

62719-294

9/18/2008

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**UNITED STATES ENVIRONMENTAL PROTECTION AGENCY**  
WASHINGTON, D.C. 20460

OFFICE OF  
PREVENTION, PESTICIDES  
AND TOXIC SUBSTANCES

September 18, 2008

Mr. Kenneth D. Racke  
Regulatory Manager  
Dow AgroSciences LLC  
9330 Zionsville Road  
Indianapolis, IN 46268

Subject: Label Amendment  
SpinTor 2SC (EPA Reg. No. 62719-294)  
Application Dated June 17, 2008  
Decision Number 397643

Dear Mr. Racke:

The above referenced amendment, submitted in connection with registrations under Federal Insecticide, Fungicide, and Rodenticide Act, as amended, is acceptable subject to the following comments:

- In all Storage and Disposal sections, please change the term "Container Reuse" to "Container Handling" to prevent the implication that nonrefillable containers could be reused.
- In the Storage and Disposal section for nonrefillable rigid containers (both in the base labels and in the label booklet), please move the sentence "Offer for recycling if available" to below the rinsing instructions and revise to read as follows: "Then offer for recycling if available, or puncture and dispose of in a sanitary landfill, or by incineration, or by other procedures allowed by state and local authorities." This provides the user with additional information on how to dispose of the cleaned container if recycling is not available.
- In the Storage and Disposal section for refillable rigid containers (both in the base labels and in the label booklet), please add the sentence "Then offer for recycling if available, or puncture and dispose of in a sanitary landfill, or by incineration, or by other procedures allowed by state and local authorities" below the rinsing instructions. This provides the user with information on how to dispose of the cleaned refillable container at the end of its useful life.

- On page 13 in the Use of Adjuvants paragraph, change the phrase "...is required" to "...is necessary for pest control" to avoid the implication that penetration into waxy leaf surfaces is required by the label.
- On page 17 in the Asparagus directions for use, move the bullet "Do not make more than 3 applications per crop" from the Restrictions list to the Resistance Management paragraph.
- On page 24 in the Fruiting Vegetables and Okra directions for use, under Restrictions, change the bullet "Do not apply to seedling fruiting vegetables grown for transplant..." to "Do not apply to seedling fruiting vegetables and okra grown for transplant..." since the list of fruiting vegetables on page 23 does not include okra.
- On page 28 in the Mint directions for use, change the last bullet under Restrictions to read "Do not make more than 3 applications per calendar year or per crop," per the March 1, 2006, EPA stamped, approved label.
- On page 30 in the Pome Fruits directions for use, move the bullet "Do not apply more than 3 sprays targeted at leafrollers per season" from the Restrictions list to the Resistance Management paragraph.
- On page 33 in the Small Cereal Grains directions for use, delete the bullet "Do not allow cattle to graze treated area until spray has dried" that appears under Restrictions, as this may appear to conflict with the forage preharvest interval.
- On page 35 in the Stone Fruit directions for use, move the bullet "Do not apply more than 3 sprays targeted at leafrollers per season" from the Restrictions list to the Resistance Management paragraph.
- On page 36 in the Strawberries directions for use, move the bullet "Do not make more than 5 applications per year" from the Restrictions list to the Resistance Management paragraph.
- On page 37 in the Tree Fruits directions for use, move the bullet "In order to prevent or delay resistance development in thrips, do not apply SpinTor 2SC more than 2 times per year" from the Restrictions list to the Resistance Management paragraph.
- On page 38 in the Tree Nuts and Pistachios directions for use, delete the bullet "Do not apply more than 3 sprays targeted at leafrollers per season" because this bullet already appears in the Resistance Management paragraph.

Please submit 3 copies of final, printed labeling prior to releasing the product for shipment. If you have any questions concerning this action, please contact me at (703) 308-8059.

Sincerely,



Kimberly Nesci  
Product Manager 11  
Insecticide Branch  
Registration Division (7505P)

Enclosure: SpinTor 2SC label stamped "Accepted with Comments"

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(Base label for rigid containers 5 gal or less):

# SpinTor<sup>®</sup> 2SC

## Naturalyte<sup>®</sup> Insect Control

A Naturalyte<sup>®</sup> insect control product for control or suppression of lepidoptera larvae (worms or caterpillars), leafminers and thrips

<b>Group</b>	<b>5</b>	<b>INSECTICIDE</b>
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**Active Ingredient:**

spinosad (a mixture of spinosyn A and spinosyn D) .....	22.8%
Other Ingredients .....	77.2%
Total .....	100.0%

ACCEPTED  
With COMMENTS  
In EPA Letter Dated: SEP 18 2008

Contains 2 lb of active ingredient per gallon.

U.S. Patent No. 5,362,634 and 5,496,931

Under the Federal Insecticide, Fungicide and Rodenticide Act, As amended, for the pesticide Registered under EPA Reg. No:

62719-294

**Keep Out of Reach of Children**

### Precautionary Statements

#### 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.

#### Environmental Hazards

This product is toxic to bees exposed to treatment 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. This product is toxic to aquatic invertebrates. Do not apply directly to water, to areas where surface water is present or to intertidal areas below the mean high water mark. Do not contaminate water when disposing of equipment washwaters.

#### 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.

#### Storage and Disposal

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

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

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

**Container Reuse:** Nonrefillable container. Do not reuse or refill this container. Offer for recycling if available.

Triple rinse or pressure rinse container (or equivalent) promptly after emptying. **Triple rinse** as follows: Empty the remaining contents into application equipment or a mix tank and drain for 10 seconds after the flow begins to drip. Fill the container 1/4 full with water and recap. Shake for 10 seconds. Pour rinsate into application equipment or a mix tank or store rinsate for later use or disposal. Drain for 10 seconds after the flow begins to drip. Repeat this procedure two more times. **Pressure rinse** as follows: Empty the remaining contents into application equipment or a mix tank and continue to drain for 10 seconds after the flow begins to drip. Hold container upside down over application equipment or mix tank or collect rinsate for later use or disposal. Insert pressure rinsing nozzle in the side of the container, and rinse at about 40 psi for at least 30 seconds. Drain for 10 seconds after the flow begins to drip.

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

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

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

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

EPA Reg. No. 62719-294

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

®Trademark of Dow AgroSciences LLC

**Produced for  
Dow AgroSciences LLC  
9330 Zionsville Road  
Indianapolis, IN 46268**

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

(Base label for refillable rigid containers larger than 5 gal):

# SpinTor® 2SC

## Naturalyte® Insect Control

A Naturalyte® insect control product for control or suppression of lepidoptera larvae (worms or caterpillars), leafminers and thrips

<b>Group</b>	<b>5</b>	<b>INSECTICIDE</b>
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Active Ingredient:

spinosad (a mixture of spinosyn A and spinosyn D) .....	22.8%
Other Ingredients .....	77.2%
Total .....	100.0%

Contains 2 lb of active ingredient per gallon.

U.S. Patent No. 5,362,634 and 5,496,931

### Keep Out of Reach of Children

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### Precautionary Statements

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#### 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.

#### Environmental Hazards

This product is toxic to bees exposed to treatment 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. This product is toxic to aquatic invertebrates. Do not apply directly to water, to areas where surface water is present or to intertidal areas below the mean high water mark. Do not contaminate water when disposing of equipment washwaters.

