
  Leafy vegetables: 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.
- **Preharvest Interval (PHI):**
  Leafy vegetables: Do not apply within 1 day of harvest.
  Leaves of Root, Tuber and Legume Vegetables: Do not apply within 3 days of harvest.
- Do not apply to seedling leafy vegetable crops grown for transplant within a greenhouse, shade house, or outdoor transplant bed.

Legume Vegetables (Succulent and Dried Beans and Peas)

Including, but not limited to: 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:
(numbers in parentheses (-) refer to footnote below)

Pests	**Radiant SC (fl oz/acre)**
European corn borer (eggs & larvae)	3 – 8
armyworms (1)	4 – 8

corn earworm (*Helicoverpa zea*) loopers	
dipterous leafminers (2) (*Liriomyza* spp) thrips (2)	5 – 8

(1) With the exception of yellowstriped armyworm and western yellowstriped armyworm.
(2) Control of leafminers and thrips may be improved by addition of an adjuvant to the spray mixture. See Use of Adjuvants section under Mixing.

Specific Use 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 3 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 indicated for the target pest. Use a higher rate in the specified rate range for heavy infestations or advanced growth stages of target pests.

Resistance Management: To reduce the potential for resistance development in target pest species, do not make more than 2 consecutive applications of Group 5 insecticides (spinetoram and spinosad). If additional treatments are required after 2 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:
Succulent Beans and Peas:
- Do not apply more than a total of 28 fl oz of Radiant SC (0.219 lb ai of spinetoram) per acre per crop.
- **Maximum Number of Applications:** Do not make more than 6 applications per crop.
- **Minimum Re-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.
- **Preharvest Interval (PHI):** Do not apply within 3 days of harvest.

Dried Beans and Peas:
- Do not apply more than a total of 12 fl oz of Radiant SC (0.094 lb ai of spinetoram) per acre per crop.
- **Maximum Number of Applications:** Do not make more than 6 applications per crop.
- **Minimum Re-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.
- **Preharvest Interval (PHI):** Do not apply within 28 days of harvest.

Mint

Pests and Application Rates:
(number in parentheses (-) refers to footnote below)

Pests	**Radiant SC (fl oz/acre)**

armyworms cutworms dipterous leafminers (1) loopers thrips (suppression) (1)	4 – 12

(1) 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. If thorough coverage is desired, then high pressure (>70 psi) directed sprays with dual directed nozzles can assist leaf penetration of mint.

Specific Use 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 use recommendations for your area.

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

Resistance Management: To reduce the potential for resistance development in target pest species, do not make more than 2 consecutive applications of Group 5 insecticides (spinetoram and spinosad). If additional treatments are required after 2 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:
- Do not apply more than a total of 39 fl oz of Radiant SC (0.305 lb ai of spinetoram) per acre per crop.
- **Maximum Number of Applications:** Do not make more than 4 applications per crop.
- **Minimum Re-Treatment Interval:** Do not make applications less than 4 days apart.
- **Preharvest Interval (PHI):** Do not apply within 7 days of harvest.

Peanut

Pests and Application Rates:
(numbers in parentheses (-) refer to footnotes below)

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

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

Specific Use Directions:
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 use recommendations for your area.

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

Resistance Management: To reduce the potential for resistance development in target pest species, do not make more than 2 consecutive applications of Group 5 insecticides (spinetoram and spinosad). If additional treatments are required after 2 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:
- Do not apply more than a total of 24 fl oz of Radiant SC (0.188 lb ai of spinetoram) per acre per crop.
- **Maximum Number of Applications:** Do not make more than 3 applications per calendar year.
- **Minimum Re-Treatment Interval:** Do not make applications less than 7 days apart.
- **Preharvest Interval (PHI):** Do not apply within 3 days of nut, forage or hay harvest.

Pome Fruits

Including, but not limited to: Apples, Crabapple, Mayhaw, Pears, Quince

Pests and Application Rates:
(number in parentheses (-) refers to footnote below)

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

(1) Control of thrips, leafminers, and pear psylla may be improved by addition of an adjuvant to the spray mixture. See Use of Adjuvants section under Mixing.

Specific Use Directions:
Application Timing: Codling moth and oriental fruit moth treatments should closely follow regional spray recommendations 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 per acre will depend upon tree size and pest pressure. Choose lower rates in the specified rate range for light infestations and/or smaller trees and higher rates for heavy infestations and/or larger trees.

Resistance Management: To reduce the potential for resistance development in target pest species, do not make more than 3 consecutive applications of Group 5 insecticides (spinetoram and spinosad) within a crop season. If additional treatments are required after 3 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. Avoid treating consecutive generations of codling moth, oriental fruit moth, leafrollers, and pear psylla.
Restrictions:
- Do not apply more than a total of 56 fl oz of Radiant SC (0.438 lb ai of spinetoram) per acre per crop.
- **Maximum Number of Applications:** Do not make more than 4 applications per calendar year.
- **Minimum Re-Treatment Interval:** Do not make applications less than 7 days apart.
- **Preharvest Interval (PHI):** Do not apply within 7 days of harvest.

Potatoes and Tuberous and Corm Vegetables

Including, but not limited to: Artichoke, Cassava, Chayote Root, Chinese Artichoke, Garden Beet, Ginger, Jerusalem Artichoke, Potatoes, Sugar Beet, Sweet Potatoes, Tumeric, Yams

Pests and Application Rates:
(numbers in parentheses (-) refer to footnotes below)

Pests	Radiant SC (fl oz/acre)
armyworms (1) artichoke plume moth Colorado potato beetle dipterous leafminers (*Liriomyza* spp) (2) European corn borer loopers thrips (2)	6 – 8

(1) With the exception of yellowstriped armyworm and western yellowstriped armyworm.
(2) Control of leafminers and thrips may be improved by addition of an adjuvant to the spray mixture. See Use of Adjuvants section under Mixing.

Specific Use Directions:
Application Timing: 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 use recommendations for your area.

Application Rate: Apply Radiant SC as a foliar spray at the rate indicated for the target pest. Use a

higher rate in the specified 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 Application by Chemigation section for application guidelines.

Resistance Management: To reduce the potential for resistance development in target pest species, do not make more than 2 consecutive applications of Group 5 insecticides (spinetoram and spinosad). If additional treatments are required after 2 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 Radiant SC to consecutive generations of Colorado potato beetle and do not make more than 2 applications per single generation of Colorado potato beetle.

Restrictions:

- Do not apply more than a total of 32 fl oz of Radiant SC (0.250 lb ai of spinetoram) per acre per crop.
- **Maximum Number of Applications:** Do not make more than 4 applications per calendar year.
- **Minimum Re-Treatment Interval**: Do not make applications less than 7 days apart.
- **Preharvest Interval (PHI):**
  Artichoke: Do not apply within 2 days of harvest.
  Sugar and garden beets: Do not apply within 3 days of harvest.
  All others: Do not apply within 7 days of harvest.

Root Vegetables

Including, but not limited to: Black Salsify, Carrot, Celeriac, Chicory, Edible Burdock, Ginseng, Horseradish, Parsnip, Radish, Oriental Radish, Rutabaga, Salsify, Skirret, Spanish Salsify, Turnip, Turnip-Rooted Chervil, Turnip-Rooted Parsley

Pests and Application Rates:

Pests	Radiant SC (fl oz/acre)
armyworms (1) dipterous leafminers (*Liriomyza* spp) (2) European corn borer flea beetles (suppression) loopers thrips†	6 – 8

(1) With the exception of yellowstriped armyworm and western yellowstriped armyworm.
(2) 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.

Specific Use 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 use recommendations for your area.

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

Resistance Management: To reduce the potential for resistance development in target pest species, do not make more than 2 consecutive applications of Group 5 insecticides (spinetoram and spinosad). If additional treatments are required after 2 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:
Black salsify, carrot, chicory, ginseng, horseradish, parsnip, salsify, skirret, Spanish salsify, turnip-rooted chervil, turnip-rooted parsley:
- Do not apply more than a total of 28 fl oz of Radiant SC (0.219 lb ai of spinetoram) per acre per crop.
- **Maximum Number of Applications:** Do not make more than 4 applications per calendar year.
- **Minimum Re-Treatment Interval**: Do not make applications less than 4 days apart.
- **Preharvest Interval (PHI):** Do not apply within 3 days of harvest.

Celeriac, edible burdock, Oriental radish, radish, rutabaga, turnip:
- Do not apply more than a total of 24 fl oz of Radiant SC (0.188 lb ai of spinetoram) per acre per crop.
- **Maximum Number of Applications:** do not make more than 3 applications per calendar year.
- **Minimum Re-Treatment Interval:** Do not make applications less than 4 days apart.
- **Preharvest Interval (PHI):** Do not apply within 3 days of harvest.

Soybean

Pests and Application Rates:
(numbers in parentheses (-) refer to footnotes below)

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

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

Specific Use Directions:
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. Use a higher rate in the specified rate range for heavy infestations and/or difficult spray coverage situations.

Resistance Management: To reduce the potential for resistance development in target pest species, do not make more than 2 consecutive applications of Group 5 insecticides (spinetoram and spinosad). If additional treatments are required after 2 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:
- Do not apply more than a total of 14 fl oz of Radiant SC (0.109 lb ai of spinetoram) per acre per year.

- **Maximum Number of Applications:** Do not make more than 4 applications per calendar year.
- **Minimum Re-Treatment Interval:** Do not make applications less than 4 days apart.
- **Preharvest Interval (PHI):** Do not apply within 28 days of harvest.