#### 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.

#### Storage and Disposal

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

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

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

**Container Reuse:** Refillable container. Refill this container with pesticide only. Do not reuse this container for any other purpose.

Cleaning the container before final disposal is the responsibility of the person disposing of the container. Cleaning before refilling is the responsibility of the refiller. To clean the container before final disposal, empty the remaining contents from this container into application equipment or a mix tank. Fill the container about 10% full with water and, if possible, spray all sides while adding water. If practical, agitate vigorously or recirculate water with the pump for two minutes. Pour or pump rinsate into application equipment or rinsate collection system. Repeat this rinsing procedure two more times.

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

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

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

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9330 Zionsville Road  
Indianapolis, IN 46268

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

80940

(Base label for nonrefillable rigid containers larger than 5 gal):

# SpinTor<sup>®</sup> 2SC

## Naturalyte<sup>®</sup> Insect Control

**A Naturalyte<sup>®</sup> insect control product for control or suppression of lepidoptera larvae (worms or caterpillars), leafminers and thrips**

<b>Group</b>	<b>5</b>	<b>INSECTICIDE</b>
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**Active Ingredient:**

spinosad (a mixture of spinosyn A and spinosyn D) .....	22.8%
Other Ingredients .....	77.2%
Total .....	100.0%

Contains 2 lb of active ingredient per gallon.

U.S. Patent No. 5,362,634 and 5,496,931

### Keep Out of Reach of Children

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### Precautionary Statements

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#### 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.

#### Environmental Hazards

This product is toxic to bees exposed to treatment 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. This product is toxic to aquatic invertebrates. Do not apply directly to water, to areas where surface water is present or to intertidal areas below the mean high water mark. Do not contaminate water when disposing of equipment washwaters.

#### 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.

#### Storage and Disposal

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



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

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

**Container Reuse:** Nonrefillable container. Do not reuse or refill this container. Offer for recycling if available.

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

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

EPA Reg. No. 62719-294

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

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**Produced for  
Dow AgroSciences LLC  
9330 Zionsville Road  
Indianapolis, IN 46268**

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

100440

(Label booklet cover):

# SpinTor<sup>®</sup> 2SC

## Naturalyte<sup>®</sup> Insect Control

**A Naturalyte<sup>®</sup> insect control product for control or suppression of lepidoptera larvae (worms or caterpillars), leafminers and thrips**

**Active Ingredient:**

spinosad (a mixture of spinosyn A and spinosyn D) .....	22.8%
Other Ingredients .....	77.2%
Total .....	100.0%

Contains 2 lb of active ingredient per gallon.

U.S. Patent No. 5,362,634 and 5,496,931

### Keep Out of Reach of Children

#### **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 Directions for Use.**

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

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## Precautionary Statements

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### 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.

### Environmental Hazards

This product is toxic to bees exposed to treatment 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. This product is toxic to aquatic invertebrates. Do not apply directly to water, to areas where surface water is present or to intertidal areas below the mean high water mark. Do not contaminate water when disposing of equipment washwaters.

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### Directions for Use

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

Do not apply this product in a way that will contact workers or other persons, either directly or through drift. Only protected handlers may be in the area during application. For any requirements specific to your state or tribe, consult the 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 (PPE), and restricted entry interval. The requirements in this box only apply to uses of this product that are covered by the Worker Protection Standard.

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

PPE required for early entry to treated areas that is permitted under the Worker Protection Standard and that involves contact with anything that has been treated, such as plants, soil, or water, is:

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

### Storage and Disposal

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

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

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

**Nonrefillable containers 5 gallons or less:**

**Container Reuse:** Nonrefillable container. Do not reuse or refill this container. Offer for recycling if available.

Triple rinse or pressure rinse container (or equivalent) promptly after emptying. **Triple rinse** as follows: Empty the remaining contents into application equipment or a mix tank and drain for 10 seconds after the flow begins to drip. Fill the container 1/4 full with water and recap. Shake for 10 seconds. Pour rinsate into application equipment or a mix tank or store rinsate for later use or disposal. Drain for 10 seconds after the flow begins to drip. Repeat this procedure two more times. **Pressure rinse** as follows: Empty the remaining contents into application equipment or a mix tank and continue to drain for 10 seconds after the flow begins to drip. Hold container upside down over application equipment or mix tank or collect rinsate for later use or disposal. Insert pressure rinsing nozzle in the side of the container, and rinse at about 40 psi for at least 30 seconds. Drain for 10 seconds after the flow begins to drip.

**Refillable containers 5 gallons or larger:**

**Container Reuse:** Refillable container. Refill this container with pesticide only. Do not reuse this container for any other purpose.

Cleaning the container before final disposal is the responsibility of the person disposing of the container. Cleaning before refilling is the responsibility of the refiller. To clean the container before final disposal, empty the remaining contents from this container into application equipment or a mix tank. Fill the container about 10% full with water and, if possible, spray all sides while adding water. If practical, agitate vigorously or recirculate water with the pump for two minutes. Pour or pump rinsate into application equipment or rinsate collection system. Repeat this rinsing procedure two more times.

**Nonrefillable containers 5 gallons or larger:**

**Container Reuse:** Nonrefillable container. Do not reuse or refill this container. Offer for recycling if available.

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

## General Information

SpinTor® 2SC is a Naturalyte® insect control product for control or suppression of many foliage feeding pests including lepidoptera larvae (worms or caterpillars), Colorado potato beetles, leafminers and thrips infesting labeled crops. This product's active ingredient, spinosad, is biologically derived from the fermentation of *Saccharopolyspora spinosa*, a naturally occurring soil organism. SpinTor 2SC should be mixed with water and applied as a foliar spray with aerial or ground equipment equipped for conventional insecticide spraying.

## General Use Precautions

### Integrated Pest Management (IPM) Programs

SpinTor 2SC is recommended for IPM programs in labeled crops. SpinTor 2SC 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, SpinTor 2SC 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 SpinTor 2SC is tank mixed with any insecticide that reduces its selectivity in preserving beneficial predatory insects, the full benefit of SpinTor 2SC in an IPM program may be reduced.

#### **Insecticide Resistance Management (IRM)**

SpinTor 2SC contains spinosad, 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 SpinTor 2SC 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 directions sections of this label, especially in regard to IRM recommendations.
- Avoid use of the same active ingredient or mode of action (same insecticide group) on consecutive generations of insects. However, multiple applications to reduce a single generation are acceptable. Treat the next generation with a different active ingredient that has a different mode of action or use no treatment for the next generation.
- Avoid using less than labeled rates of any insecticide when applied alone or in tank mixtures.
- Applications should be targeted against early insect developmental stages whenever possible.
- Base insecticide use on comprehensive IPM programs including crop rotations.
- Monitor treated insect populations in the field for loss of effectiveness.
- Contact your local extension specialist, certified crop advisor, and/or manufacturer for insecticide resistance management and/or IPM recommendations for the specific site and resistant pest problems.
- For further information or to report suspected resistance, contact your local Dow AgroSciences representative or by calling 800-258-3033.

#### **Mixing**

**Always shake well before use. Avoid freezing.**

#### **Application Rate Reference Table**

<b>Application Rate of SpinTor 2SC (fl oz/acre)</b>	<b>Active Ingredient Equivalent (lb ai/acre)</b>	<b>Acres per Gallon of SpinTor 2SC</b>
1.5	0.023	85
3	0.047	43
4	0.062	32
6	0.094	21
8	0.125	16
10	0.156	13

**Mixing SpinTor 2SC Alone:** Fill the spray tank with water to about 1/2 of the required spray volume. Start agitation and add the required amount of SpinTor 2SC. 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 SpinTor 2SC 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 SpinTor 2SC. 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. SpinTor 2SC 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 resuspended before spraying is resumed. A sparger agitator is particularly useful for this purpose.

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

**Spray Tank pH:** A spray tank pH between 6.0 and 9.0 is suggested to achieve maximum performance of SpinTor 2SC. If the water source is outside of this pH range, or tank mixing other pesticides, adjuvants, or foliar nutrients will cause the pH to fall outside this range, consider adjusting the spray tank pH to be between 6.0 and 9.0 before adding SpinTor 2SC. To do this, add all other tank mix components first, then check the spray tank pH, adjust if desired, and then add SpinTor 2SC. If you require additional information on how to adjust spray tank pH, contact your Dow AgroSciences representative.

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

- Use only adjuvant products labeled for agricultural use and follow the manufacturer's label directions. A nominal concentration of 1 to 2 qt/100 gal (0.25 to 0.5% v/v) is generally sufficient.
- For leafminers and thrips, emulsified crop oils or methylated crop oil plus organosilicone combination products are recommended.
- When using adjuvants, always conduct a jar test to determine the compatibility of the various components in the mixture. Crop safety should be determined 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

Do not apply SpinTor 2SC in greenhouses or other enclosed structures used for growing crops.

Proper application techniques help ensure thorough spray coverage and correct dosage for optimum

insect control. The following directions are provided for ground and aerial application of SpinTor 2SC. Attention should be given to sprayer speed and calibration, wind speed, and foliar canopy to ensure adequate spray coverage.

#### **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 ASABE S-572, see nozzle catalogs). Under certain conditions, drop nozzles may be required to obtain complete coverage of plant surfaces. Follow manufacturer's specifications for ideal nozzle spacing and spray pressure. Minimize boom height to optimize uniformity of coverage and maximize deposition (optimize on-target deposition) to reduce drift.

#### **Orchard Spraying**

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

**Concentrate Spray Application:** This application method is based upon 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.

#### **Aerial Application**

Apply in spray volume of 5 gallons or more per acre (10 gallons or more per acre for trees, vines or orchard crops). Nozzle configuration should provide a medium to fine droplet size per ASABE S-572 standard (see USDA-ARS or NAAA handbook). Guidance for ASABE S-572 nozzle configuration can be found at the following web site: [www.cpproductsinc.com](http://www.cpproductsinc.com). Boom length must be less than 75% of wing or 85% of rotor span and swath adjustment (offset) to compensate for crosswinds. Observe minimum safe application height (maximum 12 feet for ag 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 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. Do not apply under completely calm wind conditions. It is best to apply when wind speed is between 2 to 10 mph. Under conditions of low humidity and high temperatures, adjust spray volume and droplet size upward to compensate for evaporation of spray droplets. Insect control by aerial application may be less than control by ground application because of reduced coverage.

#### **Chemigation Application**

SpinTor 2SC may be applied through properly equipped chemigation systems for insect control in corn, cranberries and potatoes. Follow use directions for these crops in the Uses section of this label. Do not apply SpinTor 2SC by chemigation to other labeled crops except as specified in Dow AgroSciences supplemental labeling or product bulletins.

#### **General Directions for Chemigation:**

SpinTor 2SC may be applied through drip or 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 SpinTor 2SC must be injected continuously and uniformly into the irrigation water line as the sprinkler is moving. If continuously moving irrigation equipment is used, apply in no more than 0.25 inch of water. For irrigation systems that do not move



during operation, apply in no more than 0.25 inch of irrigation immediately before the end of the irrigation cycle.

**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 SpinTor 2SC needed to cover the desired acreage. Mix according to instructions in the Mixing section above. Continually agitate the mixture during mixing and application.

**Equipment Calibration:** In order to calibrate the irrigation system and injector to apply the mixture containing SpinTor 2SC, determine the following: 1) Calculate the number of acres irrigated by the system; 2) Calculate the amount of product required and premix; 3) Determine the irrigation rate and determine the number of minutes for the system to cover the intended treatment area; 4) Calculate the total gallons of insecticide mixture needed to cover the desired acreage. Divide the total gallons of insecticide mixture needed by the number of minutes (minus time to flush out) to cover the treatment area. This value equals the gallons per minute output that the injector or eductor must deliver. Convert the gallons per minute to milliliters or ounces per minute if needed. Calibrate the injector system with the system in operation at the desired irrigation rate. It is suggested that the injection 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 manufacturer's 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 injection 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, 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 operate the system 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 run off 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:**

- 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.

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- The pesticide injection line must contain a functional, automatic, quick-closing check valve to prevent the flow of fluid back toward the injection chemical supply.
- A pesticide injection pump must also contain a functional interlock, e.g., mechanical or electrical to shut off chemical supply when the irrigation system is either automatically or manually shut down.
- The system must contain functional interlocking controls to automatically shut off the pesticide injection when the water pressure drops too low or water flow stops.
- Use of public water supply requires approval of a backflow prevention device or air gap (preferred) by both state and local authorities.
- 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.
- 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 backflow prevention devices on the water line.
- The tank holding the insecticide mixture should be free of rust, fertilizer, sediment, and foreign material, and equipped with an in-line strainer situated between the tank and the injection point.

**Uses**

**Asparagus**  
(Post Harvest Protection of Ferns Only)

**Pest and Application Rates:**

Pest	Application Rate	
	Active Ingredient (lb/acre)	SpinTor 2SC (fl oz/acre)
asparagus beetle	0.062 - 0.094	4 - 6

**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 local use recommendations for your area.

**Application Rate:** Apply SpinTor 2SC as a foliar spray at the rate indicated to control asparagus beetle in asparagus fern. Use a higher rate in the rate range for heavy infestations or advanced growth stages of the beetle. Heavy infestations may require repeat applications, but follow resistance management guidelines.

**Resistance Management:** Do not make more than 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 local Dow AgroSciences representative, extension specialist, certified crop advisor, or state agricultural experiment station for information on alternative effective products to use in your area.

**Restrictions:**

- **Preharvest Interval:** This use is only for asparagus ferns; do not apply within 60 days of spear harvest.
- Do not apply more than a total of 18 fl oz of SpinTor 2SC (0.28 lb ai spinosad) per acre per crop.
- Do not make more than 3 applications per crop.
- Do not feed treated ferns to meat or dairy animals.

**Bulb Vegetables**

Bulb vegetables including dry bulb onion, garlic, great-headed (elephant) garlic, green onion, leek, shallot, welch onion

**Pests and Application Rates:**

Pests	SpinTor 2SC (fl oz/acre)
armyworms dipteran leafminers European corn borer fleabeetle loopers	3 – 6
thrips (suppression) <sup>1</sup>	4 – 8

<sup>1</sup> Control of 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 service specialist, certified crop advisor or your state agricultural experiment station for any additional local use recommendations for your area.

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

**Resistance Management:** 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 local Dow AgroSciences representative, extension specialist, certified crop advisor, or state agricultural experiment station for information on alternative effective products to use in your area.