Stone Fruits

Including, but not limited to: Apricots, Cherries, Nectarines, Peaches, Plums, Prunes

Pests and Application Rates:
(numbers in parentheses (-) refer to footnotes below)

Pests	Radiant SC (fl oz/acre)
peach twig borer (dormant spray)	6 – 14
cherry fruit fly green fruitworm leafminers, including: spotted tentiform, western tentiform leafrollers, including: oblique-banded fruit tree pandemis red-banded variegated peach twig borer (in-season spray) thrips (1) tufted apple bud moth western cherry fruit fly	9 – 14
oriental fruit moth plum curculio (suppression)	12 – 14

(1) Control of thrips may be improved by addition of an adjuvant to the spray mixture. See Use of Adjuvants section under Mixing.

Specific Use Directions:
Application Timing: Oriental fruit moth applications should closely follow regional spray recommendations based on 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 per acre will depend upon tree size and pest pressure. Choose lower rates in the specified rate range for light infestations or smaller trees and higher rates for heavy infestations or larger trees.

Resistance Management: To reduce the potential for resistance development in target pest species, do not make more than 3 consecutive applications of Group 5 insecticides (spinetoram and spinosad) within a crop season. If additional treatments are required after 3 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. Avoid treating consecutive generations of oriental fruit moth and leafrollers.

Restrictions:
- Do not apply more than a total of 56 fl oz of Radiant SC (0.438 lb ai of spinetoram) per acre per year.
- **Maximum Number of Applications:** Do not make more than 4 applications per calendar year.
- **Minimum Re-Treatment Interval:** Do not make applications less than 3 days apart for thrips, nor less than 7 days apart for all other listed pests.
- **Preharvest Interval (PHI):** Do not apply within 7 days of harvest for cherries, plums, and prunes, within 14 days of harvest for peaches and apricots, or within 1 day of harvest for nectarines.

Strawberry

Pests and Application Rates:
(numbers in parentheses (-) refer to footnotes below)

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

(1) With the exception of yellowstriped armyworm and western yellowstriped armyworm.
(2) Control of thrips may be improved by addition of an adjuvant to the spray mixture. See Use of Adjuvants section under Mixing.

Specific Use Directions:
Application Timing: 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 use recommendations for your area.

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

Resistance Management: To reduce the potential for resistance development in target pest species, do not make more than 2 consecutive applications of Group 5 insecticides (spinetoram and spinosad). If additional treatments are required after 2 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:
- Do not apply more than a total of 39 fl oz of Radiant SC (0.305 lb ai of spinetoram) per acre per crop.
- **Maximum Number of Applications:** Do not make more than 5 applications per calendar year.
- **Minimum Re-Treatment Interval:** Do not make applications less than 3 days apart for thrips, nor less than 4 days apart for all other listed pests.
- **Preharvest Interval (PHI):** Do not apply within 1 day of harvest.

Tree Nuts and Pistachios

Including, but not limited to: Almonds, Cashew, Chestnut, Filbert (Hazelnut), Macadamia Nut, Pecan Pistachios, Walnut

Pests and Application Rates:
(numbers in parentheses (-) refer to footnotes below)

Pests	Radiant SC (fl oz/acre)
peach twig borer (dormant spray)	3 – 14
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

Specific Use Directions:
Application Timing: Apply Radiant SC as either a dormant treatment or as a foliar spray when pests first appear or in accordance with local conditions. Applications should closely follow regional spray recommendations based on 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 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 per acre will depend upon tree size, volume of foliage present and pest pressure. Choose a higher rate in the specified rate range for larger trees or heavy infestations.

Resistance Management: To reduce the potential for resistance development in target pest species, do not make more than 3 consecutive applications of Group 5 insecticides (spinetoram and spinosad) within a crop season. If additional treatments are required after 3 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:
- Do not apply more than a total of 56 fl oz of Radiant SC (0.438 lb ai of spinetoram) per acre per crop.
- **Maximum Number of Applications:** Do not make more than 4 applications per calendar year.
- **Minimum Re-Treatment Interval:** Do not apply treatments less than 7 days apart.
- **Preharvest Interval (PHI):** Do not apply within 14 days of harvest.

Tropical Tree Fruits

Including, but not limited to: 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 Palm Leaves, Wax Jambu, White Sapote

Pests and Application Rates:

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

(1) Katydids: Control of nymphs only, suppression of adults.
(2) Control of thrips may be improved by addition of an adjuvant to the spray mixture. See Use of Adjuvants section under Mixing.

Specific Use Directions:
Application Rate: The amount of Radiant SC per acre will depend upon tree size and pest pressure. Choose a lower rate in the specified rate range for light infestations and/or small trees and a higher rate for heavy infestations and/or large trees.

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 use recommendations for your area.

Resistance Management: To reduce the potential for resistance development in target pest species, do not make more than 2 consecutive applications of Group 5 insecticides (spinetoram and spinosad). If additional treatments are required after 2 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:
- Do not apply more than a total of 28 fl oz of Radiant SC (0.219 lb ai of spinetoram) per acre per crop.
- **Maximum Number of Applications:** Do not make more than 3 applications per calendar year.
- **Minimum Re-Treatment Interval:** Do not apply treatments less than 4 days apart.
- **Preharvest Interval (PHI):** Do not apply within 1 day of harvest.

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