**Restrictions:**

- **Preharvest Interval:** Do not apply within 1 day of harvest.
- **Minimum Treatment Interval:** Do not make applications less than 4 days apart.
- Do not apply more than a total of 29 fl oz of SpinTor 2SC (0.45 lb ai spinosad) per acre per crop or make more than 5 applications per calendar year.

**Bushberries**

**(Insect Suppression)**

Bushberries including blueberry, currant, elderberry, gooseberry, huckleberry, juneberry, lingonberry, salal

**Pests and Application Rates:**

Pests	SpinTor 2SC (fl oz/acre)
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armyworms blueberry gall midge cherry fruitworm cranberry fruitworm currant fruitfly fireworms leafrollers light brown apple moth loopers thrips <sup>1</sup>	4 - 6
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<sup>1</sup>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 local use recommendations for your area.

**Application Rate:** The amount of SpinTor 2SC per acre will depend upon plant size and volume of foliage present and pest pressure. Use a lower rate in the rate range for light infestations and/or small plants and a higher rate in the rate range for heavy infestations and/or larger plants.

**Resistance Management:** Do not make more than 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 local Dow AgroSciences representative, extension specialist, certified crop advisor, or state agricultural experiment station for information on alternative effective products to use in your area.

**Restrictions:**

- **Preharvest Interval:** Do not apply within 3 days of harvest.
- **Minimum Treatment Interval:** Do not make applications less than 6 days apart.
- Do not apply more than a total of 29 fl oz of SpinTor 2SC (0.45 lb ai spinosad) per acre per crop
- Do not make more than 6 applications per calendar year or more than 3 applications per crop.

**Caneberries**

Caneberries including blackberry, loganberry, red and black raspberry, cultivars and/or hybrids of these

**Pests and Application Rates:**

Pests	SpinTor 2SC (fl oz/acre)
armyworms green fruitworm leafrollers light brown apple moth raspberry fruitworm sawfly	4 - 6

**Specific Use Directions:**

**Application Timing:** Treat when pests appear, targeting eggs at hatch or small larvae. Heavy infestations may require repeat applications not less than 5 days apart, but follow resistance management guidelines. Consult your Dow AgroSciences representative, extension service specialist, certified crop advisor or your state agricultural experiment station for any additional local use recommendations for your area.

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**Application Rate:** The amount of SpinTor 2SC per acre will depend upon plant size and volume of foliage present and pest pressure. Use a higher rate in the rate range for larger larvae or moderate to severe infestations and/or larger plant volume.

**Resistance Management:** Do not make more than 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 local Dow AgroSciences representative, extension specialist, certified crop advisor, or state agricultural experiment station for information on alternative effective products to use in your area.

**Restrictions:**

- **Preharvest Interval:** Do not apply within 1 day of harvest.
- **Minimum Treatment Interval:** Do not make applications less than 5 days apart.
- Do not apply more than a total of 29 fl oz of SpinTor 2SC (0.45 lb ai spinosad) per acre per crop or make more than 6 applications per calendar year.

**Citrus**

Citrus including grapefruit, lemons, limes, oranges, tangerines

**Pests and Application Rates :**

Pests	SpinTor 2SC (fl oz/acre)
citrus leafminer citrus orangedog citrus thrips <sup>1</sup> light brown apple moth	4 - 10

<sup>1</sup>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 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 area use recommendations for your area.

**Application Rate:** The rate per acre of SpinTor 2SC will depend upon tree size and pest pressure. Use a lower rate in the rate range for light infestations and/or small trees and a higher rate in the rate range for heavy infestations and/or large trees.

**Resistance Management:** Citrus thrips are present most of the time on the crop during the growing season and have demonstrated a high potential to develop resistance to insect control products. Do not apply SpinTor 2SC more than 2 times per year. If additional treatments are required, rotate to another class of products. For resistance management purposes, do not apply to citrus nurseries or citrus in greenhouses.

**Restrictions:**

- **Preharvest Interval:** Do not apply within 1 day of harvest.
- Do not apply more than a total of 29 fl oz of SpinTor 2SC (0.45 lb ai spinosad) per acre per crop.

**Cole Crops (*Brassica* Vegetables)**

Cole crops (*Brassica* vegetables) including 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

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In the state of Georgia, do not apply SpinTor 2SC to: broccoli raab, Chinese cabbage (bok choy), collards, kale, mizuna, mustard greens, mustard spinach, rape greens

**Pests and Application Rates:**

Pests	SpinTor 2SC (fl oz/acre)
cabbage looper diamondback moth imported cabbageworm	3 - 6
armyworms (including beet armyworm) leafminers <sup>1</sup> thrips <sup>1</sup>	4 - 10

<sup>1</sup>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 local use recommendations for your area.

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

**Resistance Management:** Do not make more than 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. For **diamondback moth**, if additional treatments are required after 2 consecutive applications of Group 5 insecticides, rotate to another class of effective insecticides for at least 2 applications. Consult your local Dow AgroSciences representative, extension specialist, certified crop advisor, or state agricultural experiment station for information on alternative effective products to use in your area. 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 SpinTor 2SC per calendar year for diamondback moth over an entire farm (an area of abutting or nearby fields).

**Restrictions:**

- **Preharvest Interval:** Do not apply within 1 day of harvest.
- Do not apply more than a total of 29 fl oz of SpinTor 2SC (0.45 lb ai spinosad) per acre per crop.
- Do not apply to seedling cole crops grown for transplant within a greenhouse, shade house, or field plot.

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

**Pests and Application Rates:**

Pests	SpinTor 2SC (fl oz/acre)
armyworms (including fall armyworm) European corn borer	1.5 - 6
corn earworm southwestern corn borer western bean cutworm	3 - 6

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**Specific Use Directions:**

**Application Timing:** Scout for **European corn borer** and **armyworms** with enough regularity to monitor egg laying and egg hatch. Applications of SpinTor 2SC should be timed to coincide with peak egg hatch of each generation. Frequent treatments may be necessary when the crop is growing rapidly, during silking or under heavy pest pressure. For **corn earworm** control, a 1- to 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 as a foliar spray at the rate indicated for target pest. Use a higher rate in the rate range for heavy infestations or advanced growth stages of target pests.

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

**Chemigation:** SpinTor 2SC may be applied to corn by chemigation at labeled rates. Refer to the Chemigation Application section for application guidelines for chemigation.

**Restrictions:****Sweet Corn, Popcorn, Corn Grown for Seed**

- **Preharvest Interval:** Do not apply within 1 day of grain harvest or within 3 days of forage or fodder harvest.
- Do not apply more than a total of 29 fl oz of SpinTor 2SC (0.45 lb ai spinosad) per acre per year.

**Teosinte**

- **Preharvest Interval:** Do not apply within 28 days of grain harvest or within 3 days of fodder or forage harvest.
- Do not apply more than a total of 12 fl oz of SpinTor 2SC (0.188 lb ai spinosad) per acre per year.

**Cranberry****(Insect Suppression)****Pests and Application Rates:**

<b>Pests</b>	<b>SpinTor 2SC (fl oz/acre)</b>
armyworms currant fruitfly fireworms leafrollers light brown apple moth loopers sparganothis fruitworm thrips	4 - 10

**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 local use recommendations for your area.

**Application Rate:** Application rate within the rate range will depend upon plant size and volume of foliage present and pest pressure. Use a higher rate in the rate range for larger larvae or moderate to severe infestations and and/or larger plant volume.

**Chemigation:** SpinTor 2SC may be applied to cranberries by chemigation at labeled rates. Refer to the Chemigation Application section for application guidelines for chemigation.

**Resistance Management:** 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 local Dow AgroSciences representative, extension specialist, certified crop advisor, or state agricultural experiment station for information on alternative effective products to use in your area.

**Restrictions:**

- **Preharvest Interval:** Do not apply within 3 days of harvest.
- **Minimum Treatment Interval:** Do not make applications less than 7 days apart.
- Do not apply more than a total of 29 fl oz of SpinTor 2SC (0.45 lb ai spinosad) per acre per crop or make more than 6 applications per calendar year.

**Cucurbits**

Cucurbits including cucumber, edible gourds, muskmelons (cantaloupe, honeydew, etc.), pumpkin, summer squash, watermelon, winter squash

**Pests and Application Rates:**

Pests	SpinTor 2SC (fl oz/acre)
armyworms cabbage looper melon worm pickleworm rindworms	4 - 8
leafminers <sup>1</sup> thrips <sup>1</sup>	6 - 8

<sup>1</sup>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:** Use SpinTor 2SC at the dosages indicated by application as a foliar spray. Heavy infestations may require repeat applications, but make no more than 6 applications per crop. 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 area use recommendations for your area.

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

**Resistance Management:** Do not make more than 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 local Dow AgroSciences representative, extension specialist, certified crop advisor, or state agricultural experiment station for information on alternative effective products to use in your area.

**Restrictions:**

- **Preharvest Interval:** Do not apply within 3 days of harvest for all crops except cucumbers. Do not apply within 1 day of harvest for cucumbers.
- Do not apply more than a total of 29 fl oz of SpinTor 2SC (0.45 lb ai spinosad) per acre per season.

**Fruiting Vegetables and Okra**



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Fruiting vegetables including eggplant, ground cherry, pepino, pepper, tomatillo, tomato

**Pests and Application Rates:**

<b>Pests</b>	<b>SpinTor 2SC (fl oz/acre)</b>
lepidopterous larvae (maintenance only)	1.5 - 3
Colorado potato beetle European corn borer hornworms light brown apple moth loopers tomato fruitworm	3 - 6
armyworms (including beet armyworm) flower thrips <sup>1, 2</sup> thrips palmi <sup>1, 2</sup> tomato pinworm	4 - 8
leafminers <sup>1</sup> ( <i>Liriomyza</i> spp.)	6 - 10

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

<sup>2</sup>For thrips, if additional treatments are required after 2 consecutive applications of Group 5 insecticides, rotate to another class of effective insecticides for at least 2 applications.

**Specific Use Directions:**

**Application Timing:** Scout weekly throughout the season to monitor and track populations of leafminers and thrips to determine when economic thresholds are exceeded. Scout weekly throughout the season to monitor and track pest and beneficial populations. For tracking **lepidopterous larvae**, scout with enough regularity to monitor the population size of each of the labeled pests. Applications of SpinTor 2SC should be timed to coincide with peak egg hatch in species without overlapping generations. Consult current pest management recommendations for specific guidelines.

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

**Resistance Management:** Do not make more than 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. For thrips, if additional treatments are required after 2 consecutive applications of Group 5 insecticides, rotate to another class of effective insecticides for at least 2 applications. Consult your local Dow AgroSciences representative, extension specialist, certified crop advisor, or state agricultural experiment station for information on alternative effective products to use in your area. Do not apply Group 5 insecticides to consecutive generations of Colorado potato beetle and do not make more than 2 applications per single generation of Colorado potato beetle.

**Restrictions:**

- **Preharvest Interval:** Do not apply within 1 day of harvest.
- Do not apply more than a total of 29 fl oz of SpinTor 2SC (0.45 lb ai spinosad) per acre per crop.
- Do not apply to seedling fruiting vegetables grown for transplant within a greenhouse, shade house, or field plot.

**Grape**

**Pests and Application Rates:**

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Pests	SpinTor 2SC (fl oz/acre)
grape berry moth light brown apple moth redbanded leafroller thrips	4 - 8

**Specific Use Directions:**

**Application Timing:** Treat when pests appear, targeting eggs at hatch or small larvae. Heavy infestations may require repeat applications not less than 5 days apart, but follow resistance management guidelines. Consult your Dow AgroSciences representative, extension service specialist, certified crop advisor or your state agricultural experiment station for any additional local use recommendations for your area.

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

**Resistance Management:** Do not make more than 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 local Dow AgroSciences representative, extension specialist, certified crop advisor, or state agricultural experiment station for information on alternative effective products to use in your area.

**Restrictions:**

- **Preharvest Interval:** Do not apply within 7 days of harvest.
- **Minimum Treatment Interval:** Do not make applications less than 5 days apart.
- Do not apply more than a total of 29 fl oz of SpinTor 2SC (0.45 lb ai spinosad) per acre per crop.
- The maximum seasonal application rate east of the Rocky Mountains is 0.36 lb ai spinosad per acre.

**Herbs**

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

**Pests and Application Rates:**

Pests	SpinTor 2SC (fl oz/acre)
armyworms loopers thrips (suppression)	4 - 6

**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 local use recommendations for your area.

**Application Rate:** Apply SpinTor 2SC as a foliar spray at the rate indicated to control target pests. Use a higher rate in the rate range for larger larvae or high infestations and/or larger plant volume. Heavy

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infestations may require repeat applications not less than 5 days apart, but follow resistance management guidelines.

**Resistance Management:** 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 local Dow AgroSciences representative, extension specialist certified crop advisor, or state agricultural experiment station for information on alternative effective products to use in your area.

**Restrictions:**

- **Preharvest Interval:** Do not apply within 1 day of harvest.
- Do not apply more than a total of 30 fl oz of SpinTor 2SC (0.47 lb ai spinosad) per acre per crop.
- Do not make more than 5 applications per calendar year or more than 3 applications per crop.

## Hops, Dried Cones

**Pests and Application Rates:**

Pests	SpinTor 2SC (fl oz/acre)
armyworms loopers thrips (suppression)	4 – 6

**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 local use recommendations for your area.

**Application Rate:** Apply as a foliar spray at the rate indicated to control target pests. Heavy infestations may require repeat applications not less than 5 days apart, but follow resistance management guidelines. Use a higher rate in the rate range for larger larvae or high infestations and/or larger plant volume.

**Resistance Management:** For resistance management purposes, do not apply more than 3 times in any 30-day period. Rotate to a different class of insect control products or use no treatment for the next 30 days. Do not make more than 4 applications per crop.

**Restrictions:**

- **Preharvest Interval:** Do not apply within 1 day of harvest.
- Do not apply more than a total of 30 fl oz of SpinTor 2SC (0.47 lb ai spinosad) per acre per crop or make more than 5 applications per crop.

## Leafy Vegetables, Leaves of Root and Tuber and Legume Vegetables, and Watercress

Leafy vegetables and leaves of root and tuber and legume vegetables including arugula, beets, celery, chervil, corn salad, cress, dandelion, dock, edible chrysanthemum, endive, fennel, garden peas, head lettuce, leaf lettuce, parsley, purslane, radicchio, rhubarb, spinach, Swiss chard, turnip greens

**Pests and Application Rates:**

Pests	SpinTor 2SC (fl oz/acre)
diamondback moth	1.5 - 3
cabbage looper imported cabbage worm	3 - 6

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armyworms (including beet armyworm)	4 - 8
leafminers <sup>1</sup> thrips <sup>1</sup>	6 - 10

<sup>1</sup>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 local use recommendations for your area.

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

**Resistance Management:** Do not make more than 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 local Dow AgroSciences representative, extension specialist, certified crop advisor, or state agricultural experiment station for information on alternative effective products to use in your area.

**Restrictions:**

- **Preharvest Intervals:**  
**Leafy vegetables (including watercress):** Do not apply within 1 day of harvest.  
**Leaves of root, tuber and legume vegetables:** Do not apply within 3 days of harvest.
- Do not apply more than a total of 29 fl oz of SpinTor 2SC (0.45 lb ai spinosad) per acre per crop.
- Do not apply to seedling leafy crops grown for transplant within a greenhouse or shade house.

**Legume Vegetables (Succulent and Dried Beans and Peas)**

Legume vegetables including adzuki bean, blackeyed pea, chickpea, cowpea, crowder pea, edible-pod pea, English pea, fava bean, field bean, field pea, garbanzo bean, garden pea, green pea, kidney bean, lentil, lima bean, lupins, mungbean, navy bean, pigeon pea, pinto bean, runner bean, snap bean, snow pea, sugar snap pea, tepary bean, wax bean, yardlong bean

**Pests and Application Rates:**

Pests	SpinTor 2SC (fl oz/acre)
European corn borer (eggs and larvae)	3 - 6
armyworms corn earworm loopers	4 - 6
leafminers <sup>1</sup> thrips <sup>1</sup>	4.5 - 6

<sup>1</sup>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 make no more than 6 applications per crop. Treat when pests appear, targeting eggs at hatch or small larvae. For **European corn borer**, initiate when moth flights first appear and use the lower rate 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 as a foliar spray at the rate indicated for target pest. Use a higher rate in the rate range for heavy infestations or advanced growth stages of target pests.

**Resistance Management:** Do not make more than 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 local Dow AgroSciences representative, extension specialist, certified crop advisor, or state agricultural experiment station for information on alternative effective products to use in your area.

**Restrictions:**

**Succulent Beans and Peas:**

- **Preharvest Interval:** Do not apply within 3 days of harvest.
- Do not apply more than a total of 29 fl oz of SpinTor 2SC (0.45 lb ai spinosad) per acre per season.

**Dried Beans and Peas:**

- **Preharvest Interval:** Do not apply within 28 days of harvest.
- Do not apply more than a total of 12 fl oz of SpinTor 2SC (0.188 lb ai spinosad) per acre per season.
- Do not feed forage or hay to meat or dairy animals.

**Mint**

**Pests and Application Rates:**

Pests	SpinTor 2SC (fl oz/acre)
armyworms cutworms dipteran leafminers <sup>1</sup> loopers thrips (suppression) <sup>1</sup>	4 – 10

<sup>1</sup> Control of leafminers and thrips may be improved with the addition of an adjuvant to the spray mixture. See Use of Adjuvants under Mixing. Control in mint has been variable; high pressure directed sprays 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 local use recommendations for your area.

**Application Rate:** Apply 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 rate range for heavier infestations or advanced growth stages of target pests.

**Resistance Management:** 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 local Dow AgroSciences representative, extension specialist, certified crop advisor, or state agricultural experiment station for information on alternative effective products to use in your area.

**Restrictions:**

- **Preharvest Interval:** Do not apply within 7 days of harvest.

- **Minimum Treatment Interval:** Do not make applications less than 4 days apart.
- Do not apply more than a total of 29 fl oz of SpinTor 2SC (0.45 lb ai spinosad) per acre per crop.
- Do not make more than 4 applications per calendar year or more than 3 applications per crop.

**Peanut**

**Pests and Application Rates:**

Pests	SpinTor 2SC
	(fl oz/acre)
armyworms, including: beet armyworm fall armyworm true armyworm yellowstriped armyworm cabbage looper corn earworm European corn borer green cloverleaf worm red-necked peanut worm saltmarsh caterpillar soybean looper velvetbean caterpillar	3 - 6

**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 local use recommendations for your area.

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

**Resistance Management:** Do not make more than 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 local Dow AgroSciences representative, extension specialist, certified crop advisor, or state agricultural experiment station for information on alternative effective products to use in your area.

**Restrictions:**

- **Preharvest Interval:** Do not apply within 3 days of nut harvest or within 14 days of forage.
- **Minimum Treatment Interval:** Do not make applications less than 7 days apart.
- Do not apply more than a total of 29 fl oz of SpinTor 2SC (0.45 lb ai spinosad) per acre per crop or make more than 3 applications per calendar year.
- Do not allow grazing of crop residue or harvest of crop residue for hay until 14 days after the last application.

**Pome Fruits**

Pome fruits including apples, crabapple, mayhaw, pears, quince

**Pests and Application Rates:**

Pests	SpinTor 2SC (fl oz/acre)
leafminers	4 - 10

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spotted tentiform western tentiform	
codling moth European corn borer gypsy moth leafrollers oblique-banded pandemis light brown apple moth oriental fruit moth thrips <sup>1</sup> tufted apple budmoth	6 - 10

<sup>1</sup>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:** Optimal timing for **leafminers** and **leafrollers** may vary between species and geographic location. For **leafminers**, monitor the moth flights and infestation densities of both the sap-feeding and tissue-feeding stage. For optimum control, treat at first appearance of leaf mining activity. For **leafrollers**, monitor the moth flights and the infestation densities of the larval stages. Repeat application as necessary to maintain control. **Codling moth** and **oriental fruit moth** treatments should closely follow regional spray recommendations based upon biofix dates and pheromone trap catches. **Codling moth** and **oriental fruit moth** larvae must be controlled before they penetrate the fruit. **Codling moth** and **oriental fruit moth** applications will provide control for no more than 10 days. Repeat application as necessary to maintain control. 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 SpinTor 2SC per acre will depend upon tree size and pest pressure. Use a lower rate in the rate range for light infestations and/or small trees and a higher rate in the rate range for heavy infestations and/or larger trees.

**Resistance Management:** 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 local Dow AgroSciences representative, extension specialist, certified crop advisor, or state agricultural experiment station for information on alternative effective products to use in your area. Do not treat consecutive generations of codling moth, oriental fruit moth, and leafrollers.

**Restrictions:**

- **Preharvest Interval:** Do not apply within 7 days of harvest.
- Do not apply more than a total of 29 fl oz of SpinTor 2SC (0.45 lb ai spinosad) per acre per crop.
- Do not apply more than 3 sprays targeted at leafrollers per season.

**Potatoes, Tuberos and Corm Vegetables, and Artichoke**

Potatoes and tuberos and corm vegetables including cassava, chayote root, Chinese artichoke, ginger, Jerusalem artichoke, potatoes, sweet potatoes, tumeric, yams

**Pests and Application Rates:**

Pests	SpinTor 2SC (fl oz/acre)
Colorado potato beetle European corn borer	3.2 – 6.4

armyworms artichoke plume moth dipteran leafminers ( <i>Liriomyza</i> ) loopers thrips <sup>1</sup>	4.8 – 9.6
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<sup>1</sup>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. When plants are growing rapidly, repeat applications may be necessary to protect new foliage. Consult your Dow AgroSciences representative, extension service specialist, certified crop advisor or your state agricultural experiment station for any additional local use recommendations for your area.

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

**Chemigation:** SpinTor 2SC may be applied to potatoes by chemigation at labeled rates. Refer to the Chemigation Application section for application guidelines for chemigation.

**Resistance Management:** 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 local Dow AgroSciences representative, extension specialist, certified crop advisor, or state agricultural experiment station for information on alternative effective products to use in your area. Do not apply SpinTor 2SC to consecutive generations of Colorado potato beetle and do not make more than 2 applications per single generation of Colorado potato beetle.

**Restrictions:**

- **Preharvest Intervals:**  
**Artichoke:** Do not apply within 2 days of harvest.  
**All others:** Do not apply within 7 days of harvest.
- **Minimum Treatment Interval:** Do not make applications less than 7 days apart or apply more than 4 times per crop.
- Do not apply more than a total of 21 fl oz (22.5 fl oz for artichoke) of SpinTor 2SC (0.33 lb ai spinosad) per crop.

**Root Vegetables**

Root vegetables including black salsify, carrot, celeriac, chicory, edible burdock, garden beet, ginseng, horseradish, parsnip, radish, oriental radish, rutabaga, salsify, skirret, Spanish salsify, sugar beet, turnip, turnip-rooted chervil, turnip-rooted parsley

**Pests and Application Rates:**

Crops	Pests	SpinTor 2SC (fl oz/acre)
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black salsify carrot chicory ginseng horseradish parsnip salsify skirret Spanish salsify turnip-rooted chervil turnip-rooted parsley	armyworms dipteran leafminers European corn borer fleabeetle loopers thrips <sup>1</sup>	3 - 6
celeriac edible burdock oriental radish radish rutabaga turnip		
garden beet sugar beet	Colorado potato beetle European corn borer	3 - 10
	armyworms artichoke plume moth dipteran leafminers ( <i>Liriomyza</i> ) loopers thrips <sup>1</sup>	4.5 - 10

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

#### 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 local use recommendations for your area.

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

**Resistance Management:** 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 local Dow AgroSciences representative, extension specialist, certified crop advisor, or state agricultural experiment station for information on alternative effective products to use in your area. Do not apply SpinTor 2SC to consecutive generations of Colorado potato beetle and do not make more than 2 applications per single generation of Colorado potato beetle.

#### Restrictions:

- **Preharvest Interval:** Do not apply within 3 days of harvest.
- **Garden beet and sugar beet**  
**Minimum Treatment Interval:** Do not make applications less than 7 days apart.  
Do not apply more than a total of 21 fl oz of SpinTor 2SC (0.33 lb ai spinosad) per crop or make more than 4 applications per crop.
- **Black salsify, carrot, chicory, ginseng, horseradish, parsnip, salsify, skirret, Spanish salsify, turnip-rooted chervil, turnip-rooted parsley:**  
**Minimum Treatment Interval:** Do not make applications less than 5 days apart.

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Do not apply more than a total of 21 fl oz of SpinTor 2SC (0.33 lb ai spinosad) per acre per crop or make more than 4 applications per calendar year.

- **Celeriac, edible burdock, Oriental radish, radish, rutabaga, turnip and other root vegetables not specifically listed:**

**Minimum Treatment Interval:** Do not make applications less than 5 days apart.

Do not apply more than a total of 18 fl oz of SpinTor 2SC (0.28 lb ai spinosad) per acre per crop or make more than 3 applications per calendar year.

**Small Cereal Grains**

Small cereal grains including barley, buckwheat, oats, rye, triticale, wheat

**Pests and Application Rates:**

Pests	Spintor 2SC (fl oz/acre)
cereal leaf beetle	2 - 6
armyworms	3 - 6
grasshoppers	

**Specific Use Directions:**

**Application Timing:** Scout for **armyworms** and **grasshoppers** with enough regularity to monitor egg laying and egg hatch and treat when thresholds are reached. Applications of Spintor 2SC perform best when timed to coincide with peak egg hatch and/or small larval stage of growth of each generation.

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

**Resistance Management:** Do not make more than 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 local Dow AgroSciences representative, extension specialist, certified crop advisor, or state agricultural experiment station for information on alternative effective products to use in your area.

**Restrictions:**

- **Preharvest Interval:** Do not apply within 21 days of grain or straw harvest or within 3 days of forage, fodder or hay harvest.
- Do not apply more than a total of 19 fl oz of SpinTor 2SC (0.28 lb ai spinosad) per acre per year.
- Do not allow cattle to graze treated area until spray has dried.

**Spices (Except Black Pepper)**

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

**Pests and Application Rates:**

Pests	SpinTor 2SC (fl oz/acre)
lepidopteran larvae	4 - 6
flea beetles	6 - 10
dipteran leafminers <sup>1</sup>	
thrips <sup>1</sup>	

<sup>1</sup>Suppression of leafminers and thrips may be improved with the addition of an adjuvant to the spray

mixture. See Use of Adjuvants under Mixing.

**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 local use recommendations for your area.

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

**Resistance Management:** For resistance management purposes, do not apply SpinTor 2SC more than 3 times in any 30-day period or apply sprays less than 10 days apart. Whenever SpinTor 2SC is applied up to 3 times in succession, this should be followed by no use of SpinTor 2SC for a 30-day period or rotation to another insecticide class.

**Restrictions:**

- **Preharvest Interval:** Do not apply within 14 days of harvest.
- **Minimum Treatment Interval:** Do not make applications less than 10 days apart.
- Do not apply more than a total of 29 fl oz of SpinTor 2SC (0.45 lb ai of spinosad) per acre per crop or make more than 5 applications per calendar year.

**Stone Fruits**

Stone fruits including apricots, cherries, nectarines, peaches, plums, prunes

**Pests and Application Rates:**

Pests	SpinTor 2SC (fl oz/acre)
cherry fruit fly green fruitworm leafminers <sup>1</sup> leafrollers (such as fruit tree oblique-banded pandemis redbanded variegated) light brown apple moth oriental fruit moth peach twig borer thrips <sup>1</sup> western cherry fruit fly	4 - 8

<sup>1</sup>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:** Peach twig borer applications can be made dormant, delayed dormant or as summer sprays. Optimal timing for leafminers and leafrollers may vary between species and geographic location. For leafminers, monitor the moth flights and the infestation densities of both the sap-feeding and tissue-feeding stage, but for optimal control, treat before significant tissue-feeding mines are observed. For leafrollers, monitor the moth flights and the infestation densities of the larval stages. A 10- to 14-day re-treatment schedule may be necessary to maintain control if the crop is growing rapidly or if there is heavy pest pressure. Thorough coverage is necessary for optimal control. For thrips, a 3-

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to 4-day re-treatment schedule may be necessary at flowering. After flowering, a 5- to 7-day re-treatment schedule may be followed. For **oriental fruit moth**, no more than 10 days of residual control can be expected. If longer residual is required, make a second application of SpinTor 2SC or other insecticide labeled for **oriental fruit moth**. For **cherry fruit fly**, maintain protective sprays at 7-day intervals while adults are present and fruit is susceptible to attack. 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:** Use a higher rate in the rate range for large trees, heavy infestations, or advanced growth stages of target pest, especially if spray volume or coverage is marginal.

**Resistance Management:** 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 local Dow AgroSciences representative, extension specialist, certified crop advisor, or state agricultural experiment station for information on alternative effective products to use in your area. Do not treat consecutive generations of oriental fruit moth and leafrollers. Do not apply more than 3 sprays targeted at leafrollers per season.

**Restrictions:**

- **Preharvest Interval:** Do not apply within 7 days of harvest for cherries, plums, prunes and other stone fruit crops, within 14 days of harvest for peaches and apricots, or within 1 day of harvest for nectarines.
- Do not apply more than a total of 29 fl oz of SpinTor 2SC (0.45 lb ai spinosad) per acre per year.
- Do not apply more than 3 sprays targeted at leafrollers per season.

## Strawberry

**Pests and Application Rates:**

Pests	SpinTor 2SC (fl oz/acre)
armyworms, including beet armyworms leafrollers light brown apple moth thrips <sup>1</sup>	4 - 6

<sup>1</sup>For thrips, if additional treatments are required after 2 consecutive applications of Group 5 insecticides, rotate to another class of effective insecticides for at least 2 applications

**Specific Use Directions:**

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

**Application Rate:** Use SpinTor 2SC at the dosages indicated as a foliar spray to control target pests. Use a higher rate in the rate range for larger larvae or moderate to severe pest infestations. Heavy infestations may require repeat applications but follow resistance management guidelines.

**Resistance Management:** 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. For thrips, if additional treatments are required after 2 consecutive applications of Group 5 insecticides, rotate to another class of effective insecticides for at least 2 applications. Consult your local Dow AgroSciences

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representative, extension specialist, certified crop advisor, or state agricultural experiment station for information on alternative effective products to use in your area.

**Restrictions:**

- **Preharvest Interval:** Do not apply within 1 day of harvest.
- Do not apply more than a total of 29 fl oz of SpinTor 2SC (0.45 lb ai spinosad) per acre per crop.
- Do not make more than 5 applications per year.

**Tree Farms or Plantations**

**Conifers, including Christmas trees, and deciduous trees**

**Pests and Application Rates:**

Pests	SpinTor 2SC (fl oz/acre)
lepidopterous larvae, such as: bagworm fall webworm gypsy moth hemlock looper jackpine budworm pine tip moth redhumped caterpillar spruce budworm tent caterpillar tussock moths light brown apple moth sawfly larvae, such as: European pine pear redheaded pine	2 - 8

**Specific Use Directions:**

**Application Timing:** Time applications to reach larvae when small or just hatching. Repeat application as necessary to maintain control. Consult with your Dow AgroSciences representative, state agricultural experiment station, certified pest control advisor or extension specialist for information on application timing for specific pests in your area.

**Application Rates:** The rate of SpinTor 2SC per acre will depend upon tree size and severity of infestation. Use a higher rate in the rate range for large trees or heavy infestations. Apply in sufficient volume to ensure thorough coverage.

**Resistance Management:** 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 local Dow AgroSciences representative, extension specialist, certified crop advisor, or state agricultural experiment station for information on alternative effective products to use in your area.

**Restrictions:**

- Do not apply more than a total of 29 fl oz of SpinTor 2SC (0.45 lb ai spinosad) per acre per year.

**Tree Fruits**

**(Insect Suppression)**

Tree fruits including acerola, atemoya, avocado, biriba, black sapote, canistel, cherimoya, custard apple, feijoa, guava, ilama, jaboticaba, longan, lychee, mamey sapote, mango, papaya, passionfruit, pulasan,

rambutan, sapodilla, soursop, Spanish lime, star apple, starfruit, sugar apple, ti leaves, wax jambu (wax apple), white sapote

**Pests and Application Rates:**

Pests	SpinTor 2SC (fl oz/acre)
katydids	4 - 10
lepidopterous larvae	
avocado leafroller	
citrus peelminer	
cutworms	
fruit tree leafroller	
naval orange worm	
orange tortrix	
western tussock moth	
light brown apple moth	
thrips <sup>1</sup>	

<sup>1</sup>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 or in accordance with local economic thresholds. Consult your Dow AgroSciences representative, extension service specialist, certified crop advisor or your state agricultural experiment station for any additional local use recommendations for your area.

**Application Rate:** The amount of SpinTor 2SC per acre will depend upon tree size and pest pressure. Use a lower rate in the rate range for light infestations and/or small trees and a higher rate in the rate range for heavy infestations and/or large trees.

**Resistance Management:** Do not make more than 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 local Dow AgroSciences representative, extension specialist, certified crop advisor, or state agricultural experiment station for information on alternative effective products to use in your area.

**Restrictions:**

- **Preharvest Intervals:** Do not apply within 1 day of harvest.
- Do not apply more than a total of 29 fl oz of SpinTor 2SC (0.45 lb ai spinosad) per acre per crop.
- In order to prevent or delay resistance development in thrips, do not apply SpinTor 2SC more than 2 times per year.
- For resistance management purposes, do not apply to tree fruits grown in nurseries or in greenhouses.

**Tree Nuts and Pistachios**

Tree nuts including almonds, cashew, chestnut, filbert (hazelnut), macadamia nut, pecan, walnut

**Pests and Application Rates:**

Pests	SpinTor 2SC	
	(fl oz/acre)	Dilute Spray (fl oz/100 gal)
fall webworm	4 - 10	1 - 2.5
filbert worm		
hickory shuckworm		
light brown apple moth		
navel orange worm		

oblique banded leafroller peach twig borer pecan nut casebearer redhumped caterpillar walnut caterpillar walnut husk fly		
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**Specific Use Directions:**

**Application Timing:** Apply SpinTor 2SC as either a dormant or a foliar spray when pests appear or in accordance with local conditions. Apply as a concentrate or dilute spray using conventional, power operated spray equipment (see Orchard Spraying section under Application). Consult your Dow AgroSciences representative, extension service specialist, certified crop advisor or your state agricultural experiment station for any additional local use recommendations for your area.

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

**Application Rate:** The rate per acre of SpinTor 2SC will depend upon tree size and volume of foliage present and pest pressure. Use a higher rate in the rate range for large trees or heavy infestations.

**Spray Volume:** Dilute sprays are sprayed to the point of runoff. The application rate range in the table is based upon a spray volume of 400 gallons per acre. Gallonage of dilute sprays will vary depending upon tree size, density of canopy, stage of seasonal growth, and spacing in the orchard.

**Resistance Management:** Do not make more than 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 local Dow AgroSciences representative, extension specialist, certified crop advisor, or state agricultural experiment station for information on alternative effective products to use in your area. Do not apply more than 3 sprays targeted at leafrollers per season.

**Restrictions:**

- **Preharvest Interval:** Do not apply within 14 days of harvest.
- **Minimum Treatment Interval:** Do not make applications less than 7 days apart.
- Do not apply more than a total of 29 fl oz of SpinTor 2SC (0.45 lb ai spinosad) per acre per crop.
- Do not apply more than 3 sprays targeted at leafrollers per season.

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

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

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